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Value Chain Analysis Ethiopia pulses and oilseeds

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Section 1

Introduction

1.1 Rationale and background

The Centre for the Promotion of Imports from developing countries (Centrum tot Bevordering van de Import uit ontwikkelingslanden, CBI) has identified Ethiopia as a target country. Within Ethiopia, it considers oilseeds and pulses as one of the promising sectors for an increase in export volume, jobs and corporate social responsibility. Earlier initiatives have clearly shown Ethiopia's potential, as well as some of its issues (Boere et al., 2015; NABC and FME-CWM, 2015).

Ethiopia is a major producer of oilseeds and pulses, in particular sesame seed, which is the second-largest export commodity from Ethiopia. The European Union and Ethiopia have long-standing trade relationships. Whereas the EU is Ethiopia's second-largest partner both for imports and exports, Ethiopia is the EU's 69th-most important trading partner (84th on imports and 62nd on exports).

Oilseeds, pulses and derived products, such as oils, meal and cakes, have a variety of applications in human and animal consumption. Their importance is steadily growing for the European Union as consumers are looking for more ethnic cuisine and vegetable protein. At the same time, increasing livestock production also requires fat and protein, which are readily delivered by oilseeds and pulses.

The Ethiopian production of oilseeds and pulses is mainly in the hands of organised and independent smallholders. Both crop types provide a good return for farmers, in addition to delivering protein for their own consumption which is much cheaper than meat or fish. As a result, oilseeds and pulses contribute to food security, improve the financial situation of farmers and are an earner of foreign exchange (FOREX) – a triple win for this least-developed country.

At the same time, recent developments in Ethiopia have made exporters shift towards the quicker and easier-to-serve Asian markets. Due to market distortions, professional exporters of oilseeds and pulse are being replaced by import-export organisations which use the agricultural goods merely as an earner of foreign exchange and which are willing to sustain substantial losses on these exports in order to fund their highly profitable imports.

1.2 Objectives

The objective of this study is to analyse the value chains of promising products within the oilseeds and pulses sector, starting from an initial list of 23 products.

This study tries to identify opportunities and competitive advantages in the export of oilseeds and pulses to the European Union.

The main goal is to identify potential interventions for CBI, based on an analysis of the current and future supply from Ethiopia as well as the demand for these products in the European Union, the structure of the sector, its main issues and possible solutions to those issues. Where possible, partners for CBI in possible interventions should be identified.

1.3 Approach

The study was conducted in three phases.

In the first phase, a literature study was conducted to select the most promising oilseeds, pulses and derived value-added products. The products were analysed along four axes: production capacity, export capacity, current and past demand in the EU, and European trends.

For this phase, data were extracted from trade databases (COMTRADE, FAOSTAT, EUROSTAT) and contrasted with information made available from Ethiopia, in particular from the Ministry of Trade, the Central Statistical Agency of Ethiopia, and private sources such as the Ethiopian Pulses, Oilseeds and Spices Processors-Exporters Association (EPOSPEA). The information was collected and analysed according to a methodology described in Section 10; for each of the 23 initial products provided by CBI, a profile was created, on the basis of which a ranking was established. From this ranking, the most prominent oilseeds, pulses and value-added products were selected.

The initial list was then discussed during a first mission to Ethiopia during in-depth interviews and a larger stakeholder interaction event. In the course of these interviews, issues in the value chains were collected. After discussions with stakeholders on available varieties, production issues of certain products/varieties, issues with European market requirements, the internal market and the impact of currency availability on the export sector, a consensus was reached in the stakeholder meeting on a new list of priority products. This list was subsequently verified with institutional stakeholders in Ethiopia first and with CBI later.

In the second phase, for this shortlist of five products (sesame, soya beans, mung beans, sesame oil and tahini), more in-depth information was collected on all aspects of the value chain – including sustainability – in Ethiopia as well as on marketability in Europe. The economic picture of each product was studied from processing and export to final consumption. For consumption data, a selection of retail prices was collected online from the main importing countries in Europe.

Interviews were held with importers to estimate interest in Ethiopia as a source country, technical requirements, certification requirements and other aspects. Interviewees were identified through sources available from CBI, trade partners of Ethiopian companies and online. A mix of private organisations and associations was targeted. Interviewees were contacted by email and/or phone, while the follow-up on emails was done via phone. An online questionnaire was developed. Interviews, however, were conducted in a free format to ensure a better conversation with interviewees.

It was attempted to conduct some interviews with importers in Phase 1 before the first mission as well as in Phase 2. However, having importers respond to the request for interviews proved to be very difficult. While 52 organisations were contacted and a total of 154 contact attempts made (by web form, direct email and phone), only five interviews could be conducted. However, the five interviews were of a very high quality.

In the third phase, a second mission was arranged to validate the findings of the study with stakeholders as well as to identify solutions and potential partners. For this purpose, two workshops were arranged in Addis Ababa and Gondar. In addition, meetings were arranged and in-depth interviews conducted with representatives of the private sector, as well as with the Ministries of Trade and Agriculture, the EU Delegation, and other support organisations such as Agriterro and SNV.

1.4 Structure of the report

This report follows the suggested structure for CBI value chain analyses quite closely.

Section 1	is this introduction
Section 2	provides a short summary of the analysis and its findings
Section 3	looks at the products with growth potential and competitive position and results in an shortlist of products to analyse
Section 4	provides in-depth information about the chosen products, including economics, conformity to technical requirements etc.
Section 5	discusses the value chains of the priority products including its governance and sustainability
Section 6	identifies obstacles and opportunities in the aforementioned value chains
Section 7	then discusses on that basis possible intervention areas and their risks
Section 8	concludes the document
Appendices	collect methodologies, product profiles, interview details and technical requirements

1.5 Acknowledgements

This report was elaborated on behalf of the Centre for the Promotion of Imports from developing countries (CBI) under the guidance of Ms D.A. Braak and Mr M. Hulst. It is the result of a collaboration between Syntesa Partners & Associates, with their lead consultant Dr Heiner Lehr, and Shayashone Trading PLC as the Ethiopian partner led by Mr Yared Sertse.

We would like to acknowledge both the expert guidance of CBI and the substantial support that we obtained for this document from the value chain partners in Ethiopia as well as in Europe. As this report is heavily based on input from stakeholders, their support was crucial in delivering these results.

Section 2

Management summary

This document constitutes the value chain report carried out on behalf of the Centre for the Promotion of Imports from developing countries (CBI) under the title “Value Chain Analysis of Pulses and Oilseeds from Ethiopia”. It was carried out between July and September 2018.

The process of elaborating this report was as follows:

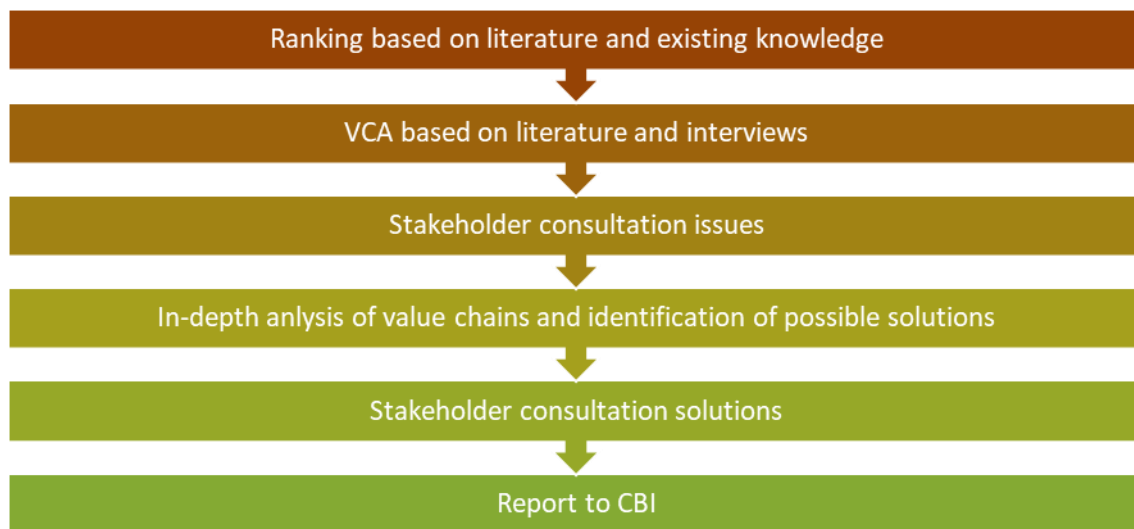


Figure 1 Process of elaborating the value chain report

The main outcomes of the report are listed below.

Products

1. **The most promising products are sesame, mung beans, soya beans, sesame oil and tahini.** After our in-depth review based on market data and interviews, we consider the most promising product-market combinations to be the ones listed below. We believe that there is a significant opportunity to increase exports to Europe for:
 - a. organic and conventional sesame seeds;
 - b. organic and conventional mung beans;
 - c. soya beans;
 - d. sesame oil marketed as a socially responsible product;
 - e. tahini, potentially as organic tahini.
2. **Export capacity for these products exists, but value addition is more difficult.** All the aforementioned products are currently being produced in Ethiopia, although to a very different extent. Production and export capacity exists for the agricultural raw materials. Soya and mung bean production is increasing and the government has already identified them as very interesting crops (albeit for the Asian market). While the capacity for oil and tahini is developed much less, it is promising in light of their greater profitability for Ethiopian companies.

Issues

9. **Productivity, especially in sesame, is low.** Due to a lack of Good Agricultural Practices, mechanisation, irrigation and agricultural inputs, yields are in most cases below the world average and far below international best results.
10. **Ethiopian market prices are distorted and specialist exporters have gone out of business as a consequence.** The Ethiopian oilseeds and pulses sector in general, and the sesame sector in particular, is currently distorted by two factors: the overwhelming presence of smallholders and the significant shortage of FOREX. Both factors together lead to a non-competitive pricing structure in the sector, which needs to be addressed in the framework of any successful intervention. As a result, many of the professional exporters in agricultural goods have been replaced by FOREX-seeking import organisations. Agricultural exports have not been profitable in recent years. Possible solutions are being discussed; we recommend a twofold strategy of shortening the value chain by working with exporting farmers and outgrower schemes on the one hand and increasing the amount of value-added products (some of which will be produced by farmer organisations) on the other.
11. **Sesame sector is possibly heading towards a bust in the coming months.** The sesame sector might be heading towards a bust in the coming months (November 2018–January 2019), which might provide an opportunity for a “reset” of the market alongside certain changes. The immediately obvious need for action when a bust occurs provides an opportunity for changing the status quo. Intervention programmes, especially with market linkage, are likely to be quite welcome.
12. **Exporters are highly focused on Asia.** The export sector is currently highly focused on the Asian market and is characterised by a form of short-term thinking (stakeholders used the term “hit and run”) which is not easily compatible with the long-term, quality-oriented and somewhat picky European market.
13. **Exporters will need preparation before going to Europe.** We reckon that most exporters whom we interviewed still need a fair bit of preparation before they can sustainably (and profitably) export to Europe. Certification (HACCP, ISO 22000), training in business culture, marketing and business planning are needed.
14. **Trade promotion is strongly required to increase awareness of Ethiopia as a source of mung, soya and value-added products.** Ethiopia is not currently known as a producer of mung beans, soya beans, sesame oil and tahini. This issue requires trade promotion and awareness raising in Europe.

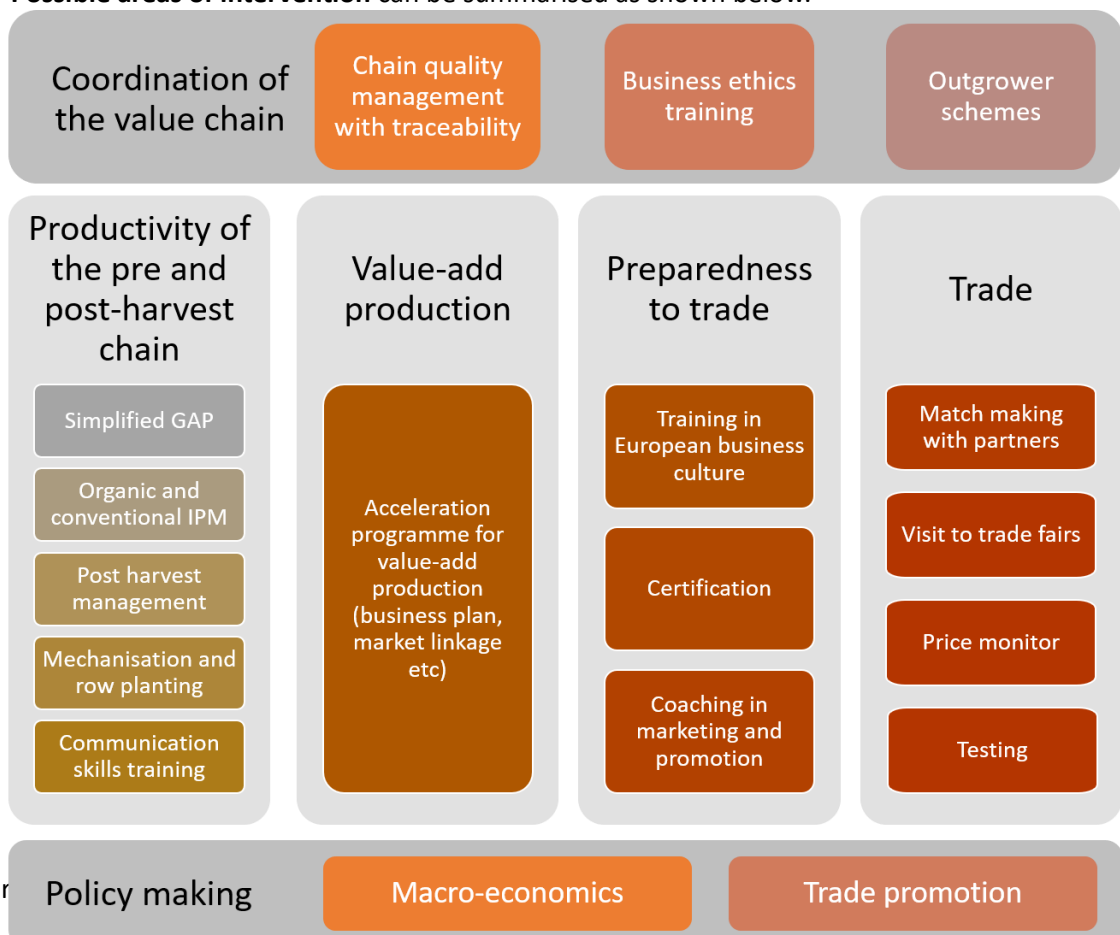
Opportunities

15. **Exporting to Europe is an aspiration.** Exporters have a positive attitude towards the EU and consider it an aspiration.
16. **There is a good demand for the chosen products in Europe.** For all five products, a clear demand could be identified from the available data. In addition and where possible, this situation was confirmed directly by importers from Europe. Some of the products can clearly differentiate themselves on the market.
17. **High profit margins exist for value-added products.** Especially in the context of joint ventures with European partners, high profit margins can be achieved both for sesame oil and for tahini, especially if organic.
18. **Organic sesame is profitable if traded through exporting farmers.** Ethiopia, unlike other African contenders, can deliver organic sesame because it has the corresponding certification. Currently, the demand for organic sesame far outweighs the supply.

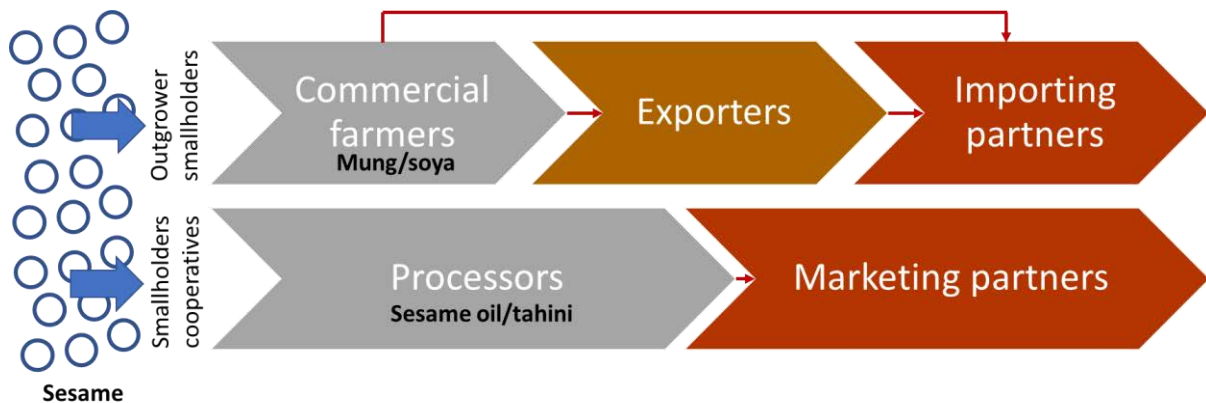
19. **Market requirements are largely known.** Although the remaining exporters are knowledgeable in market requirements and some have had experiences with the EU through raw materials, this fact is much less true for value-added products.
20. **Joint ventures in processing or trading can solve a number of issues.** There is an opportunity for joint ventures, especially in the sesame trade and value-added products; success cases in Myanmar exist.
21. **Mung and soya beans constitute excellent rotational crops for sesame.** Rotational crops can counteract the nutritional depletion of fields and contribute to an improvement of yields.
22. **For the selected commodities, our analysis of the demand indicates a clear opportunity for Ethiopia in replacing current suppliers to the European Union.** The main reasons are:
 - The quality of Humara-type sesame from Ethiopia is a benchmark for the sesame sector; Ethiopia is already a large producer and exporter, imports into Europe are very healthy.
 - Ethiopia is able to provide organic sesame, which is a growth sector in Europe.
 - Ethiopia is demonstrably GMO-free in soya beans, for which a market exists in Europe that is currently serviced from countries with greater GMO risks.
 - Mung beans from Ethiopia have been reported to be good for sprouting, a growth market in Europe; organic mung beans are difficult to obtain in Europe and are of particular interest for sprouting.
 - Sesame oil and tahini consumption are growing in Europe; Ethiopia is ideal for social marketing as a traditional source of sesame, alongside its smallholder presence and fascinating local culture that can be exploited in branding. In addition, the Humara type of sesame has an exceptional taste profile for tahini.

Interventions

23. **For any successful intervention, some fundamental areas need to be addressed,** such as access to FOREX and the related problem of a disconnect from market prices, certification, linkage to European partners, trade promotion and a review of ECX.
24. **Possible areas of intervention** can be summarised as shown below.



25. The main recommended partners for an intervention are shown below. At the current stage, we believe that a mixed strategy of intervention is the best, where support is provided to exporting farmers and processors of value-added products.



This report is based on existing literature, knowledge gathered through experience and project work by national as well as European experts, and interviews with stakeholders. It also draws on material from three large stakeholder events held in two Ethiopian cities (Addis Ababa and Gondar). These events contributed in particular to the identification of issues, opportunities, possible solutions and partners in the value chains under consideration. This report was elaborated under the guidance of Ms D.A. Braak and Mr M. Hulst from CBI. It is the result of a collaboration between Syntesa Partners & Associates, with their lead consultant Dr Heiner Lehr, and Shayashone Trading PLC as the Ethiopian partner led by Mr Yared Sertse.

Section 3

Identification of products with growth potential and a competitive position

Summary

This section details the results from an initial analysis of 23 pulses and oilseeds in Ethiopia, as well as detailed results from a first mission arranged with key Ethiopian stakeholders. Both phases, the initial analysis and the first mission, led to the final selection of promising products with a focus on the European market.

A desk analysis of 23 products (raw materials and processed materials) was conducted to identify the oilseeds, pulses and value-added products with the highest potential on the EU market. The assessment was broken down into four main criteria: production capacity, export capacity of Ethiopia, trends on the EU market and market demand in the EU. From this first assessment, seven products were selected (sesame seeds, kidney beans, chickpeas, mung beans, niger seeds, niger oil and sesame oil).

Afterwards, a first mission to Ethiopia was conducted through in-depth interviews with stakeholders in the exporting sector. From this interactive event and the desk assessment, the following products were selected as the final promising products on which to focus this study:

- sesame (organic and conventional);
- organic mung beans;
- conventional soya beans;
- sesame oil;
- tahini.

The main findings derived from the first mission in Ethiopia can be described as follows:

- very little focus on exports to the European Union;
- exports focused on the Asian market;
- lack of understanding of quality and safe production;
- lack of understanding of the EU market;
- general short-term attitude (agricultural goods are exported against minimum standards and as soon as possible);
- professional exporters aspiring to the European market for its long-term nature, price premium and orientation towards quality;
- limited value-added production.

3.1 The Ethiopian market for oilseeds and pulses

Ethiopia is one of the centres of biodiversity for several oilseeds (sesame seed, niger seed, mustard seed, pumpkin seed, sunflower seed, rape seed, castor seed and groundnuts) which can be considered speciality, high-value seeds on the international market. Oilseeds are the second-largest export commodity from Ethiopia and sesame seed is the main oilseed export product (Ayana 2015a).

Within Ethiopian agriculture, oilseeds are the most important export crop in terms of volume and are almost on par with coffee in terms of export value (NABC and FME-CWM 2015).

The growth and improvement of the oilseeds sector can substantially contribute to the economic development at the national, regional and family level. This fact has been recognised by the Ethiopian government, which is enhancing the oilseeds sector by investment incentives such as duty and tax income exemptions from 2 to 8 years for foreign investments (Wijnands, Biersteker, and Van Loo 2009).

The Ethiopian oilseeds sector has several strengths¹ (Wijnands, Biersteker, and Van Loo 2009):

1. large diversity of high-value oilseed crops;
2. globally significant production of sesame seed, linseed and noug (niger seed);
3. high-quality sesame seed for a wide range of high-value applications;
4. production capable of being doubled;
5. entrepreneurship and an ambitious oilseeds exporters association;
6. available land and labour;
7. attractive investment package from the government.

By contrast, weaknesses exist as well:

1. lack of sufficient international market orientation;
2. high transaction costs due to the large number of chain actors;
3. weak contract discipline;
4. weak supply of farm production technologies, inputs, credit and storage facilities;
5. most oilseed crushing and refining plants below European quality standards.

The highest potential for the Ethiopian oilseeds sector concerns the following oilseeds: sesame seed, safflower seed, linseed, noug (niger seed) and castor beans. These crops are discussed below. Sesame seed is by far the most important oilseed crop exported from Ethiopia, while Ethiopia is also a major global producer of linseed. These seeds are discussed more extensively in (Wijnands, Biersteker, and Van Loo 2009).

Most other oilseed crops (groundnuts, cottonseed, and so on) grown in Ethiopia are almost entirely used domestically. Reliable figures of domestic use are not available. The oilseed crushing and refining industry produces for the domestic market. According to information provided verbally by the Ministry of Trade, Ethiopia has a large deficit in vegetable oils.

Oilseeds play a significant role in the lives of the Ethiopian agrarian community and the stakeholders in the national Ethiopian economy. Over recent years, sesame seed has increasingly taken up a significant share in the oilseeds sector and has become the most relevant commodity. At the same time, there is renewed interest from Europe for linseed and niger seed (NABC and FME-CWM 2015).

Furthermore, pulses in Ethiopia are very important for the domestic market and increasingly relevant for export incomes as well. The cultivation of pulses is carried out mainly by peasant farmers. Currently, the country exports a large quantity of pulses to the international market.

¹ Although the cited source is about a decade old, the findings were confirmed during the missions to Ethiopia.

Ethiopia is among the world's top 10 producers of pulses. Different varieties of pulses are being farmed, such as faba beans (horse beans), haricot beans, chickpeas, mung beans, lupines, lentils, dry peas and vetches (Yayo Negasi 2016). The primary producers of pulses are smallholders with small and dispersed plots under rain-fed conditions (NABC and FME-CWM 2015).

Pulses play a critical role in agricultural production as a driver of economic growth and food security. As pulses constitute approximately 13% of the cultivated land and account for approximately 10% of the agricultural value addition, they are critical to smallholder livelihoods in Ethiopia. Pulses contribute to smallholder income as a higher-value crop than cereals and to diet (especially for peri-urban and rural consumers) as a cost-effective source of protein which accounts for approximately 15 per cent of protein intake. Moreover, pulses offer benefits for natural soil maintenance via nitrogen fixation, which improves the yields of cereals through crop rotation and which can also result in savings for smallholder farmers from reduced fertiliser use by a maximum of 60% (NABC and FME-CWM 2015; Yirga and Rashid 2010; Yayo Negasi 2016).

Pulses can have an income benefit for smallholders, both in terms of diversification and because they yield a higher gross margin than cereals. As pulses are generally more profitable than cereals, they give smallholders an economic incentive to increase pulse production (Yirga and Rashid 2010). Pulses also have a positive impact on the trade balance and contribute to the country's foreign exchange reserves (NABC and FME-CWM 2015).

According to (Yirga and Rashid 2010), the pulse sub-sector has a huge potential to contribute to sustained economic development. Despite the country's potential and sustained development efforts to get the sub-sector moving, the competitiveness of the pulse sub-sector and hence its continued contribution to economic development is threatened by low farm productivity, an inefficient marketing system and an inconsistent supply that does not meet export quality.

Recently, various policy initiatives have been undertaken to increase the competitiveness of smallholder farmers on the domestic and export market. These initiatives of the government seek to promote technologies for improved pulse production with high-yielding varieties, the adoption of recommended fertiliser application rates and crop protection practices, and financing incentives to enhance the competitiveness of the pulse export trade.

These farm-level efforts have to a large extent fallen short of achieving the key goal to increase smallholder productivity, maintain steady and high-quality production, and ensure consistency in export volumes, primarily due to the lack of inputs and effective agencies to implement a cross-sectoral vision (NABC and FME-CWM 2015).

3.2 Initial selection of promising products

CBI assigned 23 products that were analysed with respect to 4 criteria and 11 sub-criteria from data made available by international databases on production (FAOSTAT) and trade (COMTRADE, ITC, CBI), reports and documents made available by CBI or other sources; for details on the research and the ranking methodology, see [Appendix I](#).

Given that the level of processing to international norms is limited in Ethiopia, we have mainly analysed raw materials and lightly processed materials such as oils and flours. We have conducted a detailed analysis of the products shown in Table 1.

As a market, we have chosen the EU, without detailing the specific countries of interest at this stage; for each product, the main importing countries within the EU were identified. Products for which there is no evidence of exports to the EU have been discarded as not marketable at this stage. Based on this discarding stage, 19 products remained as products with opportunities for this study.

Table 1 Scope of analysis within the oilseeds and pulses sector

Type	Product
Oilseeds	Sesame seeds, Niger seeds, Linseeds, Soya beans, Pumpkin seeds, Hemp seeds, Safflower seeds, Mustard seeds, Poppy seeds
Pulses	Kidney beans, Chickpeas, Mung beans, Lentils, Broad beans, Dried leguminous vegetables
Oils and flours	Niger oil, Sesame oil, Linseed oil (crude and other than crude), Safflower oil, Mustard oil, Soybean oil, Mustard flour and meal/prepared mustard, Soybean flours and meals

As usual, the availability of trustworthy data was an issue in this analysis. In some cases, extrapolations had to be used in order to compare the different products. We would also have liked to include more indicators, in particular on gender and social contributions of the sectors, but there were no data available.

Based on the preliminary analysis and the ranking methodology described above, we have prioritised the list of products, while we also made a preliminary identification of those pulses and oilseeds that offer the best opportunities for this project over the next three to five years. The complete list ordered by total points is shown in Figure 2 and Table 3.

The above ranking warrants a few comments:

Sesame is the highest-ranked product

Perhaps unsurprisingly, sesame seeds were ranked the most interesting product. As the seventh-largest exporter worldwide, Ethiopia is a well-known source of sesame seeds. Other sources are generally developing countries such as Tanzania, Myanmar and India.

Particularly for sesame, important markets in Europe include non-traditional foods such as tahini, hummus and halva, the bakery/confectionary segment and convenience products such as snacks. Niche segments such as organic, health foods and gourmet are interesting markets to expand in the EU.

Of interest as well is the fact that sesame is also sought after as oil – especially organic and/or socially responsible – and oilcake, so it has multiple uses.

Raw materials before processed goods

Perhaps unsurprisingly, raw materials obtained many more points in general compared to processed goods. The main reason for this result is the lack of production and export capacity in Ethiopia, not necessarily a lack of demand in the EU.

Although the methodology is sound and robust, this deficit pushes Ethiopia away from the desirable direction of value-added products. Even though interviews during missions have shown that value-added production is not very extensive, most traders cited this goal as their strategic direction. It can be concluded that they would be very keen on learning about possible interventions by CBI and retaining the most interesting of them.

The highest-ranked oil, niger oil, is a rather interesting product because it is widely available in Ethiopia as the main cooking oil. Although it is considered a nutraceutical, it only ranks 13th due to the low production and export capacity.

Oilseeds and pulses both of interest

The analysis shows that oilseeds and pulses are of comparable interest. As can be seen below, oilseeds and pulses have a similar ranking both in total and in average points according to the methodology used, whereas oils and flours clearly have a lower rank.

Table 2 Total ranking of product categories

Type	Avg. points
1- Oilseeds	39
2- Pulses	44
3- Oils and flours	26

Among the top 10 products for the European market according to the methodology described in Section 10, seven are pulses and three are oilseeds. Among the top 5 products, three are pulses and two are oilseeds.

On the basis of the observations in the section above, we initially selected the five top-ranked products and their derivatives. This selection yielded the following list of products.

Top 5 oilseeds and pulses:

1. sesame seeds (Rank #1, average annual export volume 528 m\$);
2. kidney beans (Rank #2, average annual export volume 143 m\$);
3. chickpeas (Rank #3, average annual export volume 41 m\$);
4. mung beans (Rank #4, average annual export volume 5 m\$);
5. niger seeds (Rank #5, average annual export volume 18 m\$).

Top 2 value-added products:

1. niger oil (Rank #13);
2. sesame oil (Rank #14).

The first five products listed are the top 5 products using the ranking methodology employed here; they also represent some of the largest export goods from Ethiopia.

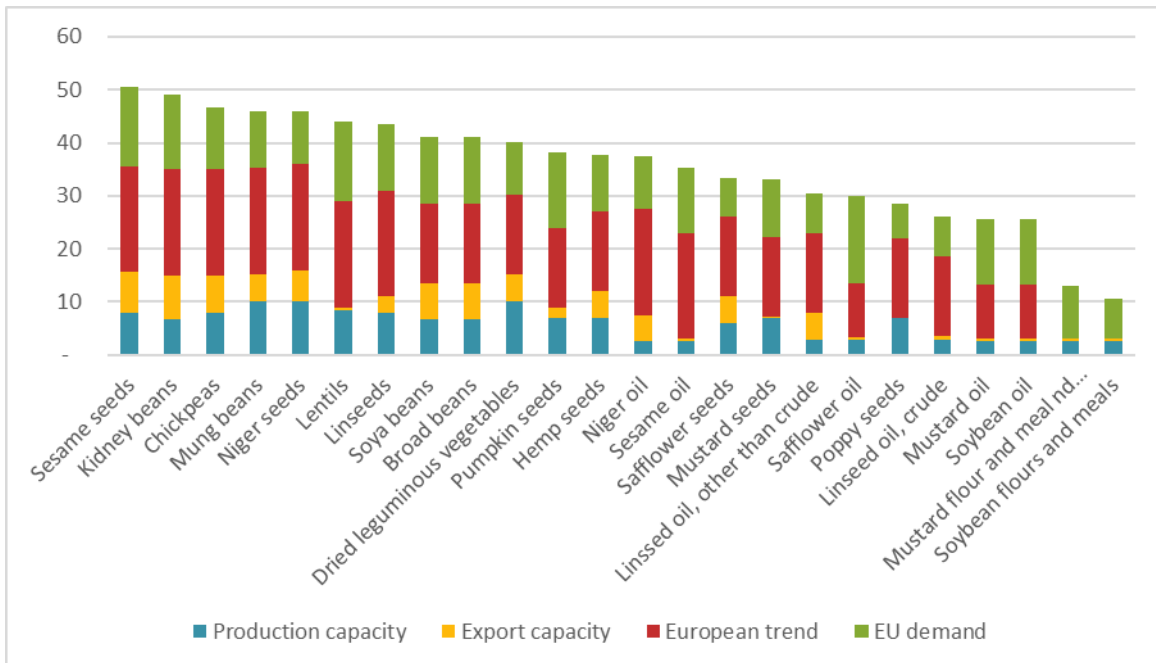


Figure 2 Twenty-three products ranked by current and future demand from the EU, as well as production and export capacity in Ethiopia

Based on the view that developing countries need to move beyond trade in merely agricultural raw materials for sustained development, it was concluded that one should not completely forgo value-added products. For this reason, we also included two oils, in particular for niche markets:

- “luxury” sesame oil with social marketing (and potentially Organic certification);

- niger oil as a “superfood” on the nutraceutical market.

Table 3 Products (EU market), ranked according to the criteria 1= production capacity, 2= export capacity, 3= trend opportunities on the European market and 4= current and past European demand, and grouped by type

Product	1	2	3	4	TOTAL
Oilseeds					
Sesame seeds	8	8	20	15	51
Niger seeds	10	6	20	10	46
Linseeds	8	3	20	13	43
Soya beans	7	7	15	13	41
Pumpkin seeds	7	2	15	14	38
Hemp seeds	7	5	15	11	38
Safflower seeds	6	5	15	7	33
Mustard seeds	7	0	15	11	33
Poppy seeds	7	-	15	7	29
Pulses					
Kidney beans	7	8	20	14	49
Chickpeas	8	7	20	12	47
Mung beans	10	5	20	11	46
Lentils	8	1	20	15	44
Broad beans	7	7	15	12	41
Dried leguminous vegetables	10	5	15	10	40
Oils and flours					
Niger oil	3	5	20	10	38
Sesame oil	3	0	20	12	35
Linseed oil, other than crude	3	5	15	7	30
Safflower oil	3	0	10	17	30
Linseed oil, crude	3	1	15	7	26
Mustard oil	3	1	10	13	26
Soybean oil	3	1	10	13	26
Mustard flour and meal/prepared mustard	3	1	-	10	13
Soybean flours and meals	3	1	-	7	11

3.3 Further product selection with inputs from Ethiopia

After the initial assessment, a mission in Ethiopia was arranged where 19 in-depth interviews were held in the space of five days in addition to a full day together with stakeholders, mainly from the exporting sector. For the detailed list of in-depth interviews, see [Appendix III](#).

The interviews – especially those with sector associations – revealed that there is very little focus on exports of any oilseed or pulse to the European Union. Trade data reveal that there is a certain level of oilseeds and pulses exports to the EU (ca 30 m€/annum), but it is not very large.

Most exporters and their sector associations are focused on the Asian market, with China, India and Pakistan being the main business partners.

Expert exporters going out of business

Given the economics of exports of agricultural raw materials (see Section 4.2), many traditional exporters of agricultural materials went out of business in the last four to five years or were replaced by import-export businesses focused on imports. Most of these organisations lack an understanding of food safety and quality control, and invest little in their agricultural value chains.

The general attitude is that of short-termism, where agricultural goods are exported against minimum standards² and as soon as possible. Meeting the strict European requirements on food safety and quality does not interest these businesses.

Little evidence of value-added production

We found few examples of value-added production beyond simple cleaning, the exception being a few foreign-owned companies or joint ventures with foreign capital. Ethiopian law requires such companies to produce value-added products. These companies mostly do basic value addition, however, such as cleaning or light roasting.

In addition, we were able to interview one producer of oil and one of tahini, neither of which export to the European Union.

Some differences between interview information and trade databases

Other than for sesame, we were able to meet only one small exporter of niger seeds to Europe. No producers of niger oil were available for interview and we could find no evidence of exports of niger oil to the European Union or elsewhere.

In the cases of chickpeas and kidney beans, exports mainly targeted the Asian market, in particular India, Pakistan and China.

Chickpeas come in two varieties: the lighter *kabuli* and the yellowish *desi*. In the European Union, *desi* is not consumed. However, in Ethiopia, it is the main variety produced for national consumption (e.g. in *shiro*, a stew that is commonly eaten by Ethiopians) or for exports to India and Pakistan. In addition, although *kabuli* are grown, the size is generally too small for the European market.

We were able to speak with one grower of a variety – patented in Ethiopia – that is called the ACOS or Mexican variety. This variety in general matches the European requirements. However, it (i) has significantly lower yields than local varieties and (ii) requires more work, although it (iii) sells at roughly the same price. For farmers, growing the ACOS variety is difficult. Unless the sector can increase the yield significantly (for example, through mechanisation), there is little interest from farmers to grow this variety. That the seeds are patented instead of being freely available on the market does not help.

The only exporter of these seeds to Europe that we could meet was ACOS itself, which had not been able to secure supply and is currently not exporting to the EU, however.

A similar situation presents itself for kidney beans. The variety grown is too small for European buyers. Again, ACOS was the only company that we could meet which exports larger-size kidney beans in smaller amounts to Europe. All other exporters agreed that they could not meet the size requirement of 100–120 beans per 100 g.

Limited understanding of market opportunities

We found some evidence of a lack of understanding of EU market opportunities. Especially regarding prices and value-added products, not all exporters were too clear on the details.

Very good attitude towards exporting to Europe

In general, the attitude towards the European market is very positive; the European market remains an inspiration for Ethiopian exporters, in particular because of the following reasons:

- exports to the EU helping to increase the quality of production;
- price premium over international market prices;
- long-lasting relationships;
- market for value-added products, as Asian markets prefer raw materials.

² With basic cleaning.

Changed selection of most promising products after stakeholder input

The above issues and opportunities were discussed as well during a larger stakeholder event in Addis Ababa on 16 August 2019 with 15 representatives, mainly from the export sector. The challenges and opportunities in the five aforementioned commodities were listed and the general picture discussed. Participants were also asked to identify other oilseeds and pulses which presented opportunities for the Ethiopian export sector in their opinion. The participants identified safflower, groundnuts (although they claimed that Ethiopian production cannot cope with aflatoxins at the moment) and soya beans for oilseeds. For pulses, white pea bean was identified.

After brainstorming and deliberating with the stakeholders, the following products emerged as having the greatest potential:

- organic sesame (rotational crop with organic mung beans);
- organic mung beans (rotational crop with organic sesame);
- conventional sesame (rotational crop with soya beans);
- soya beans (rotational crop with conventional sesame);
- sesame oil;
- tahini.

3.3.1 Sesame seeds

Sesame seeds are a major export article from Ethiopia. The country exports both conventional and organic sesame. For the latter, the European demand by far outweighs the supply, mostly due to cross-contaminations when farmers treat rotational crops (sorghum, for example) with agro-chemicals.

Currently, sesame prices are not competitive; for an in-depth discussion, see Section 4.2.2.

3.3.2 Mung beans

Mung beans are a new and emerging crop in Ethiopia with good results. According to hearsay evidence from exporters, the Ethiopian government has published information that the demand by far exceeds the production. We were told in the interviews that mung beans grown in Ethiopia have a good quality and are apt for sprouting; they can command a price premium on the international market.

According to the information that we received, mung beans also fetch good prices for farmers; however, Ethiopians do not currently consume mung beans.

3.3.3 Soya beans

Another interesting crop is soya beans. The European demand is extremely high, with the major exporters to the EU being the USA and Brazil. In Ethiopia, soya beans are already grown in quite some quantities. Moreover, Ethiopia is guaranteed GMO-free³, which could provide Ethiopian soya with a competitive edge in certain supply chains; guaranteed GMO-free soya beans command a premium of 0–150 \$/Mt, according to a soya bean importer whom we interviewed.

According to information received from Ethiopian farmers, growing soya organically is very difficult, so it would not be a good rotational crop for organic sesame. However, it is a good rotational crop for conventional sesame.

³ There seems to be no presence of GMO varieties in Ethiopia.

3.3.4 Sesame oil

The European market for sesame oil is a growth market; in particular when paired with ethnic or social marketing, margins are very high. Production capacity also exists in Ethiopia; the missing link here is market information and market connection. The by-product of oil production, sesame cake, is also a highly valued product with a great internal demand.

3.3.5 Tahini

For tahini, the situation is a little less clear-cut. About 50% of the global market is located in the USA; nonetheless, what little information is available suggests that tahini is on the rise, driven not only by Middle Eastern consumers but also by the integration of hummus, falafel and other tahini-based products into European consumption patterns. However, the difference between tahini and sesame oil is that the latter generates two highly valued products (oil and cake), whereas tahini only creates one product that is mostly purchased in “bulk” by re-packers or food processors. There is currently only one company in Ethiopia exporting tahini, mainly to the Middle East in 10-kg buckets.

Section 4

Characterisation of selected products

Summary

Based on the previous stage of the identification of interesting products from Ethiopia for the European market, this section aims to provide a detailed analysis of the selected products in terms of the characterisation, economics, production and export capacity of Ethiopia, the trends on the European market and the main requirements in the EU.

The three selected crops on which to focus this section and the following sections of the report are:

- sesame (organic and conventional);
- organic mung beans;
- conventional soya beans.

It will also analyse the following value-added products:

- sesame oil;
- tahini.

A literature research was conducted in order to analyse the aforementioned aspects for each of the products listed. Information provided by stakeholders during the missions to Ethiopia was also used for this stage.

A double market distortion in Ethiopia has negatively influenced the export sector for oilseeds and pulses. As a result, the exports of pulses and oilseeds (including sesame) have not been profitable for 3–5 years and many specialist agricultural exporters have gone out of business.

Oilseeds production in Ethiopia is mainly characterised as follows:

- labour-intensive;
- low-input;
- rain-fed;
- 90% of farmers being smallholders;
- average land ownership of 2 ha;
- smallholders with little access to agronomic knowledge, very low levels of mechanisation and a lack of quality farm inputs;
- high potential to increase production (only 20% of available agricultural land is used);
- potential for doubling productivity (through higher input levels);
- oilseed production close to organic standards.

By contrast, the production of pulses is characterised by the following aspects:

- using 13% of cultivated land;
- responsible for approximately 10% of the agricultural value addition;
- vital to smallholder livelihoods in Ethiopia;
- sizeable subset of large, commercial exporting farmers with ample knowledge and influence.

There are several opportunities on the European market for suppliers from developing countries. The principal trends influencing the European oilseed market are:

- health and wellness;
- convenience and innovative products;
- ethnic cuisines;
- sustainability and certification (environment, food safety and nutrition);
- non-genetically modified products (GMO-free products).

As for oilseeds, there are opportunities for pulses on the European market, especially because pulses are a very valuable protein substitute for meat-based products. In addition to social, nutritional and environment trends, there are marketing opportunities for GMO-free and Organic certification of pulses such as soya beans.

The export capacity of Ethiopia can be briefly summarised as follows:

- Average exports from the oilseeds and pulses sector to the EU reached 32 m€ (2013–2017).
- Oilseeds are the second-most important export product.
- The most-exported oilseeds are sesame seeds, which make up over 90% of global oilseed exports (432 m\$ in 2016).
- China is the main market destination for sesame.
- Sesame oil exports are very limited.
- Pulses are the third-largest export commodity.
- Ethiopia leads the African exports of pulses.
- Mung beans exports accounted for 15 m\$ in 2016.
- Exports of mung beans to Europe are limited.
- Soya beans exports are decreasing (13% per annum).
- Export value of soya beans reached 175 m\$ in 2015.

4.1 Characterisation of selected products

4.1.1 Sesame seeds

Sesame seeds (*Sesamum indicum*) are grown primarily for their oil content. They contain up to 25% protein (Bedigian et al. 1985: Cited in Ashri 1998) and are rich in amino acids, especially methionine, cysteine, arginine and leucine. They contain little vitamin A but are rich in vitamin E (Ayana 2015a).

There are different types and qualities of sesame seeds. White seeds are a white-to-golden colour and receive a higher market price than mixed seeds, which range from yellow to dark brown. White seeds are used primarily in natural or hulled form because of their aesthetic value, whereas mixed seeds are generally crushed into oil. Black sesame seeds, which are an excellent source of magnesium and calcium, serve very well for non-dairy milk powders and other premium applications. The black seed is smaller than the white seed (CBI Ministry of Foreign Affairs 2017).

Ethiopia has two high-quality sesame varieties that are well known: Humara and Wollega. The whitish Humara type is in good demand on the world market and is also used as a benchmark for grading on the international market. By contrast, the Wollega type is mixed (red/brownish colour) and has a high oil content (Ayana 2015b). Black sesame seeds are not grown in Ethiopia. The characteristics of these main export varieties are listed in Table 4.

Table 4 Different types of sesame seed grown in Ethiopia. Source: (Ayana 2015a)

Varieties	Name	Colour	Characteristics	Application
t-85	Humara	White	<i>Pro</i> White seed colour Large and uniform Sweet taste and aroma <i>Con</i> High shattering losses (50%) Intensive management	Bakery Tahini Confectionary
Mehado-80	Wollega	Red/brown	<i>Pro</i> High oil content <i>Con</i> Smaller seed Lower price	Oil production

The Humara variety is appreciated worldwide for its aroma and sweet taste. Its seeds are white, quite large and fairly uniform in size. This quality makes them very suitable for bakery products as well as for tahini production. The major competitive advantage of the red Wollega type is its high oil content (48–56%), which is why this type is mainly used for sesame oil.

The purchase price of sesame for export is largely determined by the evenness of colour, taste, moisture and purity. These purchasing criteria are important for traders. Hulled seeds and bleached hulled seeds have a higher market value than untreated seeds.

Sesame is used in a wide range of applications (Wijnands et al. 2007). The most important ones are:

- edible oil. The oil is odourless with a distinctive nutty sweet flavour. Roasted sesame seed resists rancidity due to the antioxidants formed during seed roasting. Sesame oil is especially important in the Far Eastern cuisine, mainly Japan and China;
- confectionery, biscuit and bakery industry as a topping or ingredient;
- tahini industry;
- halva industry;
- sesame flour and sesame seed sprouts;
- pharmaceutical ingredients (Ayana 2015a).

In the Middle East, sesame seeds are used as a topping on breads and baked goods as well as in ethnic dishes such as tahini paste, halva and oil (Wijnands, Biersteker, and Van Loo 2009).

In Europe, sesame seeds are primarily used as a topping on bakery products (e.g. bread, bagels, hamburger buns and confectionery). Restaurants and natural food consumers purchase sesame seeds for use in ethnic dishes. Sesame seeds can also be used in snacks and crackers, often in the form of “sesame sticks” (CBI Ministry of Foreign Affairs 2016a). People also purchase sesame seeds for use in food products from various cuisines such as tahini and hummus, sushi and Eastern desserts (CBI Ministry of Foreign Affairs 2017).

The overall European usage of both sesame seed and derived products is increasing. Target markets are Germany for bakery and certified chains; Greece for high-quality seed used in tahini and halva; the UK for bakery, snacks and ethnic food; France for cosmetics; the Netherlands for food ingredients, snacks and onward distribution; Poland for snacks and tahini; and all countries for oil, with Scandinavia as a market especially for certified chains (CBI Ministry of Foreign Affairs 2018).

4.1.2 Mung beans

The mung bean or moong bean (*Vigna radiata*) is a green-coloured bean, light yellow on the inside. Other colours such as brown or purple exist as well. Mung beans are also known as green grams, and urad beans as black grams (CBI Ministry of Foreign Affairs 2016b). The protein content of mung beans is around 27.5 g/100 g dry weight; its carbohydrate content is 62 g/100 g dry weight (Mubarak 2005).

Mung beans are widely grown in south and south-east Asia (over 80% are produced in south Asia). The short duration needed to grow it as well as its wide adaptability to many cropping systems and rotations, together with its easy digestibility, has spread mung bean cultivation all over the world.

Special features for mung beans include its high yield, good nutritional value, earliness and drought-resistant features, reasonable cost of production and ability to stimulate striga without being parasitised (Degefa 2016).

Mung beans thrive best in well-drained sandy loamy soils and are not tolerant to wet, poorly drained soils. The crop can grow in ranges of altitudes from 5 m to 1,600 m above sea level. Early maturing varieties will do well in the drier parts of arid and semi-arid soils, while the later maturing varieties will require rainfall above 250 mm per season. Heavy rainfall results in increased vegetative growth

with reduced pod setting and development. Mung beans are drought-tolerant and will give reasonable yields with as little as 650 mm of annual rainfall.

According to (Boere et al. 2017), mung beans require relatively little input and mature early. They are well suited for organic production.

Mung beans are typically graded by colour, grain size and purity. All three parameters are weighed roughly the same to determine the “quality” (and price) of the product (M. Ahmed, Siraj, and Mohammed 2017).

Although mung bean can be used for food and fodder, its consumption varies from place to place (Degefa 2016). In India, China and south-east Asia, mung beans are extensively used as an ingredient in both savoury and sweet dishes. Whole beans, hulled beans, paste and flour are used in the preparation of meals, soups, pancakes, noodles, desserts, beverages, ice cream, and as filling for pastry and dumplings. In Europe, mung beans are often sprouted for consumption (CBI Ministry of Foreign Affairs 2016b).

Parts of mung bean such as pods and sprouts are eaten as vegetables, being a source of vitamins and minerals. Additionally, due to its palatable taste and nutritional quality, mung bean has been used as an iron-rich wholefood source for baby food. Mung bean seeds and soup are also a rich source of alkaloids, coumarin and phytosterols, which promote the physiological metabolism of human beings and animals (Degefa 2016).

Anti-nutritional factors limit the food applications of mung bean. As a result, common techniques such as the de-hulling of the seeds before milling have been used to overcome this problem. Germination and cooking processes cause significant decreases in fat, carbohydrate fractions, anti-nutritional factors and total ash content in mung beans (Mubarak 2005).

4.1.3 Soya beans

Soya beans or soybeans have an exceptional nutritional and functional food profile. Soya-based foods are considered to be nutritious and healthy based on their nutrient composition (UNCTAD 2016). Soya beans are highly digestible and are comparable to animal protein in terms of protein quality (UNCTAD 2016). Protein contents range from 14.3% to 38% (Messina 1999). Soya foods are also a good source of mineral components such as magnesium, potassium, sodium, calcium, sulphur and phosphorus. Mineral contents can vary widely due to the type of soil and the growing conditions for the soybean (UNCTAD 2016). Soybeans are quite high in fat (7.7% to 47%) compared with other beans (Messina 1999).

There are over 200 soybean varieties (UNCTAD 2016). Varieties of soybeans differ in maturity as much as corn varieties do, but they are classified by a different maturity system (Cornell CALS). Aside from maturity and yield, variety selection on resistance or tolerance to disease, other speciality soybeans include varieties with low saturated fat, high oleic acid, high isoflavone, high stearate, high sucrose or high protein.

Some types of speciality soybeans are listed below (UNCTAD 2016):

- **low (reduced) linolenic soybeans** have half the linolenic acid level of regular soybeans. This feature reduces the need for hydrogenation, a process used in transforming vegetable oils to margarine which results in the production of unhealthy trans-fatty acids.
- **natto beans** are small-seeded soybeans used for the fermented soya foods of the same name. These beans have a thin seed coat, a clear hilum and high carbohydrate levels.
- **non-genetically modified soybeans** are varieties that have not been genetically improved through bioengineering technology.

- **tofu soybeans** have a large seed size and high protein levels; they are primarily used for tofu and soymilk production.
- **triple-null lipooxygenase soybeans** are characterised by the absence of the three enzymes that produce off-flavours usually found in conventional soybeans. They can be used for edible soya products, such as tofu and soymilk.

Soybeans are grown principally for their meal (primary product), while oil is secondary. The attractiveness of soybean meal as a feed ingredient is due to its high protein quality and nutritional value compared to alternatives.

The utilisation possibilities for soybeans can be divided into two groups (UNCTAD 2016).

- 1. Utilisation of the whole seed:** This group includes non-fermented and fermented soya-based foods.
 - Nonfermented soya foods: soymilk, tofu and variants, bean curd, soya sprouts, soya film, yuba, vegetable soybean, edamame and roasted soybeans.
 - Fermented oriental soya foods: miso, tempeh, shoyo, soya sauce, soy sauce and natto.
- 2. Products based on the fraction of the soya bean into oil and meal.**
 - Oil fraction: soybean oil, lecithin extracted from crude soybean oil and used as a natural emulsifier, lubricant, animal feed, pharmaceuticals, paints and other industrial applications.
 - Meal fraction: soybean meal used as animal feedstuff, defatted soybean flours and grits, protein concentrates, extrusion-textured soybean protein, soya fibre (okara, soya bran and soya isolate fibre), textured soya protein and biodiesel.

4.1.4 Sesame oil

Sesame oil is an edible oil obtained from sesame seeds through cold-pressing and filtering. It can be produced from black (hulled) or white (de-hulled) sesame seeds (CBI Ministry of Foreign Affairs 2016c).

Sesame oil is produced using cold-press methods or by extraction with solvents (Elkhaleefa and Shigidi 2015a). Cold-pressed sesame oil is mostly available at health shops in Europe and North America. As cold-pressed sesame oil is pale yellow, it differs from the golden colour of the Indian sesame oil or the dark brown oil from east Asia (derived from roasted or toasted sesame seeds). It can furthermore be refined and/or toasted. Conventional refined sesame oil is clear, light yellow and odourless (CBI Ministry of Foreign Affairs 2016c).

Sesame oil has desirable physiological effects, including antioxidant activity, and the potential to lower blood pressure and serum lipids. Ethiopian sesame oil contains a significant amount of fatty acids, mainly linoleic (39.3–59%) and oleic (32.7–53.9%) acid, as well as palmitic (9–11%) and stearic (5–10%) acid (Geremew et al. 2012).

Sesame oil is unique among vegetable oils due to the presence of natural antioxidants such as sesamin and sesamol as well as their derivatives (sesamol and sesaminol), which provide a significantly long shelf life and stable characteristics. It is commonly used for cooking in south-east Asian cuisines and it is also used as a gourmet oil (e.g. in salad dressings). Moreover, it is also used in cosmetics as well as in other health and wellness products. In Europe, sesame oil is marketed as a high-quality oil (CBI Ministry of Foreign Affairs 2016c; Ayana 2015a).

4.1.5 Tahini

Tahini is a paste made of roasted, hulled sesame seeds (USDA Foreign Agricultural Service 2016) and is rich in protein (Wijnands, Biersteker, and Van Loo 2009). It has a delicate roasted sesame flavour without the sweetness that is common to many nuts and seed butter, as well as a consistency similar to peanut butter (Mordor Intelligence 2018a).

Tahini has two types, to wit hulled and de-hulled (Market Research Future 2016).

Ordinary tahini is produced by hulling sesame seeds, roasting them and crushing them through several machines that resemble a traditional millstone, until a buttery consistency is attained. At that point, the temperature is kept low while the pace is slowed and controlled to preserve the sesame's inherent nutritional values.

By contrast, fully organic tahini uses sesame that is crushed in a cold-press process, without hulling and without roasting. Organic tahini is made without soaking the sesame seeds in salt and without chemical additives. Salt is used primarily to speed up production and shorten the hulling process (Laniado 2012).

In traditional products such as tahini, sesame seeds cannot be substituted (and are not substitutable) by any other oilseed, since they are the main ingredient in the product's formulation (CBI Ministry of Foreign Affairs 2016d).

Tahini is primarily used as a sauce and dip due to its nutty taste. The use of brown and black sesame seeds results in a fine paste that influences the consumption of tahini as a dip (Technavio 2017). In addition, the dip can be used as a non-dairy alternative for butter and margarine (AGREGARE 2018).

Tahini is a key ingredient in the Middle Eastern cuisine; for example, in dishes such as baba ghanoush and hummus, as well as in sweet dishes such as halva (AGREGARE 2018). Halva is a sweet made of 50% tahini, boiled sugar or honey and some other ingredients (Wijnands, Biersteker, and Van Loo 2009).

Tahini is also used as salad dressing. Recipes around the world include tahini in frosting, cookies and baking goods (AGREGARE 2018), as well as for falafel pittas and other ethnic dishes (Market Research Future 2016).

4.2 Economics of oilseeds and pulses exports

4.2.1 General economics of agricultural exports

According to information received from individual exporters as well as trade associations and confirmed by the Ministry of Trade, exports of oilseeds and pulses including sesame have not been profitable for the last three to five years and many specialist agricultural exporters have gone out of business, including a large number that previously exported to the European Union.

The reason for this situation is a double market distortion.

1. Land fragmentation and lack of good practices lead to high production prices

About 90% of farmers in Ethiopia are smallholders with very fragmented lands. Average land ownership is about 2 ha, according to information provided by stakeholders. The land fragmentation

is a direct consequence of inheritance customs and laws that share property among all children in equal parts^{4,5}.

Most of the time, smallholders have no access to other sources of income and therefore need to sustain their living off that small piece of land. Smallholders are also plagued by the typical issues that smallholders in many developing countries have: little access to agronomic knowledge, very low levels of mechanisation and a lack of access to quality farm inputs. This situation leads to generally quite low yields.

The combination of low yields, small farms and the need to sustain a family quite necessarily results in high prices (Berhane Hailemariam 2018). Given that the value chain often involves at least one or two layers of traders, prices are driven up even further.

2. Need to access FOREX disconnects internal from international market prices

In well-functioning market economies, the force to drive up the prices of agricultural goods would meet with the dampening effect of demand, further attenuated by the international market. However, in Ethiopia, a second market-distorting force is at work.

The National Bank of Ethiopia has established strict controls on trading in its currency (the *birr*); in other words, it is not convertible on the international finance market. This policy means that importers need access to international convertible currencies, such as the US dollar, in order to make purchases. Given the large trade deficit of Ethiopia and the fact that the only FOREX generator apart from tourism is low-value exports, mainly of agricultural goods, exports are used primarily as a source of international convertible currency.

Since imports are quite profitable, with margins of 20–30% and over in total size, professional import-export organisations have sprung up which accept losses of up to 30% in exports just to access FOREX and fuel their core business – imports – where these losses are recovered by the high margins.

⁴ By contrast, land ownership in Catalonia is traditionally transferred to the first-born only, whereas the second- and third-born used to go into military or church careers, respectively. This policy has helped to avoid farmland fragmentation and to sustain relatively high levels of income for the agricultural sector.

⁵ In principle, women and men inherit equal parts; however, the constitution recognises legal pluralism. Under Sharia law, women may inherit less than an equal share (M. I. Ahmed 2018).

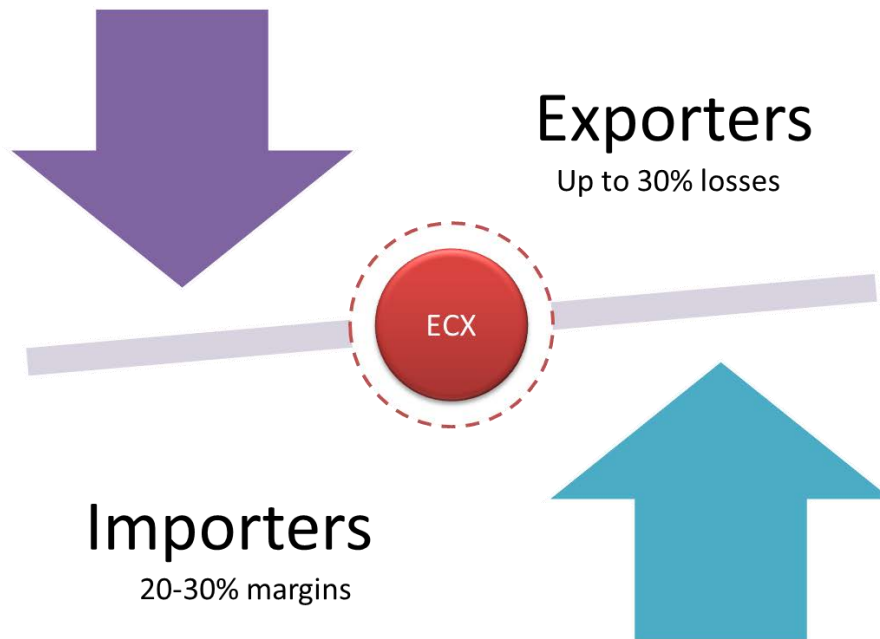


Figure 3 The vicious cycle of Ethiopian agricultural exports

This trend constitutes a vicious cycle, as shown in Figure 3: since importers sustain losses on exports, their margin on imports has to be high, driving up prices in Ethiopia for agriculturally important goods such as machinery and inputs. Because these prices are high, the level of mechanisation and input use are low, reducing the yield of farmers. This fact again drives up the price for commodities, which importers/exporters are willing to sustain because they need FOREX to fund imports.

The above is exemplified quite clearly by the sesame market in Ethiopia. As can be seen in Figure 6 (and Figure 5, broken down by sesame type) for the volume traded, there is a large seasonality in purchases, with a peak in December (red bars). However, while prices were relatively constant over Aug 2016–Jul 2017, they started to rise strongly in early August 2017 (blue line).

Since the outlook of exports was sluggish, the Ethiopian Central Bank subsequently devalued the birr by 15% with respect to the US dollar on 10 October 2017; see Figure 4.



Figure 4 Exchange rate of ETB to USD. Source: XE.com

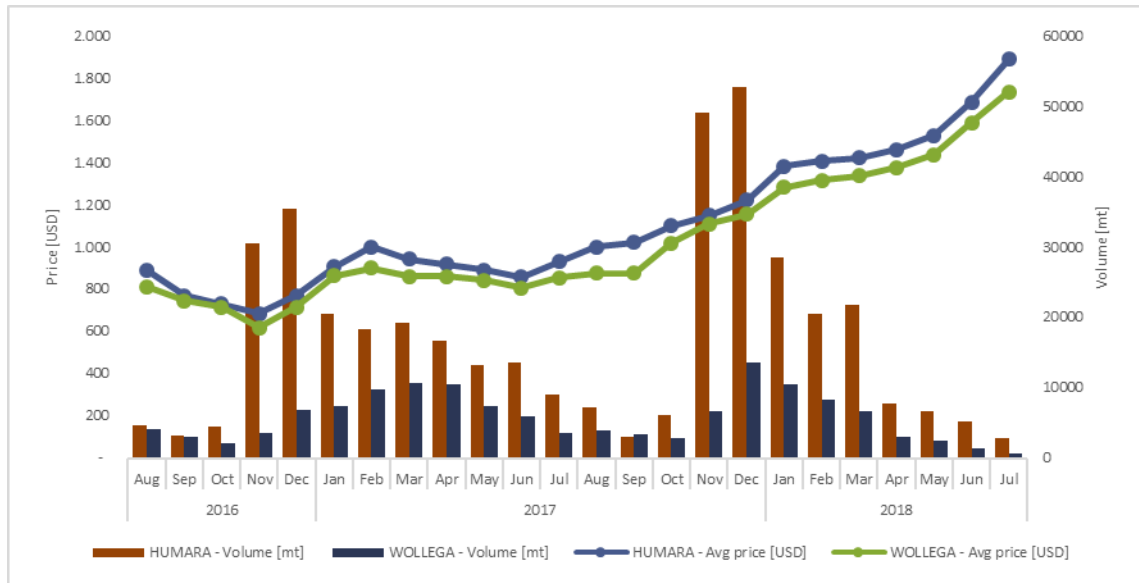


Figure 6 Prices and volumes traded on ECX by sesame type. Each type is traded in five grades (1,2,3,4 and ungraded). Prices vary somewhat per grade. Prices are in US dollar using the current exchange rate (August 2018)

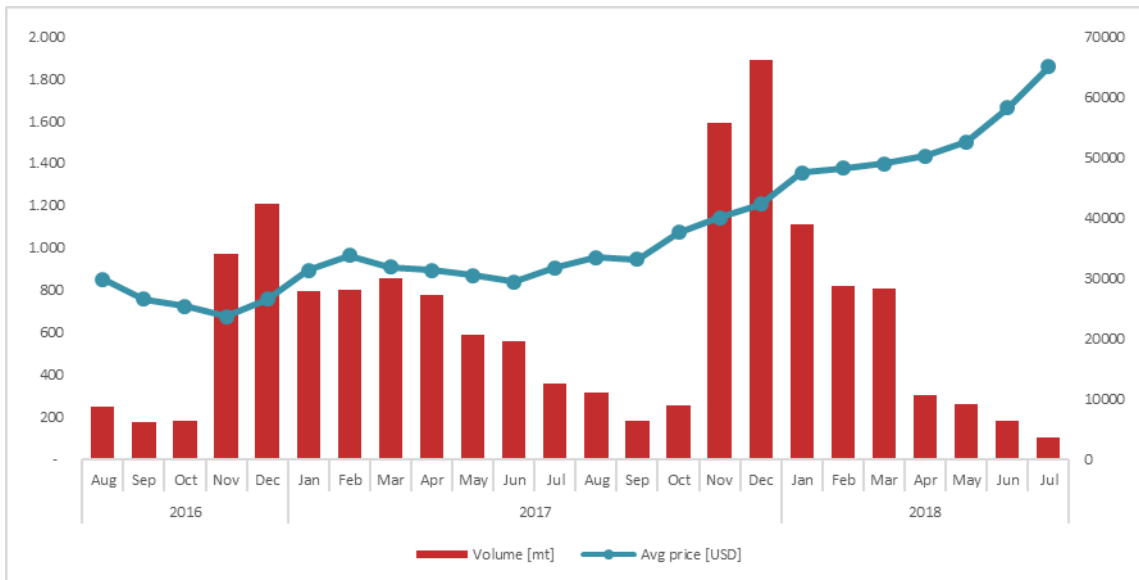


Figure 5 Sesame trade on ECX, August 2016–July 2018, in value (USD) and in volume (Mt). For a better comparison with current international market prices, Ethiopian birr (ETB) are converted into US dollars at the current exchange rate (August 2018)

As a result, import-export organisations needed more exports to fund the same amount of imports in USD and started to purchase massively. In December 2017, 50% more sesame was purchased than during the same month in 2016.

Most likely, this extremely high increase is also due to a hedging strategy by exporters and to some extent by increased exports. As prices had already started to go up in August 2017, they were not about to go down with the increased demand. This double influence of the currency devaluation and the hedging led to a further increase in prices, even until July 2018. Given the tremendous demand especially in December 2016–January 2017 (60,000 Mt more volume than in the same period a year prior), the market is most likely somewhat depleted of sesame, leading to a continual price increase.

ECX prices are now far above international market prices and even those of the European Union. The average import price to the EU was 1,420 \$/Mt in 2017, whereas sesame is currently traded on ECX at above 1,800 \$/Mt. According to information from exporters, sesame to China is currently traded anywhere between 900–1,200 \$/Mt.

As a consequence, the total volume traded has basically collapsed. Volumes in July 2018 are 70% lower than in the same month of 2017.

The next months will tell, but it is very likely that we are looking at a typical “boom and bust” cycle (well known on the international financial markets).

The installation of the Ethiopia Commodity Exchange (ECX) has not solved this situation. Commodity exchanges are typically a physical marketplace where goods are sold under controlled conditions; they often are meant to guarantee fair prices to farmers and sometimes also serve food security purposes, where the State acts as a purchaser. In some countries, these organisations interfere in pricing, but not so in Ethiopia. While we generally believe that the lack of meddling in the market is welcome, the fact that prices for sesame are spiralling out of control certainly warrants consideration by the government, for example.

This vicious cycle has several very important consequences for the value chains in Ethiopian agricultural exports:

- Import-export organisations focus on imports, because their profits are generated here. They are not specialist agricultural exporters with a deep understanding of the goods, market requirements and underlying principles such as safety and quality.
- Import-export organisations consider exports to be a cost and not a profit centre. As a result, there is very little interest in investing in agricultural value chains. This disinterest not only leads to a lower quality and safety of exports from Ethiopia, but it also explains why there is so little evidence of value addition. Most goods are sold under minimum standards and are often merely cleaned (not even graded).
- The vicious cycle has also led to a certain short-termism; goods are purchased as-is and sold as quickly as possible to the first party willing to buy them, often with more emphasis on the speed of the transaction than on optimising the revenue made from the export.
- Farmers, their organisations and traders can obtain artificially high prices for their goods (compared to international market prices), independent of product quality or safety. With these artificially high prices, the farmers are able to sustain their livelihoods relatively well.
- Given that their basic income is guaranteed and that the market does not incentivise quality or safety, there is little appetite to (i) innovate in agronomic practices, (ii) improve the quality and safety of the goods produced, (iii) grow products that are demanded on high-value markets.

This situation presents unfavourable conditions for exports to the quality- and safety-conscious European Union. Given the lack of quality and safety control, the lack of a quality infrastructure⁶ and the short-termism paired with the complacency of the production sector, most exporters today do not have the materials, the processes and the required certifications in order to export to Europe. The “hit and run” attitude is fundamentally opposed to the long-term, conscious market in the European Union.

⁶ Such as certified laboratories, standards and efficient export control, as well as metrology services.

4.2.2 Economics of sesame exports

A number of sesame grades are traded on ECX, the two most important ones being the “Humara” (also called “Humera”) and the “Wollega” (also called “Wellega”) type. The whitish Humara type – an international benchmark for sesame quality – is used for the food and bakery industry (as well as for tahini), whereas the reddish Wollega type is used for oil (since it has a higher oil content).

Prices and demand, as shown in Figure 5, vary between the types. On average, the Wollega type is about 7–9% cheaper than the Humara type and the demand is about 40% that of the Humara type.

ECX links the type to the geographical origin rather than the species. This process creates some confusion on the marketplace and limits the flexibility of farmers in reacting to changes in market demand. However, both types are subject to the same market dynamics, although the Humara type is much more affected by them than the Wollega type; see also Figure 5.

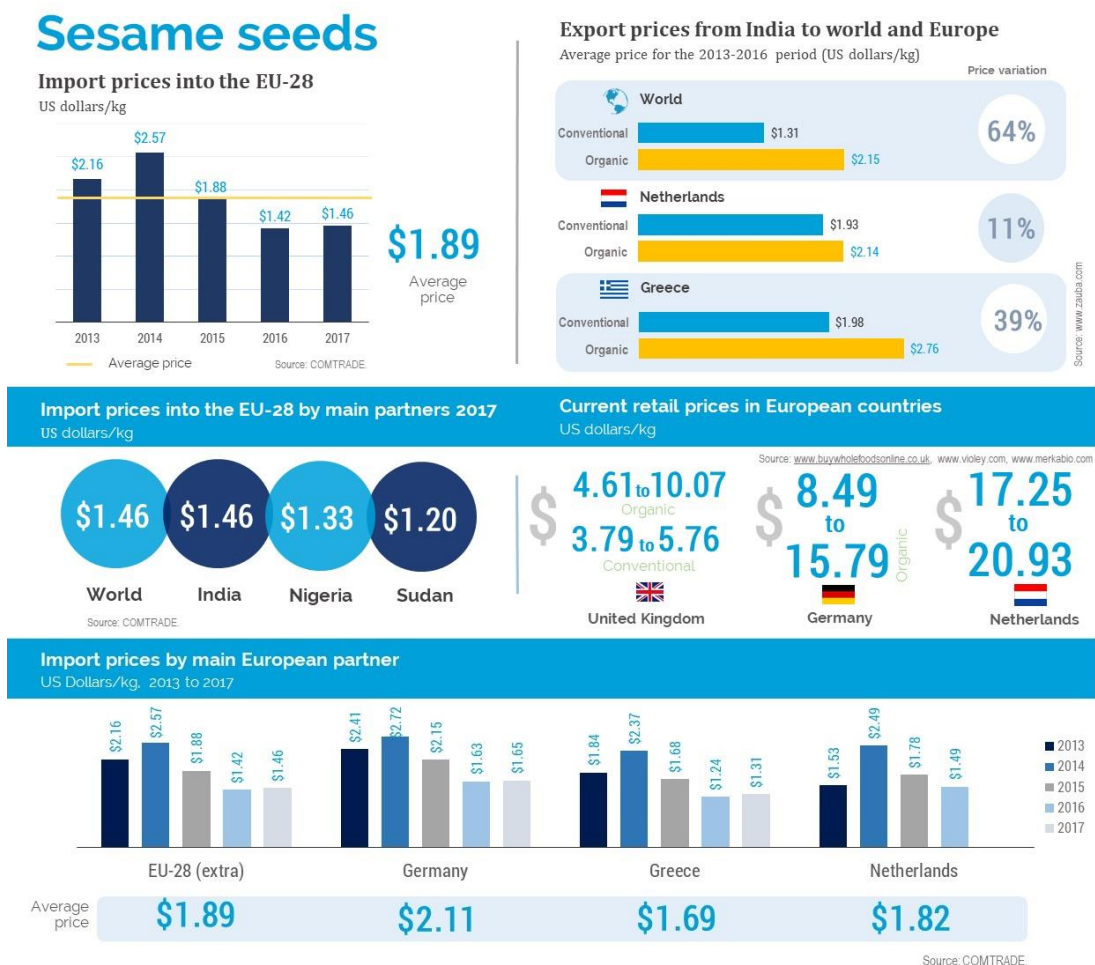


Figure 7 Infographic: economics of sesame exports to the European Union

Given the developments that we have described above, we believe there to be strong indicators that the sesame export market in Ethiopia is collapsing. Continuous high prices, about 30% over European import prices and as much as 100% over Chinese import prices, seem to have brought the trade (through ECX) almost to a standstill in the months June to July 2018. We see a great risk of a price bubble that either has already exploded or is exploding. Unless the underlying issues of low productivity and restricted access to FOREX are solved quickly, it will probably come to a “restructuring” of the sesame export market. Farmers betting on the return of their harvest at the end of 2018 might face dear consequences.

A number of producers (farmers and farmer organisations) that were consulted have already pointed towards other crops such as soya and mung beans or wheat for better returns; these crops are good on their own, but they also serve as excellent rotational crops due to the nitrogen fixation effect of pulses. Nevertheless, the social consequences of the sesame export market imploding will be felt.

Figure 7 summarises the economics of the sesame trade from import to retail in the main European countries purchasing sesame from Ethiopia.

As can again be seen, the current sesame prices at ECX are significantly higher than the 2017 import prices, approximating the five-year average of 1,890 \$/Mt. As such, they are significantly higher than the prices from competitors Nigeria and Sudan, and on par with Indian and world average prices.

In terms of price differences within Europe, Germany shows the highest average price at 2,110 \$/Mt and Greece the lowest at 1,620 \$/Mt. Prices decreased significantly in the last three years across all European destinations.

In order to estimate the premium for organic sesame, only the prices from India were available. This premium varies according to the destination in Europe, ranging from 11% in the Netherlands to 39% in Greece. The world average premium (from India) was significantly higher at 64%.

As expected, the margin for retail prices is very high. Shown in Figure 7 are sample prices taken from the main purchasing countries of sesame seeds from Ethiopia. As prices vary according to the size and type of consumer packaging, they are not necessarily directly comparable. They should be understood rather as a range of possible end-consumer prices. The margins on importer prices vary between 160% and 1,300%. Premiums for organic vary between 20–80%, with an average of 50% in the very limited sample.

Clearly, the trade bottleneck are the margins of exporters from Ethiopia whose prices are not competitive, especially compared to the quality delivered.

After import, i.e. on the European side, the margins are healthy if not excellent. This fact means that the international market itself continues to be there; only the connection to it from Ethiopia is problematic.

Growing and exporting organic sesame is certainly a profitable venture, given that Ethiopian sesame is grown in near-organic conditions anyway. If the problem of cross-contamination can be solved, this product brings in a healthy 20% extra profits, which should cover the certification cost very quickly.

Joint ventures with European sesame processors/dealers seem very interesting from a margin perspective. Assuming that retailers mark up prices by 100% (i.e. double the wholesale price), this situation would still leave very comfortable margins between 30% and 600% on the current import price. Joint ventures could provide European traders with sustainable access to the raw material at better than global market prices and Ethiopian producers with better margins, as well as sustainable access to finances and markets.

4.2.3 Economics of organic mung bean exports

Figure 8 summarises the economics of mung bean exports. Ethiopia currently exports mung beans to the European Union at world average price. Prices were quite stable in the observation period of 2013–2017. Although this price is competitive with the main suppliers to Europe (China and Australia), it is significantly higher than the larger supplier Myanmar. Myanmar is the largest producer of mung beans worldwide; it sold its mung beans at a 9% lower cost to the European Union in 2017. Despite the high volumes of mung beans exported from Myanmar, as well as its huge market opportunities in Europe, Japan and other high-premium markets, many mung bean farmers have an inconsistent production quality (ICCO cooperation 2018). In the 2013-14 fiscal year, Myanmar started exporting mung beans to Europe, but it could not meet quality standards, resulting in a miniscule

5,000 tonnes of exported beans (10,000 tonnes for 2014-15) (Nyein 2016). In this context, government and regional-local organisations started working together to help farmers grow higher-quality mung beans (Nyein 2016; ICCO cooperation 2018).

In the five-year price averages from India to the EU, one can appreciate that the premium for organic is quite high at over 60%. Italy seems to have no premium, which is very likely due to all mung beans being imported as organic.

Within Europe, we find some variation between the import prices of the main importers from Ethiopia. Prices to the UK and the Netherlands are very close to the EU five-year average, whereas Germany seems to pay consistently less – 17% on average.

Retail margins are again excellent. Against the 2017 import price, retailers charge between 250% and 470% for mung beans. Organic approximately commands a 40% premium (based on the very limited sample), somewhat below the differential in import prices.

In summary, organic mung beans seem to be good business for exports to Europe. If the 60% margin from India is representative, all value chain partners have an opportunity for good profit in this value chain.

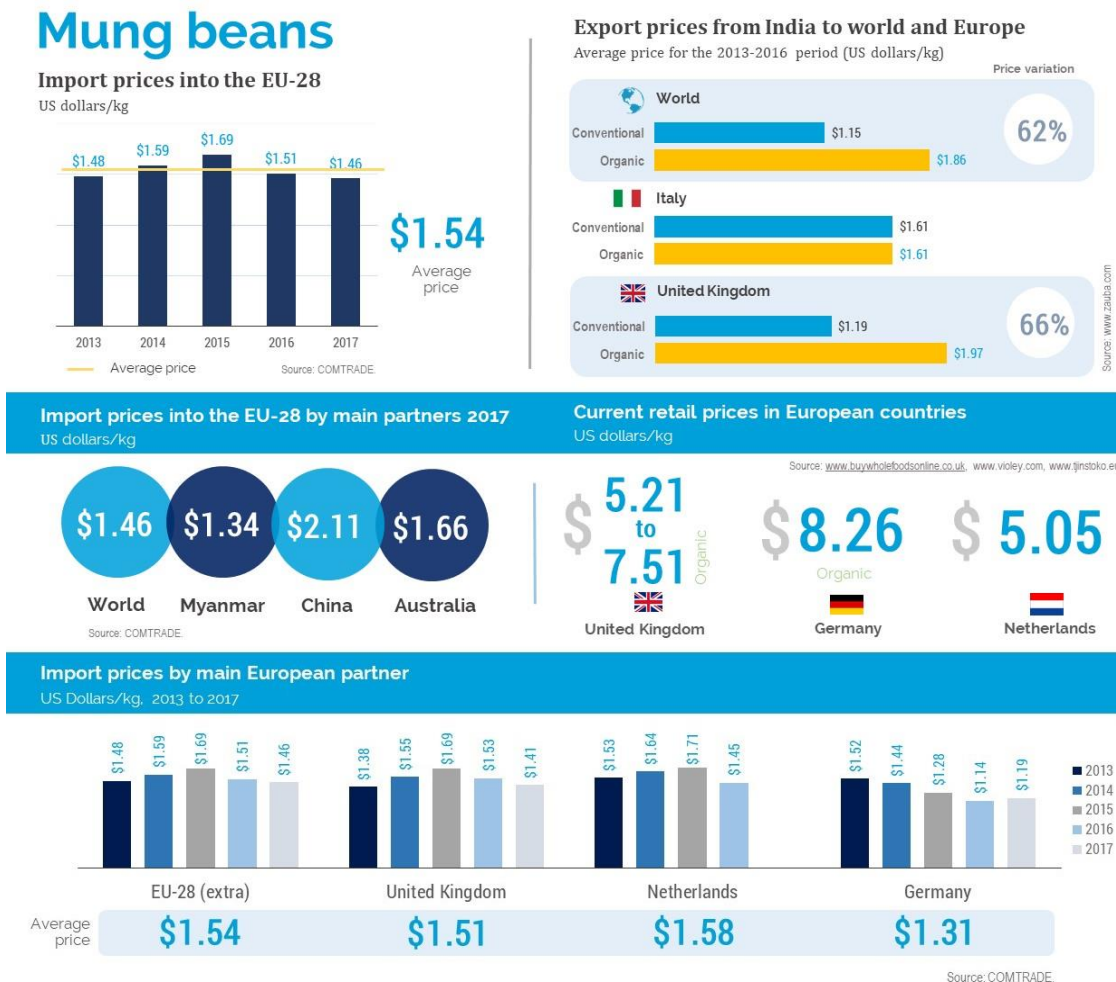


Figure 8 Infographic: economics of mung bean exports to the European Union

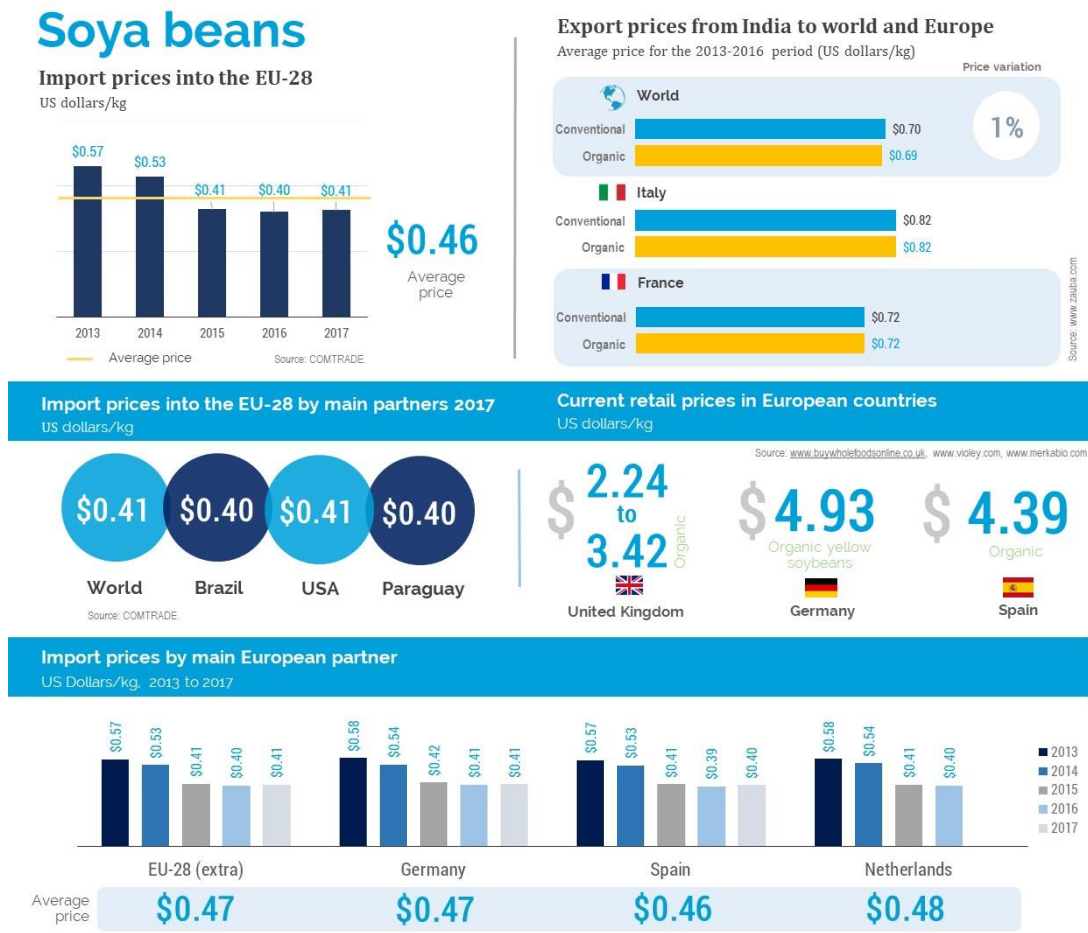


Figure 9 Infographic: economics of soya bean exports to the European Union

4.2.4 Economics of soya bean exports

Figure 9 summarises the economics of soya bean exports. Ethiopia currently exports soya beans to the European Union at average world price. Export prices went down in the observation period of 2013–2017, most likely due to better production as a result of more favourable weather conditions. This price is competitive with main suppliers Brazil, the USA and Paraguay. The lack of yield (see Section 4.3.4) in comparison with these competitors is compensated most likely by lower labour costs.

In the five-year price averages from India to the EU, one can appreciate that the premium for organic is almost non-existent⁷. As most soya beans by volume go into animal feed production, the incentive to pay for organic is probably not high; however, there is also a chance that this situation is an artefact related to the specific trade from India to the EU.

It emerged from interview data that premiums of anywhere between 0–150 \$/Mt are being paid on non-GMO. This figure is a very significant markup of 0–37%, which should be easily accessible to Ethiopian exporters, since there is no GMO soya in Ethiopia according to our information.

Within Europe, we find very little variation among the import prices of the main importers from Ethiopia, which demonstrates what a mature commodity soya is. Its world market price is determined by the Chicago futures market and those prices are basically valid for any producing country.

⁷ Ideally, another country would have been chosen as reference, since India is not a large supplier of soya beans to the EU; for consistency purposes, however, we have chosen to continue with the same reference country.

Retail margins are again excellent. Against the 2017 import price, retailers charge between 450% and 1,100% for soya beans. In retail, organic commands a premium of about 40–60% (based on the very limited sample) compared with import prices from India.

In summary, soya beans seem to be good business for exports to Europe. Prices are already competitive (despite lower yields) and there can be very nice profit margins for exporters from Ethiopia with the non-GMO premium. The geopolitical situation, in particular the trade war between China and the US, have driven the price down somewhat and some volatility is to be expected in the coming months. Growing organic soya beans is very difficult, but the conventional beans already seem to be good business while the margins for organic beans are unclear.

4.2.5 Economics of sesame oil exports

There are two basic extraction methods for sesame oil: mechanical and chemical through solvents (Warra 2011; Elkhaleefa and Shigidi 2015b). Sesame seeds have about a 50% oil content. Using modern screw presses, the residual oil in the cake is about 7%. Chemical extraction is by far the most efficient, with an extraction rate of 98–99%.

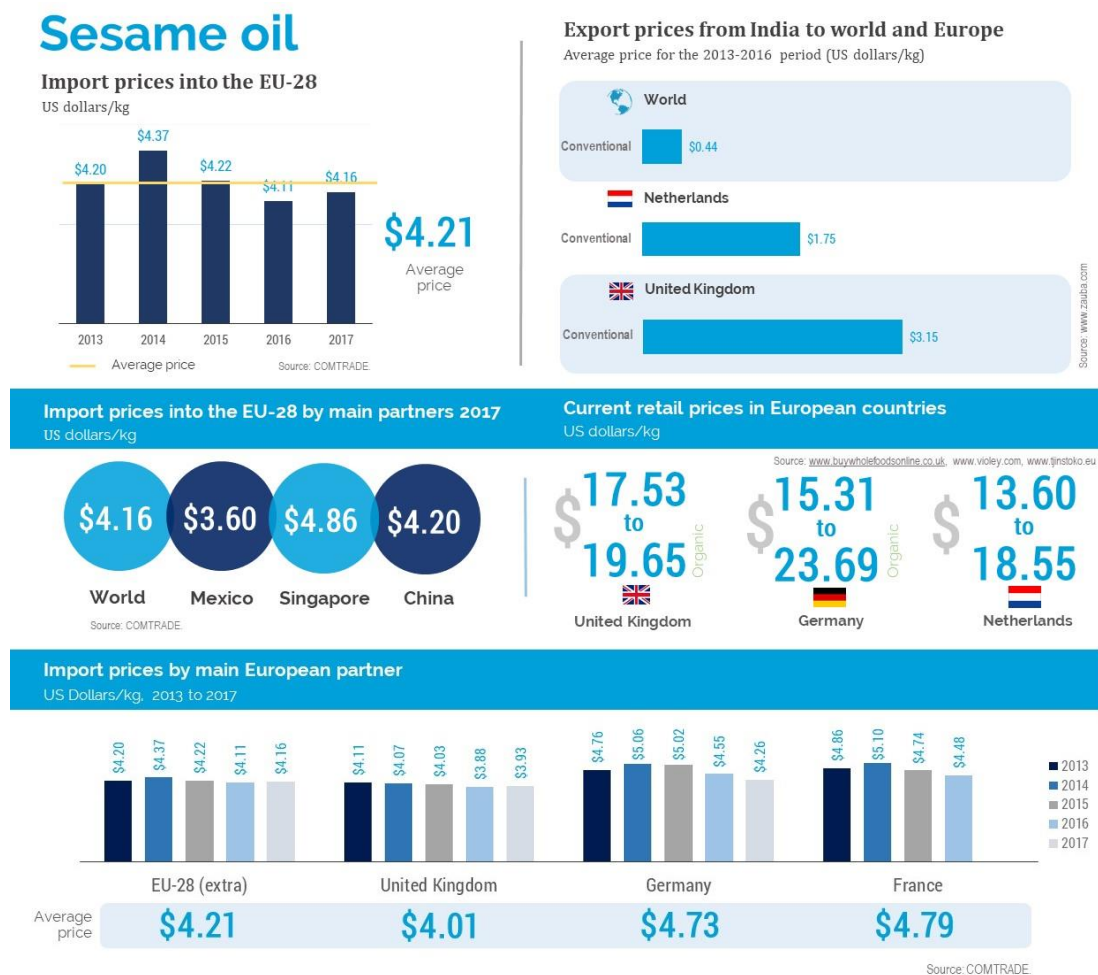


Figure 10 Infographic: economics of sesame oil exports to the European Union

Even with such high extraction rates, the current raw material prices of over 1,800 \$/Mt are too high for the average price of bulk sesame oil at about 4,200 \$/Mt. This margin will not cover processing and logistics costs, much less provide a profit. In the case of cold-pressed oil, processors can also sell the oilcake – for which there is a good market internally – to compensate the high prices somewhat. Chemical extraction seems hardly competitive at the current prices of raw materials.

Figure 10 summarises the economics of sesame oil exports. Ethiopia currently exports sesame oil to the European Union at world average price. Export prices were relatively stable in the observation period of 2013–2017. This price is competitive with main suppliers Singapore and China but significantly higher than that of Mexico.

In the five-year price averages of the trade from India to the EU and the world, one can observe the huge disparity between European and world import prices. The trade of sesame oil to the world is dominated by the trade to Mexico at a very low price. There was no export of organic sesame oil from India to the EU.

Within Europe, we find some variation between the import prices of the main importers from Ethiopia. There is a 20% difference between five-year average export prices to the United Kingdom and to France.

Retail margins are again very good. Against the 2017 import price, retailers charge between 230% and 470% for sesame oil. In retail, organic commands a premium of about 12–55% (based on the very limited sample). In earlier work, it was found that “organic” is commoditised in the luxury category and therefore does not command a significant premium (Lehr 2016a).

In a joint venture with a European company that assists with initial investment into machinery and knowledge, this business could be very profitable, even in the currently tense raw material situation.

Product	Gross Margin	Assumptions	USD/ton
Raw sesame	15.3%	Farm gate price for input	977
Hulled sesame	12.3%	ECX prices for input	1,283
Roasted sesame	10.4%	Raw sesame	1,400
Tahini	25.9%	Hulled sesame	1,560
Tahini (Domestic)	56.0%	Roasted sesame	1,600
		Tahini	2,000
		Tahini (Domestic)	3,023

Figure 11 Margins in the sesame value chain. Source: (ATA and USAID 2015)

4.2.6 Economics of tahini exports

In general, we know very little about the tahini trade. Figure 11 and Figure 12 summarise what little information we have. Unfortunately, as “tahini” is not a separate category in the Harmonised System (HS), it does not appear directly in the trade databases.

India exports to its main importers in Europe (Poland, France and Italy) at 2,840–2,950 \$/Mt, compared to a world export price of over 3,000 \$/Mt. One reason could be that tahini is a relatively new product on the European market and the demand has not yet fully materialised.

If India’s prices are taken as a point of reference for import prices, retail margins are excellent at more than 300%. Although import prices of organic tahini are not known, the premium for organic is between 120% and 550%.

Tahini from India is traded at a price far below that of sesame oil. However, since the whole grain is toasted and ground, the yield of tahini production should be more than 90% and therefore represent a good margin even at the current prices of the raw materials.

Given the tremendous markup for organic tahini, it is a very interesting product for exports to the EU, especially if marketed properly. As for sesame oil, it seems to make sense to partner with a European marketer of tahini in order to commercialise organic, socially responsible tahini from Ethiopia.



Figure 12 Infographic: economics of tahini exports to the European Union

4.3 Production capacity of Ethiopia

4.3.1 General remarks on the production capacity of oilseeds and pulses from Ethiopia

In Ethiopia, many smallholders and a limited number of large farms grow oilseeds. Oilseeds are cash crops on subsistence farms. Their production is characterised as labour-intensive, low-input and rain-fed. The potential to increase the production is huge. Only 20% of the total available agricultural land is used, mainly in the highlands, of which only 7% for oilseeds. Productivity per ha can be doubled with higher input levels including fertiliser and improved seeds. Area expansion by virgin and fertile lands offers good opportunities for organic oilseeds production. Higher production levels are required, as the Ethiopian food demand will increase by at least one third until 2020 due to population and income growth (Wijnands, Biersteker, and Van Loo 2009).

Due to the low levels of input and the use of virgin new areas, oilseed production in Ethiopia is near organic standards (Wijnands, Biersteker, and Hiel 2007). Some production of organic seeds already exists, but as there is generally no price incentive, farmers make little investment in growing organic. If they grow a rotational crop which requires pesticides, these substances are applied without hesitance; this type of cross-contamination was mentioned by stakeholders as the key issue in organic sesame.

As for oilseeds, the cultivation of pulses such as chickpeas, red kidney beans and white pea beans is common in Ethiopia. Ethiopia produces more than 400,000 tonnes of chickpea annually and is the sixth-largest producer of chickpeas in the world. The cultivation of pulses is carried out in both the highland and the lowland areas of the country, mainly by peasant farmers. Currently, the country exports a large quantity of pulses to the international market. There are also a number of factories that process pulses in the country (NABC and FME-CWM 2015).

Pulses, which constitute approximately 13% of the cultivated land and account for approximately 10% of the agricultural value addition, are vital to smallholder livelihoods in Ethiopia (NABC and FME-CWM 2015).

In general, the Ethiopian government focuses on doubling the agricultural production. The AGP is providing the regulations to reach those goals. The Ethiopian government established new

warehouses, which is a positive step towards complying with the EU regulations (NABC and FME-CWM 2015).

On the production side, the vast majority of farmers are smallholders on highly fragmented land; 2 ha is an average holding size. Smallholders in general have no training in Good Agricultural Practices, no culture of profit optimisation and likely little understanding of economics.

Commercial farmers or so-called investment farmers exist; they submit a project to the government and obtain access to land if it is approved (in Ethiopia, there is no private ownership of land, only ownership of exploitation rights; smallholders have indefinite, inheritable access rights). These farmers have holdings of 10 to 5,000 ha.

However, commercial farmers are often not more professional than smallholders; companies sometimes own farms “just in case” they need exports or as collateral for property development in the cities. There is a subset of large commercial exporting farmers with good knowledge and influence in their community.

Farmers do have access to finance, but that access through microfinance institutions, commercial and governmental banks is tedious. Most farmers prefer informal financing through pre-payment by traders.

Implementing change is not easy and stakeholders from all stages have vented a degree of frustration at the resilience of farmers to change. Although extension services exist, there was little faith in them being the right agent of change. Very likely, the most successful agents will be locally influential persons within each community, which are very difficult to identify. It would be interesting to look at the landscape approach developed for sustainable palm oil (Lehr 2016b).

The most-used strategy to resolve similar issues are outgrower schemes. In Ethiopia, these schemes have had little success because there is a lack of a contract culture. Exporters that have tried to implement outgrower schemes have negotiated contracts with individual farmers or farmer organisations, only to find their business partners defaulting on the terms later. According to stakeholders, there is little culture of sticking to the terms of agreed contracts, tremendously increasing the risk of a default for exporters as well.

Some fault can be assigned to not having found the right “package” with which to provide farmers. In some cases, for example, farmers were not offered a premium for their organic product; this situation provided no incentive to grow properly and has led to cross-contamination with pesticides when farmers grew rotational crops conventionally.

Initial trials are being conducted with insurance for farmers and exporters, which seems a good ingredient in a successful “package”.

Table 5 summarises the key aspects in terms of the production capacity of Ethiopia for the selected products (sesame seeds, mung beans, soya beans, sesame oil and tahini). Detailed information per product is described in the sections below.

Table 5 Key aspects of the Ethiopian production capacity of selected products

Aspect	Description
Sesame seeds	
Production 2013–16:	270,000 Mt per annum
Average Ethiopian yield 2014–16:	750 kg/ha (official data); stakeholder report yields <400kg/ha
Average yield of main competitors into the EU 2014–16:	434 kg/ha

Opportunities:	Potential to expand production through cultivation of additional new virgin new land; transfer of technology and input provision to increment production and yield
Soya beans	
Production 2013–16:	76,000 Mt per annum
Average Ethiopian yield 2014–16:	2,200 kg/ha
Average yield of main competitors into the EU 2014–16:	2,900
Opportunities:	Available land for cultivation; plans for doubling production by the Ethiopian government
Issues:	Difficult to grow soya beans organically
Mung beans	
Production 2012–15:	8,000 to 27,000 Mt
Yield:	400 kg/ha (no reference data of Ethiopian yield); enhanced varieties can reach 2,200 kg/ha
Main production corridors:	Eastern-Amhara, north-western Amhara and Benishangul–Gambela
Main producing region:	Amhara region, 95% of national production
Opportunities:	Opportunity for outgrower schemes under the guidance of commercial farmers
Sesame oil	
Production:	Low production level, about 20,000 tonnes per annum
Producers:	Around 1,000 small crushers at village level
Main issues:	Limited capacity of producers, difficulty to ensure adequate and steady supply of oilseeds, world market price competition, low safety and hygiene standards, investments in sesame processing hampered
Opportunities:	Business opportunity for smallholders
Tahini	
Production:	Limited production, around 20 to 30 20-ft containers per annum
Opportunities:	Organic tahini already produced in Ethiopia, possibility to increase production capacity but limited by technical, structural and quality issues

4.3.2 Sesame seeds

Sesame is produced on a large scale in Ethiopia. Although the production capacity is somewhat volatile, Ethiopia has on average produced around 270,000 Mt of sesame per annum in the years 2013–2016; see Section 11.1.8.

Stakeholders consistently reported that Ethiopian sesame has low yields. Yields have been reported by stakeholders to be less than 400 kg/ha (we heard unverified rumours that yields in some regions can go up to 2,000 kg/ha). According to FAOSTAT data shown in Figure 13, Ethiopia is about world average in yield with an average of 750 kg/ha in the period 2014–2016 (world average: 795 kg/ha). Compared to its main competitors on the European market (India, Nigeria, Sudan, Guatemala and Paraguay, which make up about 78% of EU imports), it is actually faring well with about 42% more yield. Stakeholders reported that this figure does not reflect the reality on the ground.

In any case, comparison with the five largest producers in terms of yield (Lebanon, Israel, Saudi Arabia, the former Yugoslav Republic of Macedonia and Egypt) shows the potential increase: these countries reach on average almost triple the yield of Ethiopia at 2,070 kg/ha.

According to stakeholders, reasons are to be found in:

- fragmented growth areas;
- soil depletion;
- lack of Good Agricultural Practices;
- lack of mechanisation;
- lack of irrigation;
- lack of row sowing (broadcasting is the standard method);
- lack of agri-inputs.

There is an enormous potential to expand sesame seed production in Ethiopia through the cultivation of additional virgin new land. The government is enhancing the investment in the oilseeds sector with an extended package of incentives. Through the transfer of technology and the provision of inputs, it will be attempted to increment production and yield. The availability of virgin fertile new areas which can be cultivated on a large scale, as well as cheap and abundant labour, are the key indicators of the future potential (Ayana 2015a).

If Ethiopian farmers and traders manage to prevent blending different types of the aforementioned distinct Humara or Wollega qualities, and provide adequate seed cleaning up to 99–99.5%, sales to Europe could significantly increase (Wijnands, Biersteker, and Hiel 2007).

The potential of exporting sesame seed under an organic farming label to Europe is seen as a prospect by many stakeholders in Ethiopia. Further growth of organic chains might have prospects. Some Dutch companies, such as Sellet Hulling, are already active in this field and public-private collaboration could play a role in accelerating the development of this niche market. It has been reported that virgin fertile new areas are available and can meet Organic certification standards. These new areas can be cultivated on a large scale (Wijnands, Biersteker, and Hiel 2007). Their connection to possible deforestation is unknown.

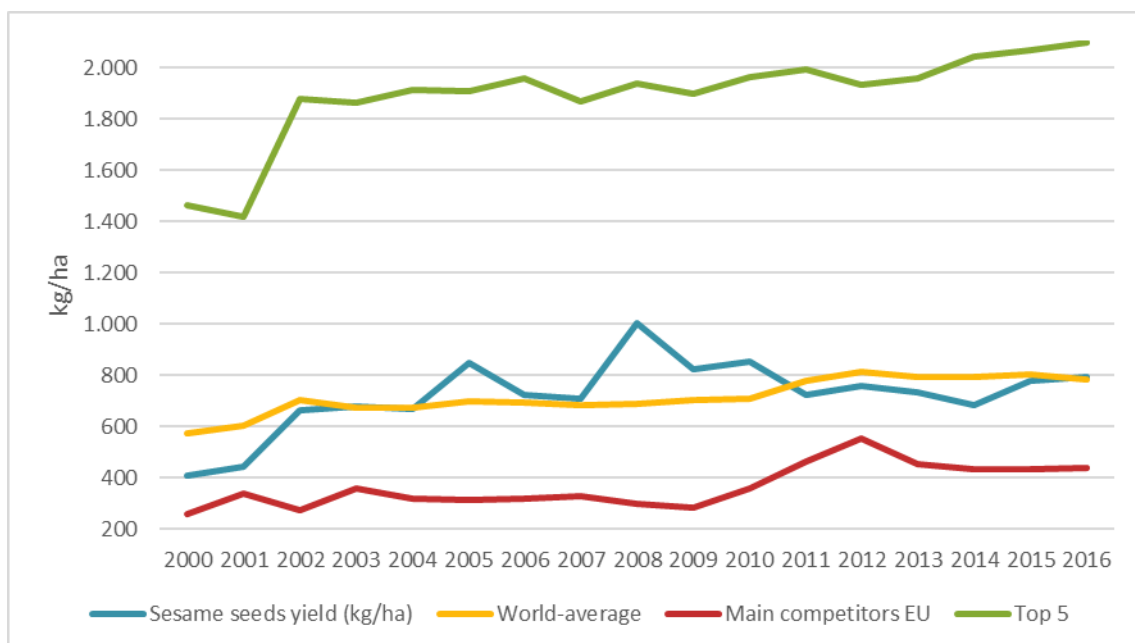


Figure 13 Yield of Ethiopian sesame production in comparison with the world average, the main competitors on the EU market (India, Nigeria, Sudan, Guatemala and Paraguay) and the five largest producers (Lebanon, Israel, Saudi Arabia, the former Yugoslav Republic of Macedonia and Egypt). Source: FAOSTAT

4.3.3 Mung beans

Mung beans are a new crop in Ethiopia. Production statistics are very recent (2012-13). Between 2012 and 2015, the production grew from 8,000 Mt to 27,000 Mt (Boere et al. 2017). Stakeholders reported that mung beans are being “hyped” as an excellent moneymaker. According to verbal reports, the government has declared that the demand by far exceeds the supply from Ethiopia.

The Amhara region, particularly eastern Amhara, is the most prominent producer of mung bean, accounting for over 95% of the national production share. However, the crop is expanding to other regions as well by commercial farmers (namely Tigray, Benishangul Gumuz, Gambela and western Amhara) as an important rotational crop alongside sesame and cotton.

There are three important production corridors for mung beans within Ethiopia: eastern Amhara, north-western Amhara and the Benishangul–Gambela corridors.

Eastern Amhara is the largest production area at this point in time. This corridor, which includes areas such as Shewarobit, Ankober and Jir, has an important strategic advantage in its proximity to the port of Djibouti. Kombolcha town, the corridor’s business hub, is located only 480 km from the port. Production mostly takes place during the *belg* season (April–June). Mung bean does not have a serious competing crop in this production belt at the moment; it is mostly grown together with teff and sorghum, which are both consumption crops, while mung bean is purely produced as a cash crop for the export.

The north-western Amhara corridor includes the fertile lands of North Gondar, which encompass areas such as Belesa, Metema and Hamusit. This corridor is traditionally a sesame, cotton and sorghum belt with a mixed type of agriculture – both smallholders and commercial farming. Mung bean and soybean production is increasing in the area partly because of favourable market prices for mung bean, but production is still low (official figures are lacking, unfortunately). Compared to the eastern Amhara corridor, this area is further from the port, but the major advantages are that it can be accessed through both the port of Djibouti and Sudan (800–900 km each). The other advantage of this corridor is the fact that it is the major production belt of Ethiopia’s other key export commodities, including sesame (60% of the national production), chickpea (40% of the national production), spices such as cumin and other beans such as faba. At the same time, this situation means that mung bean has fierce competition in this production belt from the aforementioned cash crops.

Production in the Benishangul–Gambela corridor is mostly from commercial farmers. There are over 700 commercial farmers in this corridor, growing different crops such as rice, cotton, sesame and soybean. Recently, mung bean is gaining more ground because of the favourable market and its function as a rotational crop with less input intensity. In this production area, mung bean will also have to compete with other cash crops such as sesame, soy, chickpea and cotton, although it can be used as a rotational crop alongside these products. The Benishangul–Gambela corridor has the key advantage of bulk production at a large scale. Most of the commercial farmers export directly, but they often sell to local exporters as well. Getting the required volume might not be a major barrier. A major disadvantage of the corridor is that it is located approximately 1,500 km from seaports.

There is no evidence of organic mung bean production, although it was reported by stakeholders that the first experiments of organic mung/sesame as rotational crops were being run quite successfully⁸.

Yield data for mung beans are not available on FAOSTAT. Literature has revealed that standard yields are about 400 kg/ha, whereas enhanced varieties provided by the World Vegetable Center can reach up to 2,200 kg/ha (Schafleitner et al. 2015). Data on Ethiopian yields were not available.

⁸ Information received from the Sesame Business Network.

Proper storage is an important issue in the value chain for mung beans. In a recent survey of one production area, only about half of the farmers and a quarter of traders agreed that they had access to proper storage (M. Ahmed, Siraj, and Mohammed 2017).

Another challenge in convincing farmers to grow mung bean is that it does not have a place in Ethiopian cuisine, making it a pure cash crop. Smallholder farmers in Ethiopia see that fact as an additional risk factor, as they typically eat what they cannot sell.

Perhaps the clearest opportunity here are again outgrower schemes under the guidance of commercial farmers; land availability is not an issue, not even for organic production. Certification is available in the country.

4.3.4 Soya beans

Soya beans are being grown consistently in Ethiopia with a production of 80,000-90,000 Mt in 2015-16; see Section 11.1.9. Stakeholders have reported that profit margins on soya are healthy and that it is a crop which they expect to grow in the near future. According to information from stakeholders, the government plans to double the production of soya.

Ethiopian farmers are doing a reasonable job with regard to the yield of soya beans, especially in the last years. In the period 2014-16, average Ethiopian yields were 177% higher than the world average.

However, the main competitors on the European market (Brazil, the USA, Paraguay, Canada, Ukraine and Uruguay) are very strong contenders with average yields about 32% higher than Ethiopia. For a mature and highly competitive commodity such as soya, this figure is a very significant difference and will seriously affect the competitiveness of soya bean exports from Ethiopia to the European Union.

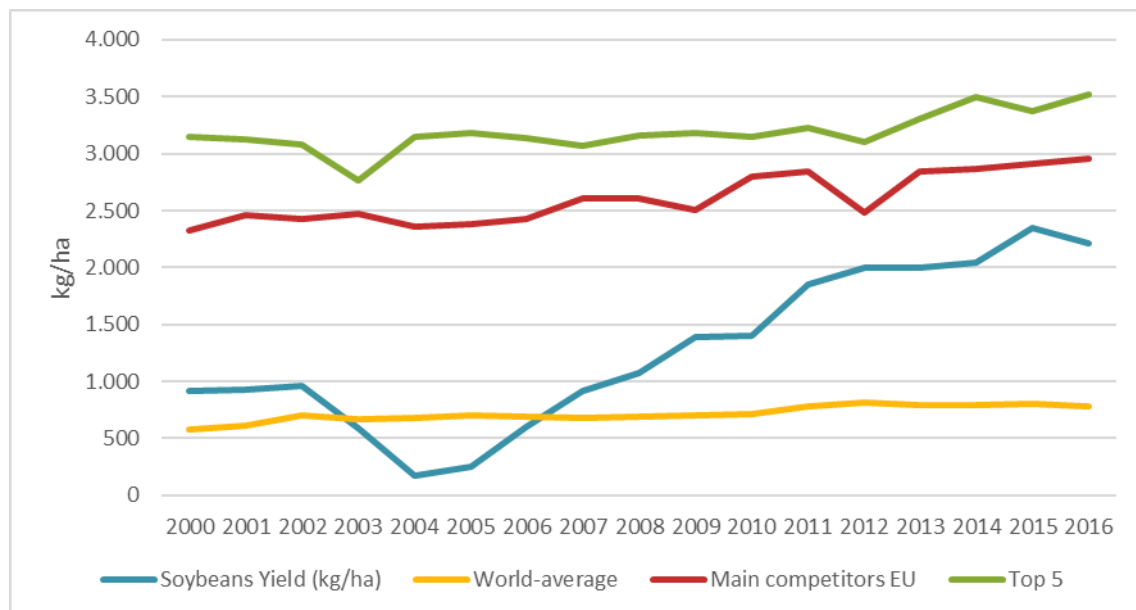


Figure 14 Yield of Ethiopian soya bean production in comparison with the world average, the main competitors on the EU market (Brazil, the USA, Paraguay, Canada, Ukraine and Uruguay) and the five largest producers (Turkey, Italy, Egypt, the USA and Switzerland). Source: FAOSTAT

Compared to the five largest producers in terms of yield (Turkey, Italy, Egypt, the USA and Switzerland), this difference goes up to 57%; see Figure 14. It should be noted, however, that these differences are much smaller than in the case of sesame.

Unfortunately, no data were available to compare the protein content of soya beans from different countries. This comparison would be very useful, since protein content is a major distinguishing factor on the market.

Much of what was said above on the land available for sesame production is of course true for soya production as well.

Soya is difficult to grow organically, but it makes for an excellent rotational crop alongside conventional sesame, since soya binds nitrogen in the soil which in turn provides better growth conditions for sesame.

4.3.5 Sesame oil

Despite the growing demand for sesame seeds and oil in Ethiopia, the productivity, production and oil extraction methods are traditional. Though Ethiopia is among the top 5 producers of sesame seeds in the world, the potential benefit that could be obtained from oil production is below optimum due to the use of traditional technologies and/or the unavailability of high-level industries for processing/refining sesame oil seed in the country (Ayana 2015a).

In our field work, it was difficult to find oil processors that could be interviewed. Stakeholders reported that the production of refined oil in Ethiopia is very limited (about 20,000 tonnes per annum).

The production is low, because the export price of sesame seeds is usually very attractive and sesame oil is hardly consumed locally. Nevertheless, it is seen by a number of stakeholders as a business opportunity, increasing added value and foreign exchange. However, investment in the sesame processing sector has largely been hampered by difficulties in tracing the origin of the sesame, the quality consistency and the volatility in international prices (USDA Foreign Agricultural Service 2016).

The main challenges for the oil-crushing sector in Ethiopia are to ensure an adequate and steady supply of oilseeds as well as to compete with world market prices. Another great concern for Ethiopian oil millers is the unequal taxation of edible oils (NABC and FME-CWM 2015).

Smaller crushing plants do not meet the European standard for oils and their technologies need improvement. More than 1,000 small crushers (mostly with Chinese/Indian machines) are operational at the village level. These local crushers, with a very limited capacity, have low hygiene standards and high risks of contamination with mineral oil. The working environment is far from ideal. Safety risks for employees (e.g. slippery floors, no protection on belts, and so on) have been observed at most of these establishments during the fact-finding mission. Only a few larger crushing or refining companies seem to have adequate safety and hygiene standards compared to European industry standards (Wijnands, Biersteker, and Hiel 2007).

Access to finance in order to address such issues has been reported to be available through different instruments (banks, microfinance institutions, private lenders), but the extent to which this funding is easily available to the average processor is unclear.

4.3.6 Tahini

The production of tahini is also very limited in Ethiopia. Although several companies seem to exist, there is only one that produces for export: AMBASEL Trading House PLC, a larger government-linked company. AMBASEL does not export to the European Union; it has its main markets in Turkey, Lebanon, the Middle East and the USA. In the past, the company also exported to the Netherlands and Poland, but it has lately concentrated on the Middle Eastern market. It was started ten years ago and exports about 20–30 20-ft containers per annum.

The company also exports organic tahini, mainly to Israel and the USA.

Although an increase in production capacity is not impossible, it is clear that Ethiopian businesses have not jumped at the opportunity. The main issues with increasing capacity are (according to AMBASEL):

- machinery problems, in particular related to the lack of homogeneity in seed size;
- access to trained personnel;
- access to quality raw materials at competitive prices;
- colour consistency⁹;
- lack of government support on supply, ECX improvements (in particular of traceability) and customs.

4.4 Current and future demand on the European market

4.4.1 General remarks on oilseeds

The European oilseeds market offers increasing opportunities for suppliers from developing countries. The largest national markets are Germany, France and the United Kingdom, which account for 30%, 18% and 9% of the total European market, respectively.

The organic market in the EU is on the rise, it grew by 7.6% in 2014 and this upward trend has been continuing. At a national level, in countries such as Sweden, the organic food market grew by 40% in 2015.

The oilseed market in Europe is influenced by a number of trends (CBI Ministry of Foreign Affairs 2016e):

Health and wellness. European consumers are heavily influenced by health and wellness. As such, the demand for oilseeds which are considered healthy (such as sesame seeds, pumpkin seeds, sunflower seeds and linseeds) has increased on the European market in recent years (CBI Ministry of Foreign Affairs 2016e).

Convenience and innovation. In addition to health and wellness, the market in Europe is driven by convenience. Changing lifestyles with busier schedules and the increasing number of small households mean that less and less time is spent on preparing food. This trend leads to innovative ready-to-eat products which also follow the health trend, including healthy snacks such as muesli, breakfast and multi-fruit bars; oilseed spreads such as hummus and peanut butter; and other nut/oilseed mixes (CBI Ministry of Foreign Affairs 2016e).

Ethnic cuisines. European consumers show an increasing consumption of ethnic foods, which drives the popularity of oilseeds as ingredients; especially among western European consumers, who are generally more open to trying new ingredients and flavours. As an example, sesame seeds are often used in ethnic cuisines. In the east Asian cuisine, sesame seeds can be found in popular dishes such as dim sum or sushi. For the Mediterranean cuisine, dishes and spreads such as tahini, halva and hummus (sesame-based products) are increasing in popularity. Hummus in particular is one of the fastest-growing products on the European food market (CBI Ministry of Foreign Affairs 2016e).

Sustainability and certification. There is a growing concern among European consumers about the environment, food safety and nutrition. In addition, consumers are increasingly aware of production methods and income distribution in ingredient-producing regions. These developments have led to an increase in certification schemes and to a number of sustainability labels on the European market.

In general, the organic market in Europe grew by 7.6%, continuing its upward trend. The demand for organic oilseeds has followed this upward trend. For oilseeds, this trend is the most apparent in specific product applications such as healthy snacks, spreads, bakery items, and so on. This fact is

⁹ The top black spot on the seed must be removed to avoid the colour being affected.

often due to constraints in the supply of certified products rather than any specific characteristic of these products. The largest national markets are Germany, France and the United Kingdom. In terms of sustainability, Organic certification also addresses a general consumer concern related to pesticide residues in oilseeds and the quest for healthy foods (CBI Ministry of Foreign Affairs 2016e).

In terms of certification for social responsibility, the European market remains small for Fairtrade certified oilseeds. Listed in the FLO certification scheme's minimum price and premium database are groundnuts (peanuts), sesame seeds and soybeans. However, exact figures on the market size of these certified oilseeds are not available.

Even though certification schemes bring important advantages, their rapid growth on the European market has led to an overload of labels and consumer confusion. The industry is gradually adapting to this reality and a new development is taking place: the emergence of validation as a substitute for certification (CBI Ministry of Foreign Affairs 2016e).

Genetically modified products. Public concerns in Europe about genetically modified products have also made the food industry hesitant to use GMOs in food products. As the European market has set a zero-tolerance policy for imports of genetically modified organisms (GMOs), it is impossible for most exporters of genetically modified oilseeds to access the European market. This situation can even be the case for GMOs which are considered to be safe by the European Food Safety Authority (EFSA). At the moment, the only genetically modified oilseeds available on the European market are soybeans and rapeseed (CBI Ministry of Foreign Affairs 2016e).

4.4.2 General remarks on pulses

Pulses are a very **valuable protein replacement for meat-based products**. There is a growing social, nutritional, health and environment trend in Europe as citizens look for alternative sources to supplement their protein requirements. As a general rule, European consumers are becoming more aware of health issues and are getting more interested in authentic as well as clean products. Exporters can anticipate these trends by focusing on nutrition, organic products, veganism, food intolerances and "ancient" grains (CBI Ministry of Foreign Affairs 2016f).

The United Nations Food and Agricultural Organization (FAO) declaring 2016 the **international year of pulses** has also created further opportunities by making more consumers aware of the nutritional value of pulses, which should lead to future opportunities for developing nations such as Ethiopia¹⁰. According to FAO, "Global demand for pulses is growing, driven by demographic and income trends and increased consumer consciousness of the nutritional value and other health benefits of pulses, especially in relation to coeliac disease and gluten sensitivity."

In addition, there are marketing opportunities to Europe for some high-volume pulses such as soya beans if it can be certified that they are **GMO-free and/or organic**.

The growth in trade for pulses has been hindered by the lack of product innovation to match modern consumer habits. Looking for innovative ways to **repackage pulses** for the modern consumer in Europe could satisfy the general trend towards ready-to-eat meals that are quick and easy to prepare. Unfortunately, to satisfy this trend would require investment into research and the industrial processes required to manufacture such products.

4.4.3 Sesame seeds

In addition to the aforementioned trends in the oilseeds sector, the sesame market is particularly influenced by the following trends:

¹⁰ <http://www.fao.org/3/a-i7174e.pdf>

Non-traditional foods. Non-traditional foods such as sesame-based products (tahini, hummus and halva) are becoming increasingly popular in Europe. The United Kingdom and Germany are important markets for these products.

Niche products such as black sesame ice cream and the condiment gomasio (sesame salt) are also becoming more popular. Similarly, the expansion of non-traditional cuisines such as Korean food also allows for the introduction of dishes containing sesame seeds, thus providing opportunities in the food service segment (CBI Ministry of Foreign Affairs 2017).

Health and wellness. There has been a steady increase in product launches within Europe using sesame seeds as a healthy product. The nutritional characteristics of sesame seeds are especially attractive due to its vitamin, mineral, fibre, healthy fat and protein content (CBI Ministry of Foreign Affairs 2017).

Convenience and innovation. Sesame is a growing market with room for innovation, often including raw foods with a low fat, low sugar and high protein content (e.g. cereal bars such as sesame honey energy bars are in high demand). Innovations including ready-to-use organic tahini, snack options with black sesame and sesame milk also boost the market in combining convenience and non-traditional foods (CBI Ministry of Foreign Affairs 2017).

Opportunities in niche segments such as organic, functional, health foods or gourmet are expanding and becoming interesting in some markets, but they still represent a small share of the total demand.

The main consuming and importing countries are Germany, the Netherlands, Poland, Greece and the United Kingdom.

In **Germany**, sesame seeds are used in many different bread types, or as a topping on several snacks (such as pretzels) or pastries. Germany has a large bakery and confectionery sector (CBI Ministry of Foreign Affairs 2017).

The **Netherlands** is the third-largest European importer of sesame seeds in the EU (CBI Ministry of Foreign Affairs 2017). Market trends in the Netherlands are mainly based on a healthier lifestyle and ethnic cuisine. As well as being an essential ingredient in baked goods and crackers, sesame seeds in products such as hummus, tahini and sushi are increasingly popular in the Netherlands. There is also an increasing demand for organic sesame seeds.

Poland is an important player on the European market for sesame seeds. The influence of different cuisines using sesame seeds and the high consumption of bakery products make trends in the Polish bakery sector a main market in Poland. The organic market in Poland is increasing in popularity, as Poland is the country with the highest population in eastern Europe and is the second-largest organic market in the region, after Germany. For sesame seeds, this trend means that niche applications such as baked products, crackers, health bars, hummus, tahini and so on with Organic certification could offer increasingly interesting market prospects in Poland (CBI Ministry of Foreign Affairs 2016a).

Greece is a large importer of sesame seeds. Sesame seeds are a popular ingredient in traditional Greek cuisine, used in spreads such as tahini and halva as well as in bakery and confectionery products (CBI Ministry of Foreign Affairs 2017).

In the **United Kingdom**, market trends in sesame seeds are focused on food industry innovation. In this context, the UK is the leading country in Europe when it comes to food industry innovations. It is estimated that around 80% of British consumers prefer non-traditional food products. Health and wellness are also a consistently increasing trend in consumer preferences. On the organic market, the sales of organic products in the UK increased by 4.9% in 2015 (approximately 2.6 b€). As to Fairtrade certification, the UK is the largest market for certified products both in Europe and worldwide (2.1 b€ in 2014). However, the market decreased by 4% in 2014 (CBI Ministry of Foreign Affairs 2016g).

4.4.4 Mung beans

Europe has a stable market for mung beans, which are the most commonly used bean for sprouting. The United Kingdom is the largest importer of mung beans in Europe, influenced by its large Indian population. Indian cuisine has become integrated into British food culture and has indirectly increased the demand for traditional ethnic ingredients such as mung beans. Other main importers of dry mung beans are Germany and the Netherlands; these three countries are also popular markets for bean sprouts. Germany shows the strongest growth as a consequence of the increasing attention to health food.

There are three main trend categories identified on the European market.

- **Health food:** an increasing number of consumers are aware of the need for a healthy diet, in addition to people with dietary requirements. Online media and food specialists promote the benefits of health foods.
- **Organic:** attention from European consumers to health, the environment and social responsibility is leading to a rapid growth of the organic sector. Europe can offer opportunities for organic mung beans, because supplies are often insufficient to meet the growing demand. Germany is one of the countries with a significant growth in organic food.
- **Ethnic foods:** mung beans as well as their sprouts are typical ingredients in ethnic cuisines such as the Asian cuisine, while they are also popular with other nationalities. The increasing integration of different nationalities means that European consumers are becoming ever better acquainted with transnational dishes using dry mung beans consumed whole, as flour or paste ingredient. This trend is particularly evident in western Europe.

4.4.5 Soya beans

Soya beans, rapeseeds and sunflower seeds altogether dominate the European seed market. In particular, soya beans are one of the most important commodities in Europe (CBI Ministry of Foreign Affairs 2016f).

The “**flexitarian, vegetarian and vegan**” market is particularly important in Europe. The number of Europeans that are reducing their meat consumption is increasing significantly. Health, animal welfare and money are underlying motivations. Part-time vegetarians or flexitarians are an interesting target group for vegetable protein sources such as soybeans (CBI Ministry of Foreign Affairs 2016f), as the quality of soya protein is considered comparable to animal protein (Messina 1999).

In this context, Germany, Italy, Austria, Sweden and the United Kingdom are interesting markets, as they have the highest percentage of vegetarians (10%) in the EU. Exact data are unavailable, but it is expected that the number of vegetarians in these countries is gradually increasing (CBI Ministry of Foreign Affairs 2016f).

At a global level, the **organic segment** is significantly popular because of the increasing preference of consumers for organic foods without chemicals and artificial additives that are usually bad for health (Transparency Market Research 2017). The growing awareness of the health and nutritional benefits of organic foods among consumers as well as the multiple end-use applications of soya protein drive an expected increase of the market from 2016 to 2021 (Markets and Markets 2016).

Usage of organic soya as a protein source is becoming popular in food applications such as functional foods and manufacturing industries. This functional food segment dominates the market for organic soya protein due to the high nutritional value of soya protein, which in turn increases the demand for organic soya protein. The change in consumer patterns towards organic, healthy and nutritious food products in regions such as Europe has led to the growth of the market for organic soya protein.

Globally, the growth of the functional foods, meat alternatives and dairy alternatives industries has led to a large-scale adoption of organic soya protein for various applications. However, the high cost of organic foods is restraining the market (Markets and Markets 2016).

There is a growing demand from the **food and beverage industry** for organic soy (Markets and Markets 2016); in Europe, this market is constantly expanding with new food products and innovations (CBI Ministry of Foreign Affairs 2016f). In 2015, the EU dominated the global market for soya due to the developed food and beverage industry in the region (Markets and Markets 2016). Within this context, soymilk is a popular product (CBI Ministry of Foreign Affairs 2016f).

As mentioned before, the rising awareness among people of soya's **health benefits** has an important influence on the global demand for soybean products (Transparency Market Research 2017). As the awareness and use of plant-based protein are growing, soya is by far the most widely used source of plant-based protein (Markets and Markets 2016).

End-use segments such as animal feed are also serving to boost soya demand. Among the use categories (food and beverages, personal care, dietary supplements, pharmaceuticals and animal feed), the segment of animal feed accounts for the highest share in revenue at present. In the years ahead, this sector is predicted to expand at a healthy pace (Transparency Market Research 2017).

As to the usage of glyphosate in Europe, the subject of GMO versus non-GMO is already an important factor promoting the idea of a domestic soybean market. As a result, a higher number of seeds are being treated to supplant the imports, which drives the seed treatment market for soybeans (Mordor Intelligence 2018b). The European market for seed treatment in soybeans is projected to grow by 2020, where France is the largest market for seed treatment. Germany is also an important market in this context (Business Wire 2017).

4.4.6 Sesame oil

Sesame oil is increasingly used as a gourmet product in-home and out-of-home within Europe. The speciality oil segment is focused on high quality and is sold at a higher price. Cold-pressed and high-quality toasted sesame oils are becoming especially popular, particularly in the United Kingdom.

Cold-pressed sesame oil has a special appeal as a healthy oil and consumers see it as a healthy alternative in comparison to other cooking oils (CBI Ministry of Foreign Affairs 2016c).

Sesame oil is usually imported into Europe in its crude form (CBI Ministry of Foreign Affairs 2017). For European consumers and buyers, the indication of origin is a factor affecting the demand and prices for sesame oil, as sesame oil with a specific origin is especially popular on the market (CBI Ministry of Foreign Affairs 2016c).

In the longer term, sesame oil may be a significant opportunity, with the local Wollega variety being ideally positioned for oil extraction (ATA and USAID 2015). The potential for Ethiopian sesame oil is large and might create much added value (Wijnands, Biersteker, and Hiel 2007). However, in the near term, it may be challenging to enter the global sesame oil market successfully due to significant fluctuations in domestic prices and strong competition from large global exporters such as India or China (ATA and USAID 2015).

The United Kingdom is the most important market for sesame oil in Europe, as it was responsible for around 40% of the total European consumption in 2014 (EU market estimated at 5,000 tonnes), followed by Germany (20%) in second place (CBI Ministry of Foreign Affairs 2016c).

In Germany, the use of sesame oil is increasingly popular, especially in urban areas such as Berlin, Hamburg and Munich, where ethnic restaurants and cafes offer dishes using sesame oil as an ingredient or as a dressing. It is also gaining ground on supermarket shelves and in organic shops. Organic certified sesame oil is an important niche product, as Germany accounts for 30% of the

organic food market in Europe. In 2013, the organic food market grew by 7%, accounting for around 4.0% of the entire food market in Germany. The specific product group of fats (including vegetable oils) accounted for 3.3% of the total German organic food sales in 2012 (an increase of 11% in 2012) (CBI Ministry of Foreign Affairs 2014).

4.4.7 Tahini

European consumers are increasingly open to the consumption of ethnic foods; as a result, products such as tahini, halva and hummus are increasing in popularity and are driving innovation on the market (CBI Ministry of Foreign Affairs 2017). This fact is especially true for western European consumers, who are generally more open to trying new ingredients and flavours. Hummus in particular is one of the fastest-growing products on the European food market (CBI Ministry of Foreign Affairs 2016h).

The demand for authentic ethnic cuisine has reached high levels. As the rise in popularity of the Middle Eastern and Mediterranean cuisine is a response to the world's growing multiculturalism, the number of consumers are rapidly growing, which are expected to be found at both mainstream and ethnic restaurants (Mordor Intelligence 2018a).

Innovations such as ready-to-use organic tahini, snack options with black sesame and sesame milk also boost the market in combining convenience and non-traditional food (CBI Ministry of Foreign Affairs 2017). According to Future Market Insights (Future Market Insights 2014), the consumption of tahini through sweet/savoury spreads is higher than that in sauces, dips and spreads or bakery/confectionary.

The health benefits of tahini influence the market, resulting in a considerable growth of the sauces and dips segment (Technavio 2017). The awareness among consumers about the low-calorie properties and **preservative-free status of tahini** is one of the prime factors why it has gained popularity among food processors (Mordor Intelligence 2018a).

Tahini, hummus and halva are becoming popular in Europe. For example, two in five households within the United Kingdom are said to have a pot of hummus at home. Germany is also seeing a strong increase in the consumption of hummus (CBI Ministry of Foreign Affairs 2017). Moreover, tahini is growing in popularity within countries such as France, Spain and Italy due to its health benefits. One of the driving factors for the market is European consumers' inclination towards seed-based spreads (Technavio 2017).

The Middle East and Mediterranean market for tahini is estimated at a value of 783.9 m\$ in 2014 and expected to reach 1,081.7 m\$ by 2020, reflecting a CAGR of 5.7% in the forecast period (2015–2020).

This market has been assessed by product types including paste & spreads, halva & other sweets and sauces/dip. The market is segmented on the basis of distribution channels, where conventional retail stores represented 41.9% of the tahini products sold in these countries (Future Market Insights 2014).

Geographically, the market is segmented into four regions: the Middle East, excluding the Gulf Cooperation Council (GCC) region¹¹, Turkey, Israel and Lebanon; North Africa; the GCC; and Mediterranean Europe (France, Spain, Italy and Greece). The Middle East – excluding the GCC – and Mediterranean Europe together constituted more than 69% of the market share in 2014, which is expected to remain stable until 2020. Mediterranean Europe is projected to increase by 190 BPS between 2014 and 2020 (Future Market Insights 2014).

¹¹ KSA (Kingdom of Saudi Arabia), UAE (United Arab Emirates), Qatar, Oman, Kuwait and Bahrain.

4.5 European requirements

The technical requirements specific to each product are discussed in Section 13. This section discusses to the extent possible whether the Ethiopian exporters can meet the required standards.

We have found that the main requirement of compliance issues can be grouped into different general topics.

CERTIFICATION

A number of European companies require certification as a minimum requirement from exporters. The most-requested certification regards food safety in the form of HACCP, ISO 22000 or GMP certification. While this certification is an absolute must for value-added products, it is often required for agricultural raw materials as well. Some importers require certification against other standards, such as the Global Food Safety Initiative (GFSI), British Retail Consortium (BRC) or International Featured Standards (IFS).

Of course, organic raw materials need to be properly certified.

One importer also required a certificate for labour practices against standards from the International Labour Organization (ILO).

Most producers that we could interview were not certified against any standards; a few exceptional cases, however, did exist (AMBASEL, for example, holds quite a series of relevant certificates for their tahini operations). The main issues with certification as expressed by the stakeholders were:

- cost of designing the management system needed for certification;
- cost of the certification process itself;
- lack of compliance culture among employees.

PURITY

Particularly in the case of agricultural raw materials, there are technical requirements for (i) purity and (ii) admixture, where purity is the absence of other varieties or types of raw material (e.g. red sesame in white sesame) and admixture is the presence of materials other than the raw material. Some importers differentiate between vegetable matter (e.g. stems), "dirt" (e.g. sand or stones introduced at the farming or harvesting stage) and foreign matter (e.g. glass or metal introduced while processing).

There are also requirements for colour purity.

In general, these requirements are ensured by proper cleaning and colour sorting machines.

Exporters have assured that purity standards can be met at least for sesame; typical values are 99%, 99.5% and 99.95% purity. Whether standards on admixture can be met is unclear.

Colour sorting machines are not generally available and we have not seen evidence of metal detectors or X-ray machines to meet requirements for foreign matter.

SIZE AND UNIFORMITY

Size and uniformity are also key issues for importers.

While size is usually a function of production, uniformity is obtained through proper grading and sorting. In some cases, variability in size is a natural problem of the ripening process, e.g. in soya beans where beans nearer to the ground mature before beans higher up.

Some machines for sorting exist, but uniformity is a recognised problem by Ethiopian exporters.

REGULATORY REQUIREMENTS

The European Union has stringent regulatory requirements for food safety. In particular, four requirements are relevant in this context:

1. maximum residue levels of pesticides and other substances;
2. salmonella;
3. mycotoxins, especially aflatoxins;
4. traceability.

As agricultural raw materials are not tested typically upon purchase (for a variety of reasons), exporters do not usually know whether they actually meet requirements 1–3. In some cases, these parameters are tested by surveyors or importers before shipment; in many cases, however, this aspect is not tested before its arrival at the European border.

The Rapid Alert System for Food and Feed (RASFF) collects all cases where cross-border shipments have been detected which violate European regulations in one way or another. Such incidences are then reported to the country of origin via National Contact Points, typically a Competent Authority in the country of origin.

With regard to meeting the legal requirements for exporting to the EU, the situation is somewhat more promising; admittedly, the volumes of exports to the EU are currently not very high. Ethiopia is the 84th-most important country of origin for imports, with agricultural imports representing 69.6% of all imports in 2017. The total value of agricultural imports was 484 m€ in 2017 (European Commission 2018a).

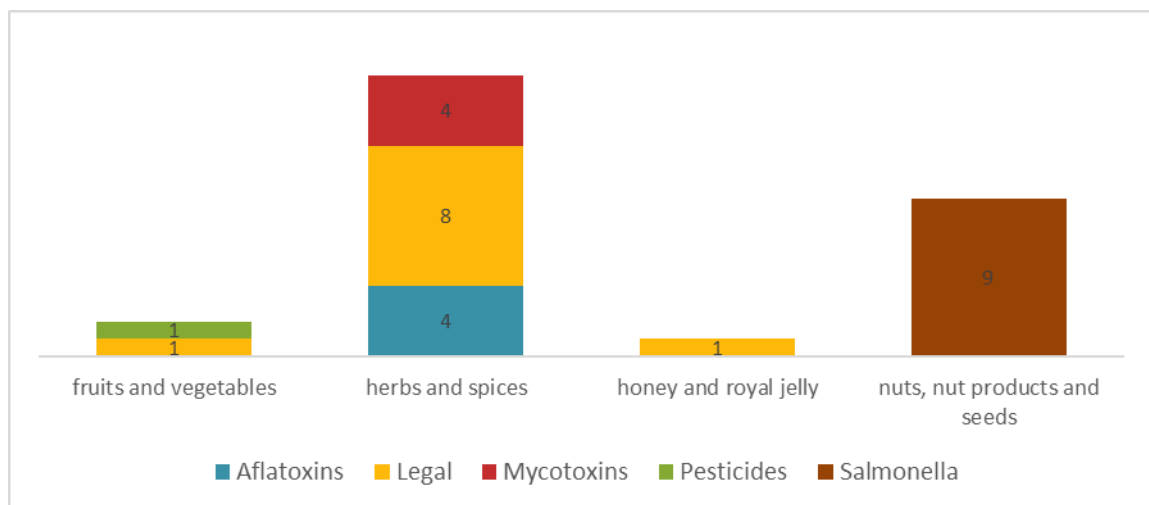


Figure 15 Notifications on the Rapid Alert System for Food and Feed (RASFF), August 2016–July 2018, by product category and reason of notification. Source: [RASFF](#)

However, even taking into consideration the volume of exports, Ethiopian exports generally meet legal requirements quite well. In the two years between August 2016 and July 2018, just 28 shipments from Ethiopia were rejected, as shown in Figure 15¹². The oilseeds and pulses sector received just ten rejections, nine for sesame and one for kidney beans.

The rejections of sesame were all from 2016 in Greece due to the presence of salmonella; exporters recognise that salmonella is not controlled properly in the country. Since they cannot test material before purchasing at ECX (and ECX does no testing at all), they are basically at the mercy of the farmers and traders selling into ECX.

Kidney beans received one notification due to an excess of the maximum residue limits of pesticides.

¹² Unfortunately, the total number of shipments are not reported by RASFF.

In general, one can conclude that the oilseeds and pulses sector largely complies with European regulations on imported goods. This compliance refers to legal requirements (e.g. documentation such as the phytosanitary certificate), labelling requirements and food safety.

Meeting the European requirements for traceability is a different matter. Stakeholders have complained about the lack of traceability of materials purchased through ECX; however, the more likely culprits are traders repacking goods in a non-traceable way and delivering them to ECX. With the exception of integrated operations, the traceability requirements of the European Union are not likely to be met; however, outside of animal products, traceability requirements beyond the exporter are not typically enforced.

4.6 Export capacity of Ethiopia

4.6.1 General remarks on the export capacity of oilseeds and pulses from Ethiopia

The European Union is an important trade partner for Ethiopia. In terms of total goods in 2017, it was the second-most important destination of exports, at a total value of 736 m€ (19.5% of the total exports). Of those exports, about two thirds were vegetable products, the other important category being machinery and appliances.

Within the agri-food sector, Ethiopia exported on average about 300 m€ per annum to the European Union in the period 2013–2017. By far the most important export goods are coffee, tea and spices (86%), whereas pulses and oilseeds make up a combined 11% of exports.

If all commodity groups are considered, the most exported category is coffee, tea, mate and spices, at 86% of the total exports to the EU. Vegetables and oilseeds account for 7% and 4%, respectively; see Figure 16a.

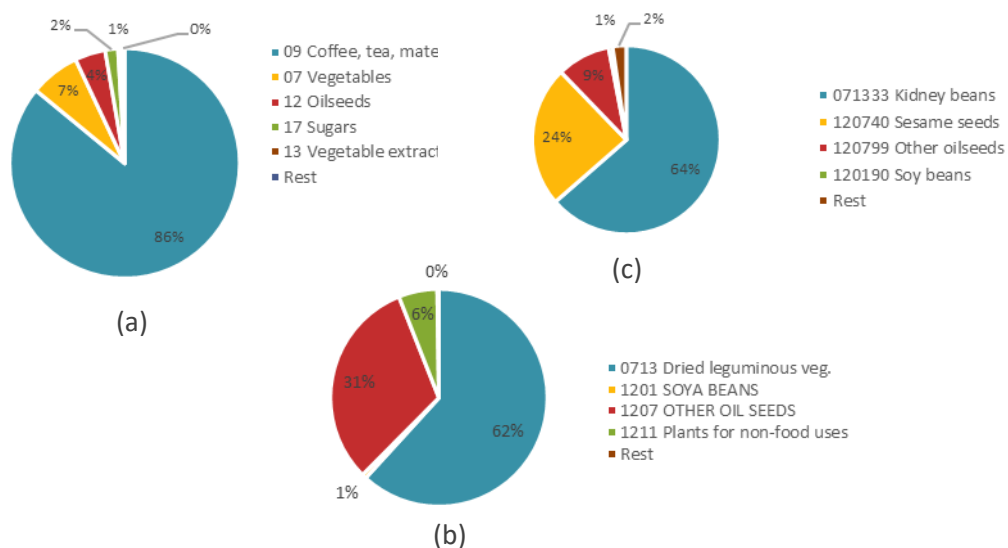


Figure 16 Overview of exports from Ethiopia to the EU by main HS2, HS4 and HS6 codes, averaged between 2013 and 2017, in %. Source: EUROSTAT

Within the oilseeds and pulses sector, 62% of exports are pulses and 31% oilseeds. Soya beans – a category in itself – make up about 1% of exports (Figure 16b). The most exported oilseeds and pulses are common or kidney beans at 64%, sesame seeds at 24% and other oilseeds (niger, hemp) at 9%. The combined exports from the oilseeds and pulses sector averaged 32 m€ between 2013 and 2017; see (Figure 16c).

The three main categories 0713 (pulses), 1201 (soya beans) and 1207 (oilseeds) show a degree of volatility and an overall downward trend, mainly caused by a significant drop in oilseed exports; see Figure 17.

Within the common bean category, red kidney beans make up about 1.5 m€ of exports to the EU based on data from the Ethiopian Revenue and Customs Authority (ERCA), or under 7% of this category (HS071333).

Oilseeds are in general the second-most important Ethiopian export product (worldwide) after coffee, with sesame seed holding the top spot, followed by niger seed which is exported mainly to the USA as bird seed (Wijnands, Biersteker, and Hiel 2007; NABC and FME-CWM 2015). Sesame accounts for over 90% of the value of oilseeds exports from Ethiopia to the world. Ethiopia is the second-largest sesame exporter in the world, after India.

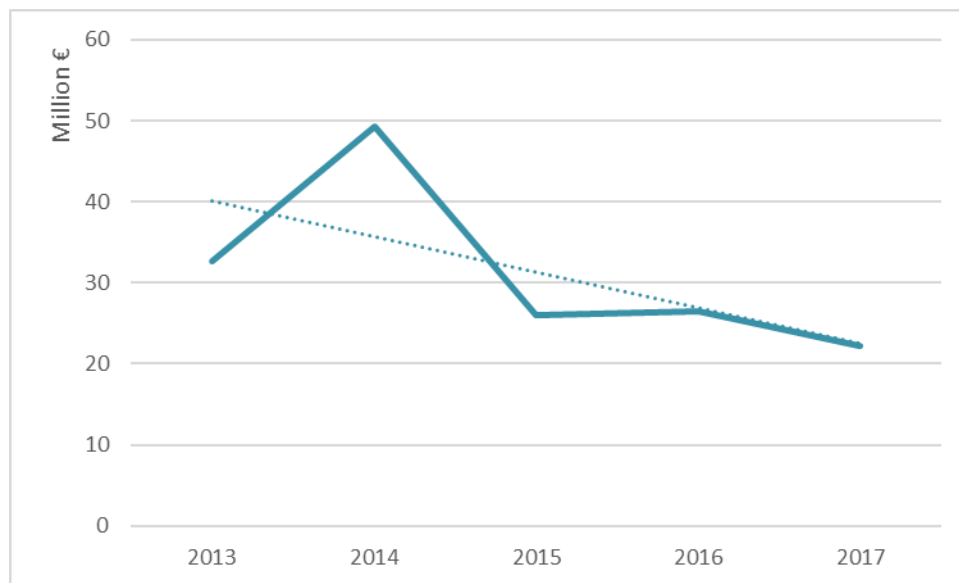


Figure 17 Combined export value of 0713 (pulses), 1201 (soya beans) and 1207 (oilseeds) from Ethiopia to the EU, 2013–17, in m€. Neglected products in HS codes 07 and 12 are about 6%. Source: EUROSTAT

On the other hand, pulses are the third-largest export commodity (IFPRI 2010), while their performance in exports is influenced by both the domestic and the international market situation (Alemu et al. 2010). The Ethiopian pulses sector has grown, as well as its export markets. However, it still has not capitalised on all opportunities. According to (ITC 2016), Ethiopia is the leading African exporter of pulses. Kidney beans are the main commodity exported from Ethiopia to the world. According to COMTRADE, kidney beans accounted for an export value of 107 m\$ in 2016.

The major markets for exports of Ethiopian oilseeds and pulses are Asia (in particular China, India and Pakistan), the Gulf States and the neighbouring African countries. Although the European Union is a trade partner, it is not the primary destination of oilseeds and pulses exports.

4.6.2 Sesame seeds

Unlike other international sesame producers, Ethiopia’s sesame is mainly produced for the international market, with nearly 75% going to exports. The sesame that is not exported is mostly used for seeding, oil crushing and baked products (USDA Foreign Agricultural Service 2016).

Sesame is exported worldwide by Ethiopia. Table 6 summarises key Ethiopian data on the export capacity of sesame seeds.

According to data from COMTRADE and ITC Trade Map in 2016, the total exported value of sesame seeds amounted to 431 m\$, while sesame exports were valued at 714 m\$ in 2014. At the global level, as well as at the European level, Ethiopian exports showed an unstable trend during the period 2013–2017; however, exports to Europe showed an overall downward trend (see Figure 18). The decrease is mainly due to a reputation of frequent contract defaults (CBI Ministry of Foreign Affairs 2017).

China is the dominant market destination, absorbing around 59% of the total exports of sesame seeds from Ethiopia. Other important partners are Israel (19%) and Turkey (6%). Meanwhile, Greece was the main partner on the European market in the period 2013–2017, accounting for 63% of the total sesame exports to the EU. Greece is an important market for sesame seeds, as they are a popular ingredient in traditional Greek cuisine, used largely in spreads such as tahini and halva as well as in bakery and confectionery products (CBI Ministry of Foreign Affairs 2017).

Table 6 Key aspects of the Ethiopian export capacity of sesame

	Export value (USD)				
	2013	2014	2015	2016	2017
Exports to world	\$494,808,255	\$714,545,764	\$474,398,361	\$431,332,000	
Exports to the EU	\$14,142,000	\$13,045,000	\$6,470,000	\$6,875,000	\$10,042,000
Main market destination (average 2013–2016)*	China (59%)	Israel (19%)		Turkey (6%)	
Main European partners (average 2013–2017)*	Greece (63%)	Netherlands (20%)		UK (7%)	
Main competitors (average 2013–2017)*	India (49%)	Nigeria (14%)		Sudan (9%)	

Notes: (*) Based on trade value

The European market for sesame seeds is strongly dominated by India, with a market share of 49%. Indian supplies to Europe showed a decline between 2012 and 2016 but resumed growth in 2013.

However, the role of Indian exports is declining in the long run due to the increasing pressure on land and the rising domestic consumption. A general shift in sesame production from India (and China) to Africa is being witnessed on the international market. This development will open up further space for African suppliers of sesame seeds in Europe (CBI Ministry of Foreign Affairs 2017).

In the EU, Ethiopia accounted for a 4% share of the sesame market in the period 2013–2017. With a higher basic quality of seeds, Ethiopia has strong possibilities of entering the European market.

Other important suppliers to Europe are Nigeria and Sudan; on average, they cover 14% and 9% of the total sesame demand, respectively. European imports of sesame seeds sourced in Nigeria, for example, have increased at an annual average rate of 25% in volume since 2012. In 2016, they amounted to 22 m€.

In spite of a dominant position on the European market, India and Nigeria face serious reputation problems and tighter controls due to contaminated sesame seeds (CBI Ministry of Foreign Affairs 2017).

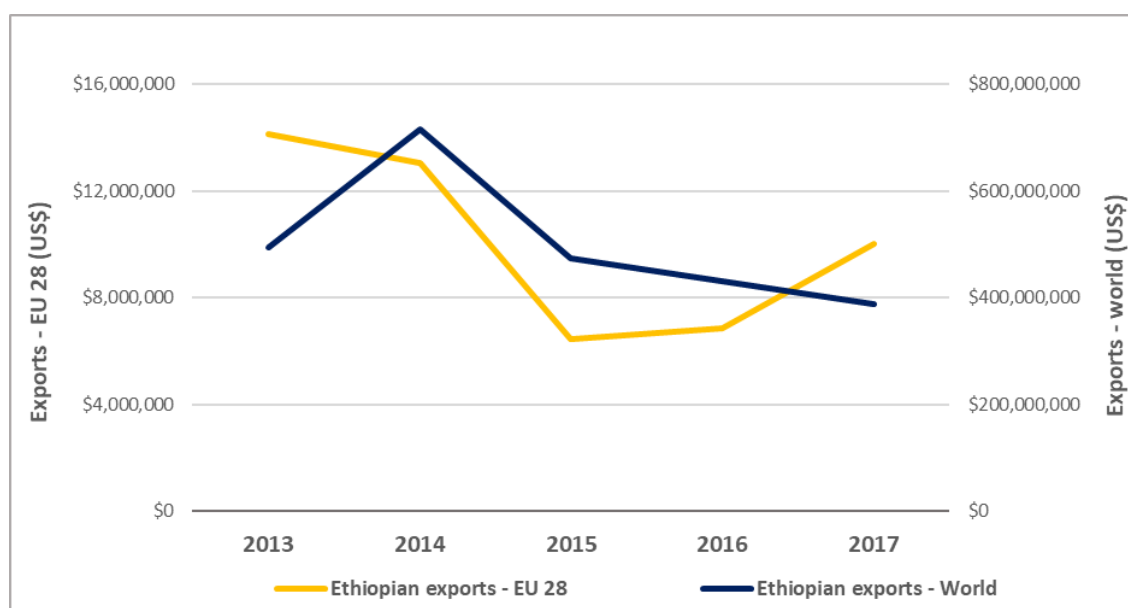


Figure 18 Ethiopian exports of sesame seeds to the world and the EU-28, 2013–2017, in \$

In general, around 80% of the European imports of sesame seeds were sourced directly from producing countries in Asia, Africa and Latin America. The remaining 20% entered the market through trade hubs, mainly the Netherlands and Germany, where they were distributed to other European markets. Germany itself is the main destination of European re-exports, holding almost 30% of the market. It is followed by France (15%) and Poland (7%) (CBI Ministry of Foreign Affairs 2017).

4.6.3 Mung beans

Ethiopian exports of mung beans showed volatility for the period 2013–2017 (Figure 19). According to COMTRADE, exports to the world in 2015 accounted for the lowest trade value during the period at 598 k\$, while exports in 2016 registered their highest value at 15 m\$. Vietnam, Indonesia and Malaysia are clearly the most important export markets for Ethiopia, as they absorb 32%, 27% and 10% of the total Ethiopian exports, respectively (see **Fout! Verwijzingsbron niet gevonden.**).

Table 7 Key aspects of the Ethiopian export capacity of mung beans

	Export value (USD)				
	2013	2014	2015	2016	2017
Exports to world	\$3,472,358	\$2,658,334	\$598,035	\$15,017,600	
Exports to the EU	\$25,000	\$63,000	\$118,000	\$67,000	\$124,000
Main market destination (average 2013–2016)*	Vietnam (32%)	Indonesia (27%)		Malaysia (10%)	
Main European partners (average 2013–2017)*	Portugal (21%)	Czech Republic (19%)		France (17%)	
Main competitors (average 2013–2017)*	Myanmar (37%)	China (30%)		Australia (8%)	

Notes: (*) Based on trade value

By contrast, Ethiopian exports to the European market are volatile, although they show an overall increasing trend (see Figure 19). Exports of mung beans to the European Union are limited, representing on average 6% of the total exports from Ethiopia, at around 79 k\$ per annum. Exports to the EU-28 accounted for 124 k\$ in 2017, which is the highest value during the period. Portugal, the Czech Republic and France are the main destinations in Europe; during the 2013–2017 period, they absorbed on average 21%, 19% and 17% of the market, respectively. However, exports to these countries are highly volatile.

According to COMTRADE, exports of mung beans to Europe over the last five years (2013–2017) were headed by Myanmar (37%) and China (30%), with Australia in a distant third place (8%). As the largest supplier of mung beans to Europe, Myanmar accounts for an average export value of 13.5 m\$ per annum and an average annual growth rate of 36%.

Myanmar and China managed to maintain their important position on the European market for mung beans thanks to technical assistance and audits from Europe. Their export includes mung beans that are allowed for sprouting. China has a very large internal and regional market, while Myanmar is positioning itself more and more as a global supplier.

Most of Myanmar’s export is destined for India, but a further export growth to Europe can be expected, as sanctions have been relieved since April 2013.

Although the supply from China decreased significantly in the past five years, China and Myanmar together dominate the export to Europe (CBI Ministry of Foreign Affairs 2016b). Ethiopia will have to exploit the reputation of its sesame and its short distance to Europe.

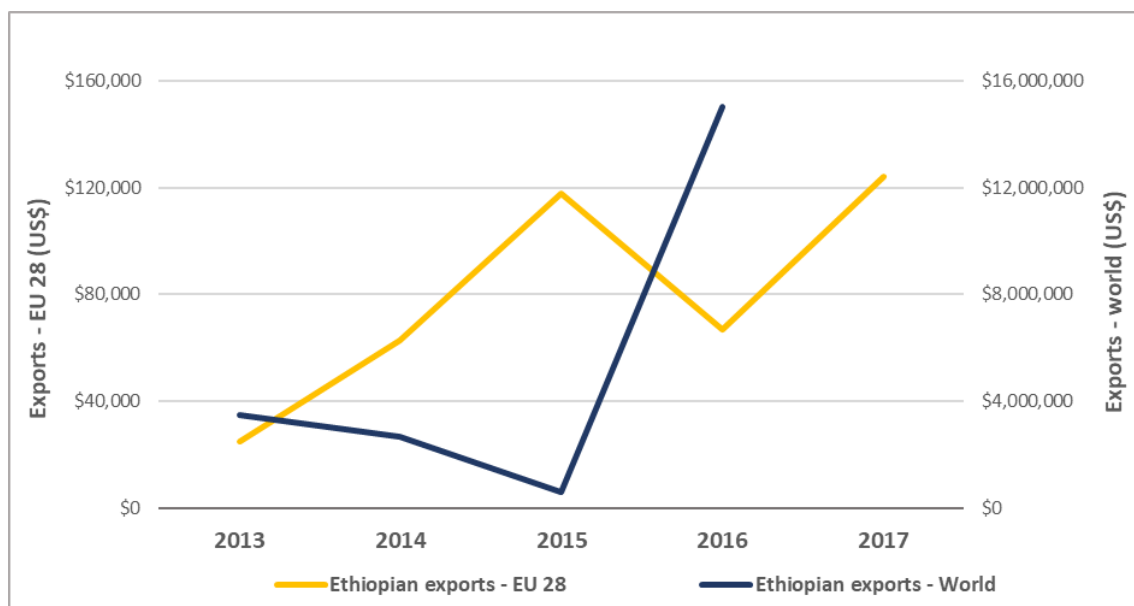


Figure 19 Ethiopian exports of mung beans to the world and the EU-28, 2013–2017, in \$

4.6.4 Soya beans

According to statistics from COMTRADE, Ethiopian exports of soya beans are decreasing on average by 13% per annum. In 2015, the global export value from Ethiopia reached 17.5 m\$. Vietnam, India and Indonesia were the main export destinations over the period 2013–2015, absorbing 32%, 20% and 15% of the total Ethiopian exports, respectively (see Table 8).

Ethiopian exports to the EU were unstable according to data from EUROSTAT for the period 2015–2017. In 2016, Ethiopia registered its highest export value (656 k€) to the EU. However, export values were significantly lower in 2015 and 2017, at less than one thousand euros (see Figure 20).

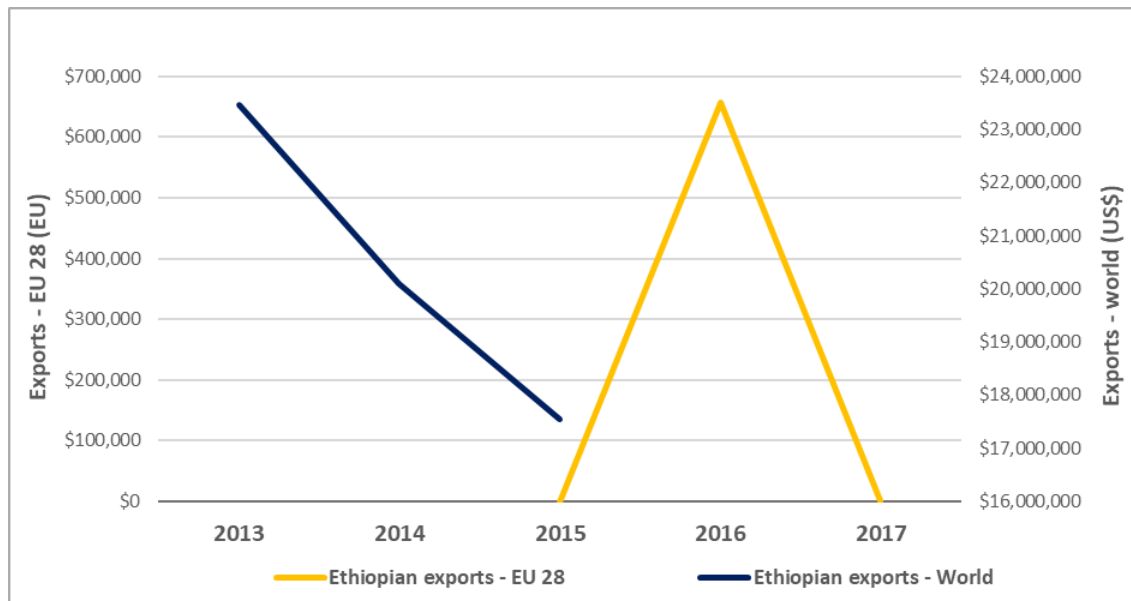


Figure 20 Ethiopian exports of soya beans to the world and the EU-28, 2013–2017, in \$

According to COMTRADE, the market value for soya beans in Europe was valued at 5,887 m\$ in 2017. In the period 2013–2017, 40% of soya beans were imported from Brazil, 32% from United States and 10% from Paraguay (see Table 8). This high market value of soya beans presented a downward trend over the period 2013–2017, with a 25% decreasing rate of imports into the EU. Still, the European demand remains very high and importers are interested in supply from reliable sources. However, importers have stated their interest for new sources in interviews, especially ones that are guaranteed non-GMO.

Table 8 Key aspects of the Ethiopian export capacity of soya beans

	Export value (USD)				
	2013	2014	2015	2016	2017
Exports to world	\$23,462,891	\$20,088,005	\$17,539,348		
Main market destination (average 2013–2016)*	Vietnam (32%)	India (20%)		Indonesia (15%)	
Main competitors (average 2013–2017)*	Brazil (40%)	USA (32%)		Paraguay (10%)	

Notes: (*) Based on trade value

Imports of both GMO and GMO-free are legal. As most feed is GMO (85–90%) and GMO-free is difficult (very often due to vessel contamination), guaranteed GMO-free provides an advantage to exporters (and a premium of 0–150 \$/Mt).

4.6.5 Sesame oil

As shown in Table 9 and Figure 21, exports of sesame oil are very limited in Ethiopia. According to COMTRADE, Ethiopian exports to the global market accounted for a very low value of 60 USD in 2013 and 265 USD in 2016. In both cases, the United States was the destination market.

The sesame oil market in Europe shows an overall stable trend. On average for the period 2013–2017, the import market was valued at 31.9 m\$. In this period, 44% of the imported sesame oil to Europe was supplied from Mexico, 15% from Singapore and 10% from China.

Mexico experienced a slight decline (by 7%) between 2013 and 2017, while China increased its exports (24%) to Europe in the same period. Although exports from Singapore remained stable between 2014 and 2016, there is a decline in growth (by 17%) when comparing 2013 and 2017.

Partial substitution of exports from these countries of origin by Ethiopian products should be feasible, especially for the luxury market, which constantly craves new products.

Table 9 Key aspects of the Ethiopian export capacity of sesame oil

	Export value (USD)			
	2013	2014	2015	2016
Exports to world	\$60	-	-	\$265
Main market destination (average 2013–2016)*	USA (100%)			
Main competitors (average 2013–2017)*	Mexico (44%)	Singapore (15%)		China (10%)

Notes: (*) Based on trade value

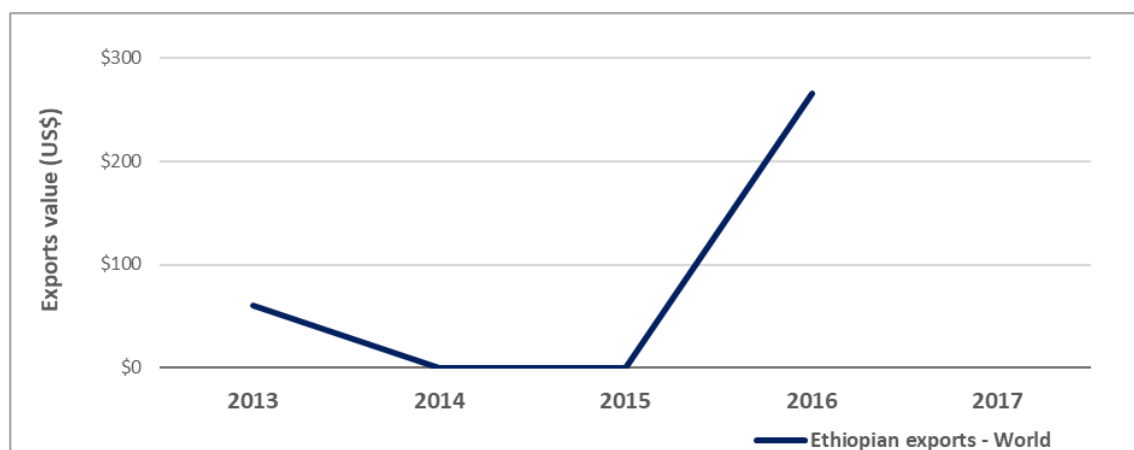


Figure 21 Ethiopian exports of sesame oil to the world, 2013–2017, in \$

4.6.6 Tahini

An assessment of the export capacity of tahini has not been possible. There is currently limited production of tahini in Ethiopia and only one company (AMBASEL) exports tahini, mainly to the Middle East and Asia.

There are no official statistics of tahini exports.

Section 5

Structure, governance and sustainability of the value chains

Summary

This section provides a detailed analysis of the value chain (VC) for oilseeds and pulses. All influencing actors in the VC of the selected products for the project purposes are identified. Moreover, this section details the sustainability aspects of the VC. After this introduction, more detailed information per product follows.

There is a strong similarity between the value chains for oilseeds and pulses. The listing on ECX seems to be the only difference between these two value chains. In general terms, the structure of the marketing chain can be divided into three segments: primary, secondary and tertiary markets.

In Ethiopia, farmer organisations are made up of three layers: cooperatives, unions and federations. In this context, the smallholder value chain has four layers (farmers, collectors, aggregators and exporters).

Five main cross-cutting organisations have been identified throughout the value chains for oilseeds and pulses. With this regard, the Export and Production Financing sectors play a role as chain supporters. Meanwhile, the Ethiopia Commodity Exchange (ECX), the trade promotion for the oilseeds and pulses sector headed by the State Minister, and the Agricultural Transformation Agency (ATA) have a role as chain influencers.

Particularly for the range of products that have an interest for this study, the identification of actors, influencers and supporters is presented in Table 10.

Table 10 Key actors and influencers in the sesame, mung beans and soya beans value chain

Sesame, sesame oil and tahini	Mung beans	Soya beans
Mainstream Actors		
<ul style="list-style-type: none"> - Input suppliers. - Agricultural Input Supply Enterprise is the sole importer of fertiliser. Distribution is through unions and cooperatives. There are over 15 unions in the key sesame growing areas of Humera, Metema, Quara, Metekel and Wollega. Supply is mostly from locally sourced seed cooperatives, individual farmers and projects. - Smallholder farmers: 736,000 smallholders (60% of total production) growing sesame. - Commercial farmers: land size of 10 ha and above. - Collectors and aggregators: only ECX licensed traders can collect sesame. Expected supply of at least 50 quintals at a time. Long distances from 	<ul style="list-style-type: none"> - Input suppliers. - Agricultural Input Supply Enterprise is the sole importer of fertiliser. Distribution is through unions and cooperatives. There are about 6 unions in the major mung bean growing areas (North Shewa Amhara, South Welo and Assosa), but the crop is also used in sesame growing areas. There is no well-developed seed and agro-chemical supply in mung beans. - Smallholder farmers: almost 326,000 smallholders. - Commercial farmers: land size of 200 ha. There are over one thousand commercial farmers in Gambela, Benishangul Gumuz and western Amhara. 	<ul style="list-style-type: none"> - Input suppliers. - Agricultural Input Supply Enterprise is the sole importer of fertiliser. Distribution is through unions and cooperatives. Use of fertiliser for soybean is limited. Agro-chemicals are supplied by private companies. Ambasel and Chemtex are the major importers and suppliers of chemicals. - Smallholder farmers: they grow soybean primarily as a cash and rotational crop. They account for 50% of the national production. - Commercial farms: they account for over 50% of the national production.

<p>farms to warehouses are a major issue (11 warehouses available in Ethiopia).</p> <ul style="list-style-type: none"> – Exporters: 95% of exports are raw sesame. Limited processing of sesame (hulled sesame and tahini account for less than 5%). 	<ul style="list-style-type: none"> – Local traders and aggregators: average gathering of 3–5 Mt per day. A volume of 10–15 collectors during the peak season. – Unions and cooperatives: bean collection through primary cooperatives. – Traders in Addis Ababa and major cities: traders well linked with exporters and local buyers for processing and semi-processing. – Exporters: mung beans emerging as the major export commodity. 	<ul style="list-style-type: none"> – The Sugar Corporation: enterprise growing soya beans as an intercrop or a rotational crop. – Collectors and aggregators: around 10 local traders collecting soya beans from farmers. – Regional aggregators and central traders: they usually deal in multiple commodities and have the capacity to hold about 100 tonnes per enterprise. – Exporters: mainly based on whole soya bean export (90%) and soya bean cake (10%).
<p>Chain Influencers – Public Sector</p>		
<ul style="list-style-type: none"> – ECX: 95% of sesame is exported through ECX. – National Agricultural Research System (NARS): includes research centres and universities engaged in variety development. – Ministry of Agriculture and Regional Bureaus of Agriculture: responsible for the extension of sesame. – National Bank of Ethiopia: responsible for regulations on FOREX utilisation. Strong tendency of pushing for exports. – Ministry of Trade: responsible for monitoring export performance and supporting companies in market development. – Other stakeholders: Ethiopian shipping and logistics, Customs Authority. 	<ul style="list-style-type: none"> – ECX: temporary place in ECX (6 months). – National Agricultural Research System (NARS): Debre Berhan Agricultural Research Institute serves as a reference research centre for mung beans. – Ministry of Agriculture: responsible for extension services and marketing. – Agricultural Transformation Agency (ATA): mung beans form part of the national strategy for pulses. 	<ul style="list-style-type: none"> – National Agricultural Research System (NARS): network of different research centres and universities with extensive research on soya beans. – Ministry of Agriculture: soybeans are a priority commodity in its national extension. – Agricultural Transformation Agency (ATA): working on a value chain map to link commodities, soya beans included. – Ethiopian Pulse Council: see previous description for mung beans.
<p>Chain Influencers – Private-Sector Organisations</p>		
<ul style="list-style-type: none"> – Ethiopian Pulses, Oilseeds and Spices Processors-Exporters Association (EPOSPEA): it is focused on trade promotion and lobbying for export. Sesame is its main oilseed crop. – Chamber of Commerce: one of the largest chambers in Ethiopia and Africa (over 	<ul style="list-style-type: none"> – Ethiopian Pulses, Oilseeds and Spices Processors-Exporters Association (EPOSPEA): it is focused on trade promotion and lobbying for export. Mung bean is an emerging export pulse. – Chamber of Commerce: one of the largest chambers in 	<ul style="list-style-type: none"> – Ethiopian Pulses, Oilseeds and Spices Processors-Exporters Association (EPOSPEA): it is focused on trade promotion and lobbying for export. Though soya bean is not a major priority of EPOSPEA as an export commodity, there

<p>10,000 members).</p>	<p>Ethiopia and Africa (over 10,000 members).</p> <ul style="list-style-type: none"> - Ethiopian Pulse Council: emerging organisation proposed to serve as registered sector lead organisation in the pulses sector to focus on the parts that EPOSPEA is not addressing; for example, issues of good farming practices, local supply chains and domestic processing. 	<p>has been an increasing interest from China lately.</p> <ul style="list-style-type: none"> - Chamber of Commerce: one of the largest chambers in Ethiopia and Africa (over 10,000 members). - Ethiopian Pulse Council: emerging organisation proposed to serve as registered sector lead organisation in the pulses sector to focus on the parts that EPOSPEA is not addressing; for example, issues of good farming practices, local supply chains and domestic processing.
<p>Financers, Development Organisations and Projects – Chain Supporters</p>		
<ul style="list-style-type: none"> - Financing Organisations (banks and micro finances): all banks are giving export loans, but the interest rate given by the Commercial Bank of Ethiopia (state-owned) is the lowest; i.e. 7.5% compared to 17.5% for the private banks. Availability of finance for production is limited; the Cooperative Bank of Oromia via Agriterra gave some loans. MFIs (Dedebit and Amhara Credit and Saving Institute) have loan products for production, though they charge high interest rates (>20%). - Sesame Business Network (SBN): helps cooperatives in selling to European importers. - 2SCALE: Dutch programme for building agribusiness clusters. - ENTAG: Dutch-funded project for business facilitation, consultancy and capacity development. - Agriterra: involved in cooperative capacity building. - SITA: trade promotion from east Africa to India and rest of the world. 	<ul style="list-style-type: none"> - Financing Organisations (banks and micro finances): all banks are giving export loan, but the interest rate given by the Commercial Bank of Ethiopia (state-owned) is the lowest; i.e. 7.5% compared to 17.5% for the private banks. Availability of finance for production is limited. MFIs (Dedebit and Amhara Credit and Saving Institute) have loan products for production, though they charge high interest rates (>20%). - Emmanuel Development Association (EDA): Ethiopian charity organisation active in helping mung bean producers and promoting local consumption. - Sesame Business Network (SBN): promotion of mung bean as rotational crop for sesame. - SITA: see previous description for sesame. - ENTAG: a project funded by the Embassy of the Kingdom of the Netherlands is currently running a legume business platform that includes mung beans. 	<ul style="list-style-type: none"> - Financing Organisations (banks and micro finances): all banks are giving export loan, but the interest rate given by the Commercial Bank of Ethiopia (state-owned) is the lowest; i.e. 7.5% compared to 17.5% for the private banks. Availability of finance for production is limited. MFIs (Dedebit and Amhara Credit and Saving Institute) have loan products for production, though they charge high interest rates (>20%). - N2Africa: science-based project on nitrogen fixation for legume crops in Africa. - ENTAG: a project funded by the Embassy of the Kingdom of the Netherlands is currently running a soya bean business platform (trading platform). - Clinton Foundation: promote soya beans to smallholder farmers for potential linking with food processors. - Integrated Seed System Development (ISSD): Dutch programme supporting improved soya bean multiplication. - 2SCALE: Dutch programme working with soya bean clusters (1,200 smallholders per cluster).

		<ul style="list-style-type: none"> – Others: CASCAPE (focused on scaling up best practices and funded by Dutch government. It is part of BENEFIT (World Food Programme; buys soya bean for relief programmes, supports farm interventions to promote the crop), Facilitators for Change (local NGO that has been promoting soya bean production and consumption for the last decade) and the Organization for Rehabilitation and Development in Amhara (a local NGO focusing on the Amhara region and working on different value chains for farming, incl. soya bean).
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Regarding the sustainability of the value chain, the main findings by product are listed in Table 11.

Table 11 Key aspects of sustainability in the sesame, mung beans and soya beans value chain

Sesame, sesame oil and tahini	Mung beans	Soya beans
<ul style="list-style-type: none"> – Family labour including children is common, which at times keeps pupils away from school during harvest season. – There is no forced labour use. Children often live according to the demands of the family members. – Family labour is not sufficient for weeding, harvesting and planting activities, so external workers need to be engaged. – The daily wage for labourers varies by place and type of labour (adult labour wage is 100 birr/day in Metekel or 70 birr/day in Metam). This rate is fair compared to the general wages in other sectors such as construction. Children are often paid half of adults. – Value chain is generally dominated by men. – Irrigation is the main water system used. Water wastage is not a major problem. – Large chunk of forest land cleared for sesame farming by investor farmers on land provided by the government (exposing the land to erosion and possible risk of desertification). 	<ul style="list-style-type: none"> – At the farm level, mung bean mostly uses family labour. – Production is predominated by men. – There are few women at the individual or enterprise level on the domestic market. – Child labour can exist, particularly in production. – Children often have an active role in weeding, harvesting and threshing. – Most of the employment terms are seasonal. – The daily wage for harvesting and threshing mung bean by commercial farmers is 85 birr/day. – Most profit goes into the trading stage. – Minimal tillage and fertiliser used. – Mung bean is grown rain-fed. – Currently, there are no inclusive business approaches practised; no contract farming or outgrower schemes. 	<ul style="list-style-type: none"> – There is a presence of child labour on smallholder farms (particularly for weeding, harvesting and threshing). – Farm activities are predominantly handled by men. – Women labour is often oriented to manual cleaning. – No medical coverage and use of protective equipment during farm activities. – Mostly seasonal employment at the farm level. – Average daily wage of 100 birr/day for farm activities. – Land grabbing and villagisation issues (particularly in Benishangul Gumuz and Gambela regions). – Plantations in high-rainfall areas. There is no significant irrigated farming of soy beans. – Weeding, insects and diseases are major problems at the vegetative and flowering stages. – Some use of pesticides and

<ul style="list-style-type: none"> - The residual chemicals in the soil (from herbicides and pesticides) are a major obstacle to organic export. - There are antecedents of attempted outgrower schemes and contract farming, but the results are not a full success as farmers do not want to grow organic sesame, in addition to the problem of side-selling. 		<p>herbicides.</p> <ul style="list-style-type: none"> - No meaningful attempt to engage local communities. - There are antecedents from a few companies for outgrower schemes or contract farming, but the stories were similar to sesame, though the efforts in soya beans were limited.
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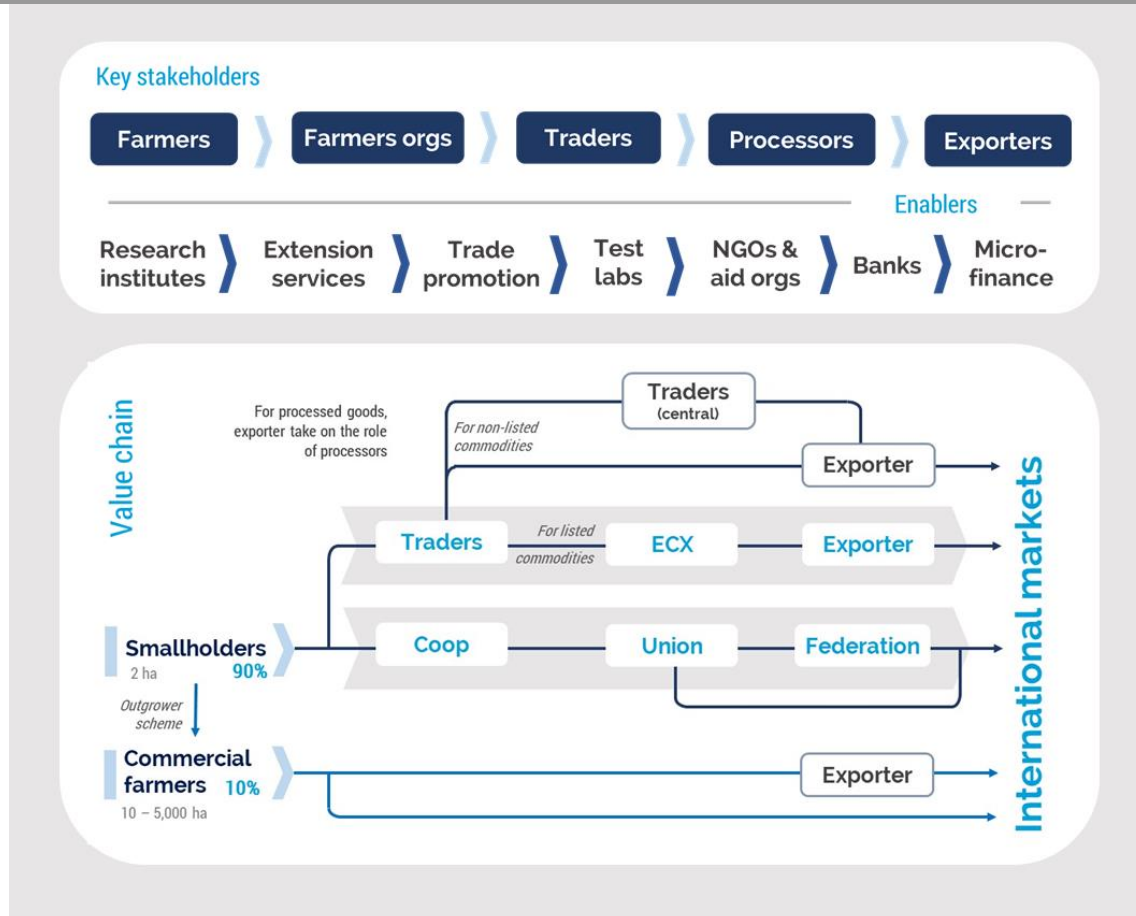


Figure 22 Overview of the value chain for oilseeds and pulses

5.1 Overview

Figure 22 shows an overview of the value chain for oilseeds and pulses. Interviews with stakeholders revealed very few fundamental differences between the chain structures of the different subsectors.

The only fundamental difference between the different value chains is the listing on ECX. With a few exceptions, all materials of listed goods need to be traded through ECX. For the considered list of products, this fact is true only for sesame; however, mung beans were listed briefly in the past and might be listed again, according to information received from stakeholders.

In subsectors not listed on ECX, this functionality is replaced by traders – potentially in several layers. Some exporters have also gained experience with outgrower schemes and therefore buy directly either from farmers or farmer organisations.

Farmer organisations currently have three layers: farmers are organised in cooperatives that are organised in unions, which are again organised in federations. A fourth layer is being discussed. Unions and federations can both export.

5.2 Cross-cutting organisations

5.2.1 Chain supporters

Export financing

Export financing in Ethiopia is done through banks.

The government of Ethiopia gives high priority to export financing. Any exporter that has a contract with an overseas buyer can get loan a from commercial banks. The ease of access to finance is mentioned as one of the reasons for the presence of many exporters. Evidence from some exporters shows that the state-owned Commercial Bank of Ethiopia usually accepts contracts from Chinese buyers and is not interested in financing exports to other countries. However, all the other private banks give loans without restriction. The interest rate at private banks is around 17% as compared to 7.5% at the Commercial Bank of Ethiopia. A number of development partners are working on facilitating access to finance for smallholder farmers. For example, Agriterra facilitated loans via the Cooperative Bank of Oromia to over 3,000 sesame growers in Humera. There is also another example of SNV facilitating insurance for contract farming of chickpeas between ACOS and smallholder farmers in the Awash Melka area.

Production financing

A lack of financing for the production of the three crops in general and sesame in particular has been mentioned as one of the major bottlenecks. While there were some attempts to link the Cooperative Bank of Oromia, the Amhara Credit and Saving Institute as well as Debit Micro Finance, accessibility and affordability are difficult. The interest rates for farmers borrowing from these institutes is over 20%. In some cases, commercial farmers and exporters are pre-financing smallholder farmers, but there are problems with defaults and side-selling. A discussion with some participants noted the possibility of insurance schemes (example from chickpea sector). Currently, however, there is no such scheme in any one of the three sectors.

5.2.2 Chain influencers

Ethiopia Commodity Exchange (ECX)

For an in-depth description and review of the Ethiopia Commodity Exchange (ECX), see (Haile, Volk, and Reherrmann 2017). Please note that this publication, written by the Chief Strategy Officer of ECX in conjunction with researchers from the International Finance Corporation (IFC), offers a much more positive view of the implementation of ECX from what stakeholders report.

According to interviews, ECX was established with the following objectives:

1. avoiding contract defaults between sellers and buyers (i.e. where either party does not respect a previously negotiated contract). As stated above, contract defaults are common in Ethiopia and increase the risk of doing business;
2. improving quality by establishing common norms or grades;
3. shortening the supply chain by removing unnecessary layers of traders.

All stakeholders agreed that these objectives were important. They also agreed that ECX has met the first objective and significantly reduced the number of contract defaults in the value chain. On Objectives 2 and 3, the success is not quite as clear. For Objective 3, there is a need for more infrastructure; with the currently available warehouses, farmers still sell to local traders first, who then sell to ECX.

Most criticism of ECX by stakeholders centred around the quality of materials provided by ECX. Stakeholders report the following points:

- ECX has indeed reduced contract defaults significantly.
- Listing or not listing goods is a political issue; there are no transparent rules when a commodity is listed and some cases of temporary listings have created confusion in the market place.
- Grading at ECX is reported to be inconsistent; corruption of grading personnel was identified as the reason. There is little scientific, documented grading on the basis of objective standards. Specifically for sesame, the all-important type (Humara vs Wollega) is determined on the basis of geography, not the product itself.
- There is no testing beyond physical parameters; as exporters cannot test before buying either, they run the risk of buying goods that are not exportable to the EU because of pesticide residues, salmonella, mycotoxins or similar reasons.
- Traceability is lost at ECX due to mixing (although the same happens at traders delivering to ECX who might repack goods from farmers).
- ECX itself does not influence prices at all; in particular, it does not link to international market prices and does not impose a ceiling¹³.
- Since exporters are forced to buy from ECX, they lose contact with farmers, resulting in a disconnect between the export requirements and production (varieties, standards, quantities, and so on).

Some of these shortcomings, particularly in grading, testing and traceability, directly affect exporters' capability of supplying to the European Union.

Trade promotion for the oilseeds and pulses sector

Trade promotion is headed by the State Minister. The trade promotion department within the Ministry has four Directorates and is responsible for the promotion of all Ethiopian products to international as well as domestic markets. Agricultural products are the most important components with oilseed taking first place, as sesame is on the top list.

A discussion was held with HE Dr Mebratu Meles, State Minister of the Ministry of Trade. The Minister showed that there is sufficient understanding and a sense of urgency to improve the performance of sesame export. He was also quite aware of the situation of sesame production, but less so of soya and mung beans, sesame oil or tahini. The Ministry is currently developing a trade promotion strategy; a first stakeholder workshop was conducted. To date, it has developed promotion brochures for different crops such as sesame, coffee and haricot beans. Discussions with the State Minister also revealed that there is a serious lack of experts within the Ministry, so interventions related to staff capacity building are welcome. Generally, the Ministry is positive about the EU market, but the knowledge of EU standards and requirements is limited. In this regard, one can also note that there might be a gap in the trade promotion strategy currently under development in addressing how to reach the EU market, as expertise is limited. One can note that ENTAG is currently following a food safety trajectory for selected ministries, which includes exposing experts in food safety to the EU standards and regulations as one of the interventions.

Agricultural Transformation Agency (ATA)

The Agricultural Transformation Agency (ATA) is a semi-autonomous unit within the Ministry of Agriculture, established to develop systemic solutions to cross-cutting issues. Among other things, the ATA is responsible for developing the national roadmap strategy for seven pulse crops. Soybean was a priority crop in the strategy for export as well as import substitution of edible oils and cheap protein sources in poultry feed processing. The ATA is also in charge of developing strategies and recommendations for national platform organisations to maximise the impact and speed of the

¹³ Very likely, this policy is intentional.

transformation. The Agricultural Commercialization Clusters (ACC) of the ATA have divided the country into clusters and consider agro-processing facilities within each cluster.

Ministry of Agriculture

The Ministry of Agriculture supports the value chains through a variety of activities: (i) research, in particular into seed materials, (ii) extension services and (iii) agricultural policies. In the context of this analysis, research into better seed materials as well as extension services is very relevant.

5.3 Sesame, sesame oil and tahini

5.3.1 Identification of actors, influencers and supporters

MAINSTREAM ACTORS

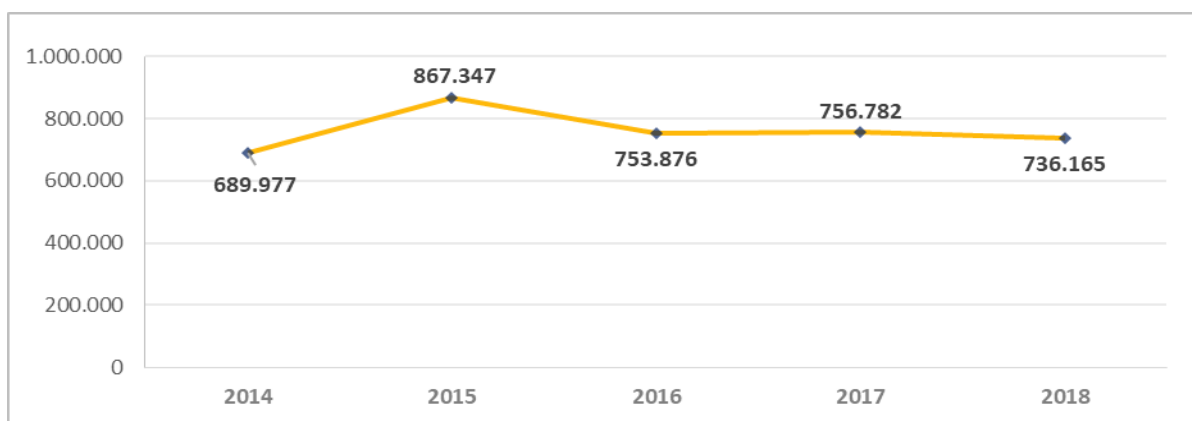


Figure 23 Number of smallholder farmers growing sesame, 2014–2018. Source: Central Statistical Authority (CSA)

Smallholder farmers

Sesame is produced by smallholders and commercial farmers. Different data show different shares of the two groups. According to CSA (see Figure 23), the smallholder farmers account for about 60% of production, whereas a study by ENTAG (2018) reveals the production share of the two groups to be nearly equal. According to CSA data, around 750,000 smallholder farmers were engaged in growing sesame during the last five years. The average yield reported on CSA is much higher (0.65 Mt/ha) than the one that we found during the fact-finding mission (maximum of 0.4 Mt/ha). Numbers of smallholder farmers growing sesame seem to be increasing. The principal reason for the increasing number of farmers is the extension of the crop to new areas. In the major sesame growing belts (Gondar, Metekel and Wellega), evidence shows that more and more smallholders prefer other crops. Smallholder farmers often sell their product to ECX licensed traders, but farmers also have the option of delivering to ECX warehouse if they supply 10 quintals or above. The number of smallholder farmers growing sesame seems to be marginally declining. This trend is mainly to do with the decreasing yield for sesame and the better performance of alternatives.

Commercial farmers

It is to be noted that commercial farmers generally include individuals who own 10 ha or above. Commercial farmers are mostly located in the Metekel, North Gondar (Quara, Metema) and Humera areas. The commercial farmers grow white sesame seed. Although data on the number of commercial farmers engaged in sesame are unavailable, one can estimate that up to 2,000 commercial farmers are engaged in growing sesame on the basis of reports from mission participants.

Collectors and aggregators

On the primary market, only ECX licensed traders can collect sesame. These collectors deliver the sesame to the nearby ECX warehouse. Traders are expected to supply at least 50 quintals at a time. One of the major challenges mentioned about ECX is the long distance from farm to warehouse. Since there are 11 warehouses for sesame in the entire country and farmers cannot travel long distances, the licensed collectors make a significant price differentiation between farmers with close access to a warehouse and those at a distance. Given that only licensed traders can collect the sesame, this situation leaves little option for farmers. Most of the sesame coming to ECX warehouses is collected from the primary market by traders.

Exporters

There are over 1,300 exporters dealing with oilseeds, according to data from the Ministry of Trade. Three important facts can be noted about these exporters: (1) the majority of exporters are not professional exporters who have a sound understanding of the international market or even of the upstream production and sourcing systems, (2) the main driver for the export business is not to make economic profit but to generate FOREX for financing high-margin imports, and (3) although statistics on the annual turnover of companies are hardly available, one can estimate that over 50% of the exporters have an annual turnover of 500 k\$ or less and would qualify as SMEs.

In relation to sesame, there are two types of export: raw and processed. Raw sesame accounts for over 95% of the volume exported. China is the principal destination for raw sesame from Ethiopia. In some cases, Chinese companies form a joint venture or a local agent, which purchases on their behalf during the harvesting season.

Exporting processed sesame is done in the form of hulled sesame and tahini. There are few companies active in hulling: Selet Hulling (organic hulled sesame), Ambasel (hulled sesame and tahini), Agro Prom (hulled sesame), Hajuta Trading (hulled sesame) and Guna Trading (hulled sesame). Most of these companies have a track record of exporting to Europe. Selet Hulling and Agro Prom are exporting organic hulled sesame principally to Europe.

Raw sesame exporters broadly fall into two categories: farmer organisations (unions and commercial farmers) and private businesses. Tsehay, Metema, Selam and Setit Union are farmer organisations actively engaged in the export of sesame seed. There are over 1,000 commercial farmers engaged in sesame production within the west and north-west parts of the country. Whereas most commercial farmers sell the sesame locally to exporters, there are some commercial farmers (e.g. Ethio Agri-CEFT, Ambasel, Khidam and Tracon) who are exporting by themselves. Unions and commercial farmers are allowed to export without trading on the ECX floor. Most private companies are currently exporting sesame in order to gain access to foreign currency. These companies are import trading or manufacturing businesses. They make limited investment in cleaning and do not have a long-term business commitment. The private companies (export businesses) purchase their sesame via the ECX trading platform.

CHAIN INFLUENCERS

Ethiopia Commodity Exchange (ECX)

It is mandatory to trade on the ECX floor, but exceptions are made in the case of commercial farmers and unions who can directly export their own produce. Currently, the bulk of the commodity (over 95%) is exported by buyers on the ECX floor.

All sesame traded on the ECX floor is categorised into two types: Humera and Wollega. The sesame for each type is graded 1–4, depending on the level of admixture, damaged seeds, moisture content and colour. The purchase price of sesame for exports is largely determined by the evenness of colour, taste, dryness and purity. The oil level is mainly important when selling the sesame to the oil industry. There are often complaints by exporters about the way that sesame is categorised and graded at ECX.

National Agricultural Research System (NARS)

The National Agricultural Research System includes agricultural research centres and universities. This institute is engaged in variety development. Currently, the Gondar, Humera and Pawe research centres are actively engaged in sesame variety development.

Ministry of Agriculture and Regional Bureaus of Agriculture

These agencies are responsible for the extension of sesame. They popularise varieties and practices recommended by the research institutes. Bureaus of Agriculture often have a direct influence on farmers' decision about what type of input to use and when to plant. Though sesame extension packages are available in most regions, the Amhara, Oromia, Benishangul Gumuz and Tigray regions are the major growing areas where extension is more active. While Amhara and Tigray are growing the Humera-Gondar type of white sesame, Oromia and Benishangul Gumuz mostly grow the red Wollega type.

National Bank of Ethiopia

The National Bank is responsible for regulations on FOREX utilisation. So far, there has been a strong tendency to push for exports. The government provides various incentives, including (1) full-credit, finance-based export contracts to companies, and (2) flexibility to use own FOREX and keep 30% of FOREX in hard currency for an indefinite period. Exceptions are exports via commercial banks, where the allocation of FOREX is prioritised. Given that FOREX is the major driver for export, national bank policies and regulations have a significant direct impact on export performance.

Ministry of Trade

The Ministry of Trade is responsible for monitoring export performance and supporting companies in market development. International Trade Promotion is headed by a State Minister. The Ministry of Trade sits on the board of ECX. It also has a significant say in national bank policies towards exporters.

Other stakeholders

This category includes Ethiopian shipping and logistics for handling freight. The Customs Authority is responsible for clearing and inspecting cargo. A major gap in logistics is the high cost of export (USD 2,200 per 20-ft container) for transport, port handling and clearing.

PRIVATE-SECTOR ORGANISATIONS – CHAIN INFLUENCERS

Ethiopian Pulses, Oilseeds and Spices Processors-Exporters Association (EPOSPEA)

EPOSPEA is the most active private-sector organisation directly engaged in the promotion of pulses and oilseeds export. The association has 226 active members, most of them dealing with both pulses and oilseeds.

EPOSPEA aims to contribute to a conducive environment for smooth export performance through advocacy, empowering members to make informed decisions by supplying market intelligence, and facilitating international opportunities for its members by participating in or arranging trade fairs, forums and business trips. Sesame is the most important oilseed crop for EPOSPEA.

Currently, the most pressing issues in relation to sesame for EPOSPEA are:

1. increase in domestic price that is crowding out the most serious exporters and leading to a loss of international competitiveness;
2. irregularities in grading at ECX warehouses;
3. stagnant or declining yield trends resulting in low supply.

In order to address these issues, EPOSPEA works closely with the Ministries of Trade and Agriculture as a representative of the private sector. The association provides input to the national export council headed by the Prime Minister. EPOSPEA is lobbying the Ministry of Trade to introduce more stringent requirements for export competence so only qualified business can engage.

Three important points could be noted about EPOSPEA. First, the association has a tendency of focusing more on trade promotion and lobbying for export facilitation, whereas the principal problems of the sesame sector currently seem to be in production, aggregation and grading. Second, though most of the serious exporters are members of ECX, it seems that the non-members are significantly influencing the current domestic price which does not seem sustainable compared to the international market. Finally, while EPOSPEA as an association is considered relatively strong, its level of influence in resolving practical export blocks and building the capacity of its members could still be greatly improved.

Addis Ababa Chamber of Commerce and Sector Association (AACCSA)

This chamber, which has more than 10,000 members, is one of the largest and oldest chambers in Ethiopia and Africa. Some of its stated services are promoting trade and industry, disseminating business information, advising the government and its members on economic development and business issues, establishing friendly relationships with similar chambers and engaging in arbitration during disputes among its members. The chamber organises a number of domestic and overseas trade fairs and bazars. As compared to EPOSPEA, AACCSA has a very credible track record of successful lobbying, marketing and service delivery on behalf of its members. In addition, AACCSA has been organising agri-fairs on an annual basis for the last five years. Conversely, AACCSA has limited experience with agriculture in general and sesame in particular.

INTERNATIONAL ORGANISATIONS AND PROJECTS – CHAIN SUPPORTERS

Sesame Business Network (SBN)

This project is funded by the Dutch Ministry of Foreign Affairs but channelled through the Embassy of the Kingdom of the Netherlands. It is active in the Gondar and West Tigray areas (Metema, Quara and Humera). The project supports smallholder farmers to improve yields by facilitating access to best practices, technologies and finance. SBN works with research organisations and Bureaus of Agriculture for variety development and extension, respectively. The project has been active in the area for the last seven years. There are mixed views about the results achieved by SBN. On the one hand, the intervention is focused and appreciated by the government bodies; on the other hand, its actual impact in raising the commercial level is questioned by some interviewees. Some of the private companies which we interviewed noted that the project tends to focus on research and testing rather than commercialisation. However, most of the public partners (including the Ministry of Agriculture) consider SBN to have a positive impact and appreciate its focus.

Toward Sustainable Clusters in Agribusiness through Learning in Entrepreneurship (2SCALE)

2SCALE is another programme funded by the Dutch Ministry of Foreign Affairs through the Directorate-General for International Cooperation (DGIS). The programme is distinctively known for building agribusiness clusters around a champion or change agent. The first phase was implemented by the International Fertilizer Development Centre (IFDC), BoP Innovation Centre and ICRA. 2SCALE has secured a second-phase grant from DGIS and will have edible oil in its assortment, mainly through Tsehay Union. In the second phase, SNV will be a co-lead partner together with IFDC. Pulses and oilseeds are among the priority sectors in the second phase. The first phase of 2SCALE has registered notable results such as linking sorghum farmers in Metema to Diago (annual supply of 3,000 Mt and new beer product development), linking soybean growers to domestic processors, developing micro-franchise models for distribution, and so on. The 2SCALE model seems to be more business-oriented and commercial as compared to many interventions.

Ethiopia-Netherlands Trade for Agricultural Growth (ENTAG)

This project is funded by the Dutch Embassy in Addis Ababa. ENTAG focuses on four sectors: legumes, poultry, aquaculture and spices. The programme has several thematic intervention areas, including:

1. facilitate business platforms in each sector for networking and dialogue on key sector issues;
2. organise trade fairs for market linkage;
3. provide hands-on advisory services to companies;

4. profile business opportunities for local and international investors aiming at those sectors;
5. develop the capacities of sector organisations.

Although ENTAG will phase out in 2019, it might be extended for a second phase. The sector assortments are flexible, depending on the Ethiopian-Dutch interests. The business platform and trade fairs of ENTAG have been very successful in promoting trade relationship as well as addressing sectorial issues that need a higher level of intervention.

Agriterra

Agriterra has been actively involved in capacity building of cooperatives. Cooperatives and unions are its major channels of intervention. Within these channels, the major interventions of Agriterra include, but are not limited to:

1. improving the business and organisation capacities of unions as well as cooperatives via coaching and training;
2. facilitating market linkage locally and internationally;
3. supporting cooperatives to access finance.

In relation to sesame, Agriterra has linked over 2,500 farmers to financing through its latest C4C programme (jointly executed with SNV). Currently, it is also promoting cooperative exports to the EU and other markets. A successful case to hand is Wedera Union (major production area for mung, white pea and faba bean), which recently exported to the EU with the support of Agriterra.

Supporting Indian Trade to Africa (SITA)

This programme is funded by UKAID to promote trade between east Africa and India. It is implemented by the International Trade Center (ITC), focusing on the promotion of pulses, spices and oilseeds exports. It also works to attract Indian investment to east Africa, mainly in the leather and textile sector. Though the priority is India, the programme is sufficiently flexible to link east African businesses to Europe and other regions. Export market linkage, investment promotion and local capacity building are some of the priorities of ITC-SITA.

5.3.2 Sustainability of the sesame value chain

Working conditions

The majority of people engaged in the sesame value chain are labourers. Typical working arrangements are based on verbal agreements between employers and employees. As discussed below, while employers provide daily wages, basic food and shelter for farm labour, processing labourers during aggregation and export are paid wages only. Sesame farms are located in the lowland area, where temperatures can exceed 45 °C. Generally, people are allowed to rest when the daily temperature is too high, but they are not provided any package that can help to resist the heat.

Child labour

Sesame has a short planting and harvesting window. Most farmers plant within a span of 2–3 weeks, which results in a critical shortage of labour for planting, weeding and harvesting. Smallholder farmers use all family labour, including children, for these critical activities. Commercial farmers generally use hired adult labour, but when there is a shortage, they may accept people from the age of 12. In most of the cases, children working on a family plot do not drop out of school (supply labour after school), but there are also times when the children completely drop out of school for a while.

Most of the aggregators and processors use adult labour. As some of the processes such as bulking require strong physical fitness, they are fully dominated by men. People engaged in bulking and transport are unskilled labourers. At the factory level, workers can be skilled, semi-skilled or unskilled. The payment for unskilled workers is often based on quantity. The average payment is usually close to the standard wage of 80–100 birr. Except in high-standard factories that are HACCP certified, the use of protective and safety equipment during bulking and processing hardly exists.

Wages and forced labour

The daily wage for farm labourers varies by place and type of labour. Whereas adult labour wage costs are 100 birr/day in Metekel, that rate goes down to 70 birr/day in the Metam area. As stated above, child labour is not common at commercial farms; hired children (12–15 years) are usually paid half of adults. The farm often provides basic food and shelter, as labourers come from other areas. The daily wage paid by the farms is almost equal to other sectors such as construction. There is no medical scheme or a signed agreement between the farms and the labourers.

Labour migration

Over 90% of the labour for sesame farm activities comes from the highland areas. Though there are occasionally internal conflicts for different reasons such as work competition, there have not been major problems between migrating labourers and local communities. Given the shortage of labour on the farming sites, migrating labourers do not compete with locals.

Water and land issues

As almost all Ethiopian sesame is grown without irrigation, water wastage is not a major problem. However, one can note that a large chunk of forest land is cleared for sesame farming by commercial farmers in most of the sesame areas (Metekel, Gambela and Gondar). This situation has significantly exposed the land to erosion and a possible risk of desertification. There are also rumours of land grabbing in Gambela and Benishangul Gumuz, while there are ethnic issues in Humera (particularly in the Welkait area), with claims of mass settlement from other parts of the country and distortion of the indigenous population. However, it is to be noted that such claims are often subjective and the story depends on to whom we are talking.

Pesticides and herbicides

The use of chemicals has been reported as a serious concern for Ethiopian sesame exporters, particularly those dealing with organic sesame. Currently, farmers are growing sesame in rotation with sorghum and maize. Though there is limited application of chemicals to sesame, sorghum and maize demand a significant application of herbicides and pesticides. The residual chemicals in the soil have been mentioned as a major obstacle to the organic export of sesame. In this regard, Selet Hulling has been struggling to secure the organic volume that it seeks. Though sesame is usually sold within a short period of time after harvest, it is susceptible to post-harvest losses.

Gender in the sesame chain

Whereas women are involved in the planting, weeding and threshing of sesame at the smallholders' level, over 95% of the labour force is male in the case of commercial farmers. Collection and aggregation are mostly done by men due to the physical nature of the job. However, women participate actively at the export level to a very small extent and in the processing of domestic food ingredients (cleaning, packing, roasting and grinding of sesame) to a large extent. The selling of sesame at the farm level is often done by men.

Inclusiveness

There have been several attempts at outgrower schemes and contract farming in the sesame sector. Selet Hulling and Agro Prom adopted outgrower models from the start, but the companies went through a difficult period implementing these schemes. In order to set up the outgrower scheme, Ethiopian law required companies to have their own nucleus farm. Some companies kept a distant, inaccessible plot for the sake of legitimacy so as to engage in outgrower schemes. In relation to contract farming, there was no binding legal framework for contract farming. Companies could sign agreements with farmer organisations, but the enforcement of such agreements is weak. From a community perspective, one of the major challenges is the low productivity of sesame and a tendency of switching to other crops such as sorghum, which not only gives a higher yield but also has a versatile use as a food and cash crop. Though many companies are sourcing sesame from the Gondar and Metekel areas, investment of sourcing companies in corporate social responsibility is limited.

5.4 Mung beans

5.4.1 Identification of actors, influencers and supporters

MAINSTREAM ACTORS

Smallholder farmers

The number of smallholder farmers growing mung bean rose about sixfold over the last five years; see Figure 24. Mung bean is grown with very small amounts of input; farmers do not use fertiliser, while chemicals and land preparation are minimal. This fact contributed to a promising international market for the last five years, mainly India, making mung bean one of the emerging crops in Ethiopia.

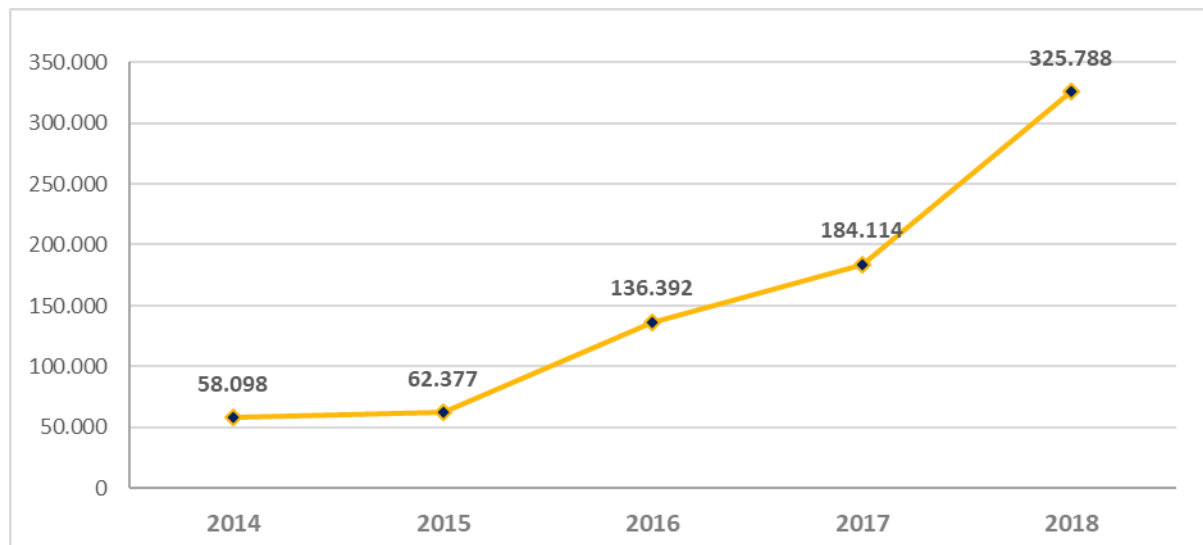


Figure 24 Number of smallholder farmers growing mung bean, 2014–2018. Source: Central Statistical Authority (CSA)

Commercial farmers

Most of the commercial farmers are located in Gambela, Benishangul Gumuz and western Amhara. Data for production by commercial farmers do not exist. Commercial farmers such as Saudi Star, Tracon or S & P have been planting mung bean recently. The crop has also been adopted by farmers in the Humera and Metema areas as a rotational crop for sesame. There are over 1,000 commercial farmers in these areas, with an average holding of 200 ha. In the past, most of these commercial farmers were focusing on cotton and sesame, the former for the emerging domestic textile industry and the latter as an important export commodity. They have recently switched to beans, mainly soya and mung bean, for three reasons:

1. international market price for mung bean;
2. lower production costs of both soybean and mung bean;
3. valuable impact on soil fertility.

Local traders and aggregators

The local aggregators and collectors bulk and sell the beans to traders in Addis Ababa or other major regional cities. In a few cases, these local traders supply to exporters directly. As farmers often produce mung beans in small quantities, collection is very difficult. A typical collector on the primary market can gather 3–5 Mt per day. Most collectors supply to regional wholesalers; a few send the beans directly to customers in Addis Ababa for the grain trade. During the peak marketing window of November–January, there are 10–15 collectors per market day on a typical primary market such as Shewa Robit. Almost all the mung bean is sold within a month of harvesting. Unlike other products, mung bean traders do not stock for long in speculation of price increases, mainly because the crop is vulnerable to weevil attacks. Traders and aggregators have strong negotiation power over farmers, particularly in areas where there are no active cooperatives engaged in the purchasing of mung bean.

Unions and cooperatives

Wedera Union in Debre Berhan, as well as Tsehay and Setit Union in Gondar and Humera, are involved in purchasing mung beans for export. However, it can be noted that the majority of the production (about 90%) is taken by private traders. Unions collect the beans through their primary cooperatives. These three unions have an established track record in export; Wedera (white pea bean to Europe), Tsehay and Setit (sesame to Asia). Beyond making money by marketing the mung beans, unions and cooperatives also normalise markets by creating a competitive channel for collectors or aggregators. Tsehay and Setit Union are in a sesame growing area, while mung bean is emerging as a rotational crop.

Traders in Addis Ababa and other major cities

These traders collect the beans from each side of the country and deliver mostly to exporters. Most of the traders are stationed at the Mesalemia Grain Trade Center (the largest national trade centre for grain). The traders in Addis Ababa are well connected to exporters and other local buyers in processing and semi-processing (only done in small quantities). This group of actors are the most influential in making price decisions across the chain. They are well linked to local traders and aggregators all over the country, while they also have information about the export demand to some extent. The traders in Addis Ababa often serve as channels without handling the product themselves; i.e. the product is often loaded from the premises of the aggregator and delivered to the exporter.

Exporters

Mung bean has recently emerged as a major export commodity. Ethiopia exported a total 180,060 Mt of mung bean over the last three years. Vietnam, India and the UAE are the three major import destinations of Ethiopian mung beans. There are hundreds of business exporting mung beans, but MS Processing based in Kombolcha, Zablom and Ambasel are the major players.

In 2015, Ethiopia exported 600 Mt to EU countries, mostly the Netherlands (384 Mt). However, there has been no export to EU countries since then. The table below shows the value of imports by EU countries for that specific year. The average price was 1,230 \$/Mt, about 30% higher than the price to the rest of the world. Ethiopian mung bean is considered good quality, with a shiny green colour and a reasonable size. Table 12 summarises mung bean exports from Ethiopia to different countries, including the price per Mt. The average price was 940 \$/Mt.

Table 12 Price and volume of mung bean exports from Ethiopia

Destination	Volume (Mt)	Value (\$)	Price (\$/Mt)
Vietnam	29,976,124	26,439,813	882.03
Indonesia	24,769,452	24,469,021	987.87
India	2,529,627	2,815,149	1,112.87
Malaysia	1,578,667	1,650,589	1,045.56
United Arab Emirates	634,400	567,713	894.88
Thailand	105,333	107,323	1,018.89
Iraq	80,000	91,000	1,137.50
Singapore	80,000	89,704	1,121.30
Pakistan	96,000	85,680	892.50
Philippines	75,667	72,772	961.75
Turkey	40,000	36,000	900.00
Korea, Republic of	26,667	22,400	840.00
Bangladesh	16,000	10,880	680.00
Kuwait	8,000	10,400	1,300.00
Czech Republic	4,167	5,083	1,220.00

Table 13 Exports of mung beans to selected European countries in 2015

Destination	Volume (Mt)	Value (\$)	Price (\$/Mt)
Netherlands	384,000	476,280	1,240.31
Norway	120,000	140,400	1,170.00
Germany	72,000	89,280	1,240.00
Italy	24,050	30,843	1,282.45

India, Myanmar, China and Australia are the top 4 producers of mung bean in the world, accounting for 81% of the global export market. At the same time, India is also the leading consumer and is therefore still heavily dependent on imports (mainly from Myanmar, but increasingly from other countries as well). In Africa, Kenya and Tanzania are the leading exporters. Given that most of the mung bean producers are developing countries, combined with Ethiopia’s proximity to Europe and the Middle East, there is a sound business case for exporting mung beans to the EU market. One must note that mung bean is highly vulnerable to infestation and is only available for a short window.

CHAIN INFLUENCERS – PUBLIC SECTOR

Ethiopia Commodity Exchange (ECX)

Mung bean was brought to the ECX floor for six months in 2017, but it was later withdrawn. The ECX contract for mung bean classifies the bean into two varieties by production area: Green Mung Bean Shoa and Green Mung Bean Assosa. Aggregators and central traders often buy on behalf of exporters. The central traders and aggregators have their agents on the primary market.

National Agricultural Research System (NARS)

The NARS is in charge of innovating technologies that contribute to yield increase. Included in the NARS are federal and regional research institutes as well as universities. Among other things, the NARS is responsible for variety development, breeding, adaptation and trials, supporting pre-scaling or early upscaling initiatives, providing technical backstopping, training and advisory services. Debre Berhan Agricultural Research Institute is the centre of excellence for mung bean research. However, Assosa, Gondar and Humera research centres has also been involved recently.

Ministry of Agriculture

As for other crops, the Ministry of Agriculture is responsible for extension services and marketing. The Ministry is responsible for scaling up and commercialising new technologies that come through the research pipeline or other proven sources. It is also responsible for promoting best agronomic practices, as well as the marketing and household utilisation of agricultural products. However, as it stands, mung bean is not part of the extension package of the Ministry. Nonetheless, the zonal and regional agricultural bureaus where the crop is grown often give basic extension as and when needed by the farmers.

Agricultural Transformation Agency (ATA)

In partnership with the Ministry of Agriculture, ATA recently developed a national strategy for seven pulse crops. Mung bean is included in the national strategy for the first time. The national strategy’s priority pulses are:

1. Soya bean
2. Field pea
3. Lentil
4. Chickpea
5. Common bean
6. Faba bean
7. Mung bean

The national pulse strategy document highlighted seven pressing issues for the Ethiopian pulses sector in general, including a lack of value addition, poor extension, declining yields and poor branding on the international market. This strategy aims to increase the annual production of mung bean by 35% over the next five years by promoting the crop in new areas.

Ethiopian Pulse Council

The idea of the Ethiopian Pulse Council is still in its infancy. Pulse Ethiopia (PE) has been proposed to serve as a registered apex organisation, embracing all pulse chain actors. The council will catalyse the utilisation of the sector potential, provide coordinated leadership to the sector and realise mutual benefit for the sector actors. The objectives of the Ethiopian Pulse Council as stated in the draft document are to:

1. coordinate the legumes value chain;
2. synergise development efforts of all partners in the pulses sector with the sector for food and nutrition security, as well as income at all levels;
3. oversee the entire chain performance, identify systemic bottlenecks, strategise towards its potential and execute actions;
4. organise regular PPP platforms that are contextual to the current situation in the sector.

CHAIN SUPPORTERS – DEVELOPMENT ORGANISATIONS AND PROJECTS

Sesame Business Network (SBN)

SBN is currently promoting mung bean as an important rotational crop for sesame. As stated in previous sections, the current soil fertility in traditional sesame growing areas is depleting and hence sesame yields have been low. Promoting mung bean is currently aimed mainly at farmers who grow organic sesame. However, it can be noted that the economics of mung bean at the current market prices seem more competitive than sesame, while there is a stronger tendency towards substitution than rotation.

Emmanuel Development Association

This local NGO is mostly active in eastern Amhara, the principal production belt for mung bean. The association is promoting the production and marketing of mung bean in this area. Its major focus is:

1. training in and demonstration of best practices;
2. promoting improved varieties;
3. closely working with Bureaus of Agriculture and research centre for wide-scale extension.

Other organisations

SITA (see above for details).

5.4.2 Sustainability of the mung value chain

Working conditions

There are no special working terms and conditions in the mung bean chain that differ from other agricultural value chains. Smallholder farmers mostly use family labour, whereas commercial farmers use hired labour. The labour hired by commercial farmers does not involve formal contracts or written agreements. Salaries are paid on a weekly or bi-weekly basis. Given that commercial farmers are located in remote areas, the businesses provide food and shelter at a basic level. There are piece rates for some activities such as weeding and harvesting, but the piece rates are calculated on the basis of an average daily rate of 85 birr. There is no medical coverage or use of protective equipment during farm activities.

Child labour

The major labour utilisation within the value chain is at the farm level for land preparation, planting, weeding, harvesting and threshing. Mung bean is grown during both the *belg* (brief rainy season) and the *meher* (major rainy season). The crop is currently common in eastern Amhara valleys which have relatively little rainfall. The labour needed for weeding and land preparation is not high compared to other crops. Farmers often plant mung bean with minimal tillage or use of fertiliser.

Similar to the sesame value chain, child labour is used as part of the family labour by smallholder farmers. However, the fact that mung bean is less sensitive to weeding and shattering means that the urgency of labour is less and hence children attending school often supply labour after class. Commercial farmers use hired labour, whereas child labour is rare. The daily wage for the harvesting and threshing of mung bean by commercial farmers is 85 birr/day.

An in-depth study was carried out in nine districts in the North Shewa Zone (M. Ahmed, Siraj, and Mohammed 2017) on the basis of 1,350 interviews with both new and seasoned producers of mung beans. This study indicated that mung bean production is predominantly male-oriented, with 93.2% of households being headed by relatively young men (21–40), a majority having no further education. About half of the respondents had 3–7 years of experience with mung beans, while about 40% were new to the crop.

Water resources

Mung bean is rain-fed and highly drought-resistant. In most parts of eastern Amhara, the crop is grown during the brief rainy season. By its very nature, mung bean requires less rainfall. Heavy rainfall results in increased vegetative growth with reduced pod setting and development. Mung beans will give reasonable yields with as little as 650 mm of annual rainfall. In Benishangul and western Amhara, high rainfall is occasionally a problem for growers. However, Assosa research centre has recently released varieties suitable for higher rainfall.

Pesticides and herbicides

Smallholder farmers do not use chemicals for the production of mung bean. The crop is less vulnerable to farm pests and weeds. Chemicals are used the most at the post-harvest level. As mung bean can easily be attacked by weevils, farmers fumigate the crop. Some farmers might use restricted chemicals and overdoses. Although commercial farmers use chemicals, it was noted that the crop by nature requires less compared to sesame.

Gender in the mung bean chain

Women's involvement in the value chain for mung beans is mostly part of family labour. Commercial farmers are located in remote areas, so farm labour is mostly male. Marketing of smaller quantities (less than 25 kg) is often done by women. Other than farming, there is an increasing number of enterprises with women involved in cleaning, packing and distributing mung bean to high-end markets. The crop has a niche market for diabetic people and there has been increasing penetration recently. This crop is currently gaining in popularity on the domestic market as a healthy food, particularly for diabetic people. The major supplier to the supermarkets in the country is Baltina, which is mostly owned and operated by women. Women working in the cleaning and packing process mostly work at a piece rate. The piece rate is determined by the wage of the alternative jobs.

Inclusiveness

Currently, there are no inclusive business approaches practised: no contract farming or outgrower schemes. The traditional growing area for mung bean in Ethiopia has had the lowest food security, while average holdings are highly fragmented. As a result, having investors engage in outgrower schemes and even contract farming (unless via unions) is difficult. However, in the north-west and western parts of the country, such arrangements should be viable.

Land issues

The smallholder farmers have indefinite right to use their land; i.e. they have a licence to use and pass on their land to the next generation but not to sell or lease it for a longer period. In the case of large-scale commercial farmers (Benishangul Gumuz and Gambela), the story is similar to soybean. Most of the community feels that the growers grabbed their land and the locals have been staunchly pushed aside by the government as anti-development when they echo their concerns. As stated in the soybean value chain, most of the farmers also did not do enough to build sustainable relationships with the community.

Supporting commercial growers in developing inclusive businesses and corporate social responsibilities could normalise this relationship. The issue of land grabbing and villagisation has attracted a lot of attention from the international community. With recent political changes in Ethiopia, one can note that there are some risks of or possible protests against those farms, particularly if the productivity level and the local impact of such farmers is low. Building a business relationship between commercial farmers and smallholders around them would normalise that relationship. Although this model can work in North Gondar and Metekel, where the neighbouring farmers are settled agrarians, there are no settled smallholder farmers in Gambela around most of the commercial farmers.

5.5 Soya beans

5.5.1 Identification of actors, influencers and supporters

MAINSTREAM ACTORS

Smallholder farmers

These farmers grow soybean primarily as a cash and rotational crop. However, there is also a potential for the household-level utilisation of products such as soya milk, bread and porridge, although this use is not very popular. Smallholder farmers account for 50% of the national soybean production. The CSA data show that smallholder farmers produce over 80,000 Mt. Farmers sell their produce in villages and nearby towns within a traveling distance ranging between ten minutes to the nearest village and a maximum of four hours to a nearby town. In most of the areas, there are no unions or cooperatives actively engaged in the soybean trade. The soybean market was highly unstable over the last decade. Prices vary greatly on the international market. For example, this year's soybean market has done well, fetching up to 1,400 birr/100 kg. This fact is mainly due to the growing demand from China following an increasing trade war with the USA. The Chinese have made a plan to import at least 100,000 Mt of soybean from Ethiopia each year. Smallholder farmers have limited influence on soybean prices, though a study conducted by IVCD (2014) indicated that farmers get about 80% of the value traded on the central market.

Commercial farms

Unlike many crops in Ethiopia, there are a number of large-scale commercial farmers engaged in the production of soybean. Soybean is grown as a main and rotational crop for sesame, cotton or maize. These commercial farmers, who account for over 50% of the national production, are mostly located in the Metekel, Gondar and Gambela areas. There are over 150 commercial farmers in Metekel alone, with average holdings over 50 hectares, whereas there are over 700 commercial farmers in Gondar as well as in Quara and Metema. Some of the large international companies such as Saudi Star, Ethio Agri-CEFT, S & P and Ruchi Soya have over 10,000 hectares of land. The state-owned Ethiopian Sugar Corporation, which runs nine sugarcane plantations, manages over 500,000 hectares of land where soybean is used as an intercrop or a rotational crop. The availability of commercial farms makes it easier to produce large volumes from a small number of sources. Soybean as a rotational crop to sesame is of high importance to farmers in the north and north-west part of the country, where soil fertility is a serious problem.

Ethiopian Sugar Corporation

Ethiopian Sugar Corporation is a state enterprise engaged in the manufacturing of sugar. The corporation grows sugarcane on over 500,000 ha of land in different parts of the country, namely Wonji, Fincha and Metehara, Tendaho, Arjo Dedesa, Kesem, Beles, Omo-Kuraz and Wolkayit. Most of these plantations are under development and will operate at full scale in 3–4 years' time. In order to maintain soil fertility and address shortages of edible oils, the corporation is growing soybean as an intercrop or a rotational crop. This production season, 2,550 ha (550 ha at Fincha and 2,000 ha at Beles) are planned for soybean production. Whereas the Sugar Corporation is partly exporting and

partly supplying to domestic food processors at the moment, it has plans to set up factories for feed and edible oils to use soybean in future. Though the initial aim was to set up factories for edible oils alongside the sugar factories, the government has recently opted to leave the production of edible oils to private companies, instead assisting them through a sustainable supply of soybeans.

Collectors and aggregators

These parties buy the crop from the farmer and transport the commodity to the collecting wholesalers in the nearest town. On a single market, there could be up to ten local traders collecting soybean from farmers. These collectors are often not specialised in soybean only. The average daily purchase by such traders during peak season can reach up to 5 Mt. It is to be noted that the collectors are active mainly during the harvesting season. The collectors are often price-makers, as they have better information about the central market and sometimes purchase on behalf of major wholesalers at the regional level. Unlike sesame, soybean prices have little transparency and farmers often accept the price given by the collectors.

Regional aggregators and central traders

Regional wholesalers buy the commodity from the collector/trader and then bulk the soya into suitably large loads to meet the requirement of the wholesalers based in Addis Ababa. Regional wholesalers usually deal in multiple commodities and have the capacity to hold about 100 tonnes per enterprise. These people often bulk and speculate on the price. They have customers in the Addis Ababa Grain Trade Center. In some cases, regional traders supply to food processors and exporters directly. The central traders are the ones based in Addis Ababa. This group is often the price-maker for all upstream actors. The central wholesalers supply to processors and exporters.

Exporters

Although data on the number of soybean exporters are not available, discussions with interviewees and previous studies by IVCD (2013) indicated that most of the commodity is exported by commercial farmers. The most notable exporters of soybean are Ethio Agri-CEFT, S & P, Ruchi Soya and MS Processing. Smallholder farmers often sell to the local market, which serves the food and feed industry. However, soybean exports in 2017 surged significantly and were sourced from the local market. While exports of soybean from Ethiopia had been limited to a range of 2,000–3000 Mt per year, it grew over tenfold last year, resulting in an overall export of 27,500 Mt. Whole soybean exports account for over 90%, while the remainder is soybean cake. China, Indonesia and Vietnam are the highest-volume recipients of Ethiopian soybean. As Ethiopian soybean is organic and GMO-free, it can fetch a high price from health-conscious, high-income consumers in the EU and the USA.

CHAIN INFLUENCERS – PUBLIC SECTOR

National Agricultural Research System (NARS)

Pawe Agricultural Research Center is the centre of excellence for soybean. Assosa, Bako, Hawassa, Adet and Jimma agricultural research centres have extensive research activities on soybean. In addition, public universities such as Jimma, Assosa, Injibara, Gondar and Wollega have programmes related to soybean research.

Ministry of Agriculture and Regional Bureaus

Soybean has recently been included as a priority commodity by the Ministry of Agriculture. Though the product is not part of the national extension package, there is a strong impetus on the Ministry to put soybean in its national extension priorities, for three reasons:

1. There is increasing market demand on the domestic and export market (mainly China).
2. The crop has a positive impact on soil fertility.
3. Soybean is a versatile crop with a profound impact on households' nutritional status.

Agricultural Transformation Agency (ATA)

ATA is currently developing a value chain map for linking commodities to agro-industrial parks. Soybean is included as one of the value chains at Bure Agro-Industrial Park. In the national pulse strategy developed recently, soybean is one of the priority pulses. The strategy identifies soybean as having high economic potential, though current production coverage is small.

CHAIN INFLUENCERS – PRIVATE SECTOR**Ethiopian Pulse Council**

The idea of the Ethiopian Pulse Council is still in its infancy. Pulse Ethiopia (PE) has been proposed to serve as a registered apex organisation, embracing all pulse chain actors. The council will catalyse the utilisation of the sector potential, provide coordinated leadership to the sector and realise mutual benefit for the sector actors. The objectives of the Ethiopian Pulse Council as stated in the draft document are to:

1. coordinate the legumes value chain;
2. synergise development efforts of all partners in the pulse sectors with the sector for food and nutrition security, as well as income at all levels;
3. oversee the entire chain performance, identify systemic bottlenecks, strategise towards its potential and execute actions;
4. organise regular PPP platforms that are contextual to the current situation in the sector.

CHAIN SUPPORTERS – DEVELOPMENT ORGANISATIONS AND PROJECTS**N2Africa**

N2Africa is a science-based “research-in-development” project focused on putting nitrogen fixation to work for smallholder farmers growing legume crops in Africa. Funded by the Bill and Melinda Gates Foundation, it operates in nine countries within Africa, five of which — Ethiopia, Nigeria, Tanzania, Ghana and Uganda — are the core countries. N2Africa has prioritised five legume crops for its interventions in Ethiopia: faba bean, common bean (haricot bean), chickpea, groundnut and soybean. The project envisions building sustainable, long-term partnerships in order to enable African smallholder farmers to benefit from symbiotic nitrogen fixation by grain legumes through effective production technologies, including inoculants and fertilisers. Achieving the genetic potential of “improved” varieties requires careful attention to crop management— which includes rhizobial inoculants and balanced fertilisation in the case of legumes.

Ethiopia-Netherlands Trade for Agricultural Growth (ENTAG)

This programme is currently organising a soybean business platform for producers, processors and exporters. While four platforms were organised with the intention to facilitate trade relationship among actors, the platform is currently on hold due to a lack of produce to trade. ENTAG is now more active in linking buyers and producers.

Clinton Foundation

The Clinton Foundation mostly operates in the Oromia region. It is promoting soybean to smallholder farmers for potential linkage to nutritious food processing plants. The Clinton Foundation works with cooperative unions; its package includes supplying yields, rhizobia, agronomic services and post-harvest technologies.

Integrated Seed System Development (ISSD)

ISSD is a programme funded by the Dutch DGIS. The programme is currently supporting the multiplication of improved soybean seed through cooperatives and commercial seed businesses. ISSD is active in the Oromia, Amhara, SNNPR and Tigray regions, where it mostly works through universities and research institutes.

IFDC-2SCALE

This programme has been actively engaged in the soybean value chain. The programme has been working with three clusters that have 1,200 smallholders each. These soybean clusters have been linked to a food processing company (the champion).

Others

A number of other organisations, including CASCAPE (funded by DGIS via EKN and focused on scaling up best agricultural practices in all sectors – sesame, soybean and mung bean), World Food Programme (part of its Humanitarian Purchase and supportive of the soybean value chain), Facilitators For Change (a local NGO working on the promotion of soybean production and market linkage for the last ten years) and the Organization for Rehabilitation and Development in Amhara (funded by different donors and supporting mung bean, soybean as well as sesame production by facilitating access to improved seed and finance), are involved in the soybean value chain as promoters and chain facilitators.

5.5.2 Sustainability of the soya value chain**Working conditions**

Employment at the farm level is mostly seasonal, whereas a permanent or temporary job is seen as the norm in export processing and domestic food or feed processing. People working at the farm or factory rarely use protective equipment. Though most of the processing companies understand the need for uniformity, practices are not usually adhered to for a lack of compliance culture, even when the company has the facilities available.

Traders and factories often use women for manual cleaning. However, manual cleaning of soybean is not popular. Labourers' incentives are often based on quantity and estimations are based on the minimum volume of work that a person can accomplish. Soybean is an important input for the feed and food industry. Currently, the estimated number of people working in the feed and food sector can be around 20,000. Most of the people are working in the FAMEX and CSB sectors, where WFP and the government are the major buyers. While employees working in companies supplying to the humanitarian sector are paid a better package, the rest are given a standard salary package.

Child labour

Soybean farming is similar to mung bean, where the urgency of farm activities does not require children to drop out of school. Commercial farmers use hired labour. Salary and wage structures for the soybean value chain are close to that of sesame. The average daily wage for farm activities is 100 birr/day. A major difference is in harvesting and threshing, where the soybean wage goes down by 10–15% compared to sesame. Farm labourers are provided with basic food and shelter. There is no formal contract or medical and insurance provision, which is also the case for the other value chains.

Land issue

The issue of land grabbing and villagisation has attracted a lot of attention from the international community. Most of the commercial soybean growers (particularly those in the Benishangul Gumuz and Gambela regions, including the state-owned sugar plantations) can easily be targeted in this way. Moreover, the farms do not have a profound, harmonious relationship with the local communities. This fact is partly because the farms cleared the forest, which is seen as an important local resource, but another important factor is that many of these farms do not pay attention to local development.

Water

Soybean is grown in high-rainfall areas in the western and north-western parts of the country. There is no significant irrigation in soybean farming.

Pesticides and herbicides

There is some use of pesticides and herbicides. Smallholder farmers sometimes use inappropriate doses and chemicals for treating farm and storage pests. Commercial farmers have better awareness of and access to the right chemicals.

Gender inclusiveness

The upstream part of the soybean value chain (production, bulking and trading) is mostly dominated by men. However, women are active in exports, local processing and packaging in the food and feed industry, as well as in cleaning for the export sector.

Inclusive farming

There is no meaningful attempt to engage local communities. Some food processing companies (Gust Agro Industry) tried to engage in contract farming with cooperatives, but the cooperatives could not cope with the company's requirements for product quality. Few other companies are aiming for outgrower schemes or contract farming. Given the prospect of a high export demand for soybean due to the increasing demand from China, companies might show a more proactive interest to work with the local community.

Section 6

Identification and analysis of obstacles and opportunities in the value chains

Summary

This section aims to identify the key competitive advantages and growth opportunities for Ethiopian exports of oilseeds and pulses to the European market, as well as the main obstacles that hamper the Ethiopian export sector.

The identification of opportunities, obstacles and possible solutions was carried out through in-depth interviews and interactive exercises with exporters, producers, farmers and trade organisations, as well as other stakeholders.

On the basis of this interaction, the following aspects were identified as the main cross-cutting issues in the Ethiopian oilseeds and pulses sector:

- limited viability of exports to the EU due to low yield and vicious FOREX cycle;
- perception of Ethiopia in terms of its food security and reputation as an exporter;
- lack of reliable quality infrastructure and management;
- reliability of contracts;
- lack of export business knowledge.

In spite of these difficulties, Ethiopian exporters are enthusiastic about trading with Europe. Key opportunities for Ethiopia on the European market are seen to be:

- long-lasting relationships;
- quality orientation;
- premium prices;
- market for value-added products.

A range of possible solutions to the main obstacles are identified in this section, related to the following.

- **Training and capacity building:** marketing and business development, contract administration, European rules and regulations.
- **Productivity:** mainly through outgrower schemes.
- **Increased stability of trade relations:** through “partnering” or even joint ventures with European counterparts.
- **Certification:** technical and financial support.
- **Testing capacity:** through training and introduction of rapid test kits.
- **Market linkage:** through matchmaking, trade missions and similar tools.

6.1 Methodology for identification of obstacles and opportunities

In August 2018, a number of exporters, producers, farmers and trade organisations were interviewed in-depth to identify the obstacles and opportunities of the oilseeds and pulses sector in Ethiopia.

In addition, a first stakeholder day was organised in Addis Ababa, where stakeholders mainly active in the export and production sector were asked to identify obstacles and opportunities; see Figure 25. This exercise was carried out for the five initially chosen commodities (sesame, kidney beans, chickpeas, mung beans and niger seeds) plus two value-added products (sesame oil and niger oil). As a result of the mission, the focus was shifted to the commodities sesame, organic mung beans and soya beans in addition to the value-added products sesame oil and tahini.

In September 2018, a second day of workshops was organised in Addis Ababa and Gondar so as to discuss possible solutions to the main obstacles. The underlying analysis was applied to the reviewed product range.

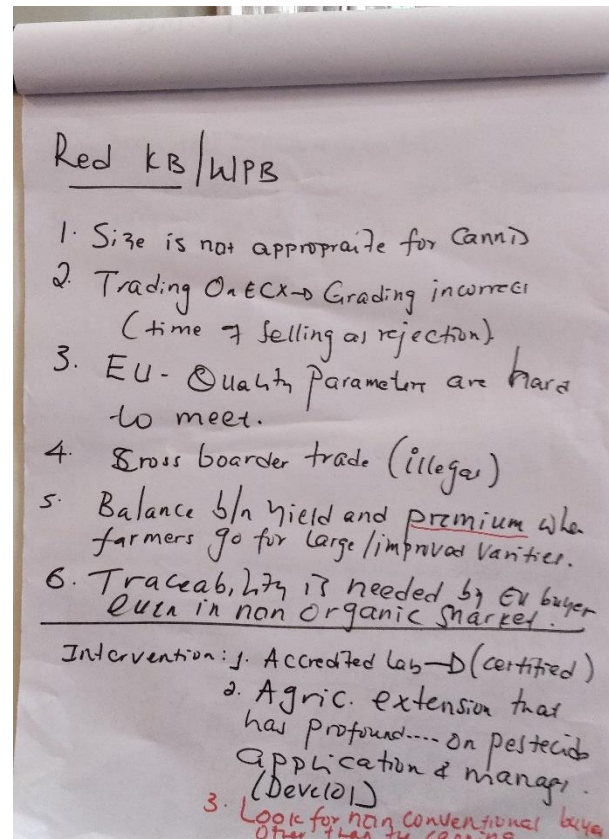


Figure 25 Results from the stakeholder consultation

6.2 Cross-cutting issues

Figure 26 shows some cross-cutting issues in the Ethiopian export sector for oilseeds and pulses, as identified via in-depth interviews and on the stakeholder day.

In the current short-term environment of Ethiopia's oilseeds and pulses exports, as explained above in Section 4.2.1, the question is whether an increase in exports to the European Union is viable. There is no obvious answer to this question – especially for sesame – given the low productivity of the sector and the vicious FOREX cycle.

From the stakeholder interviews, it became clear that dedicated exporters have a desire of exporting to the European Union, because it provides them with a premium as well as long-term relationships. A number also mentioned that Europe will allow them to focus on quality production. Not all types of companies in Europe incentivise quality, however. One exporter complained that his excellent quality was not rewarded by European traders – most likely, a direct link to processors as opposed to traders would provide that direct link between quality and reward.

Another cross-cutting issue in the sector is the lack of access to seed material in demand on the European market. This fact is especially true for chickpeas and kidney beans, among other things. The reason is perhaps not so much access to the seeds themselves – according to stakeholders, Ethiopia has excellent research centres in seed material – but rather the disconnect between production and the requirements of exporters to the EU. This disconnect is in some cases due to ECX, which separates exporters from production/early trading stages. In other cases, the underlying reason is

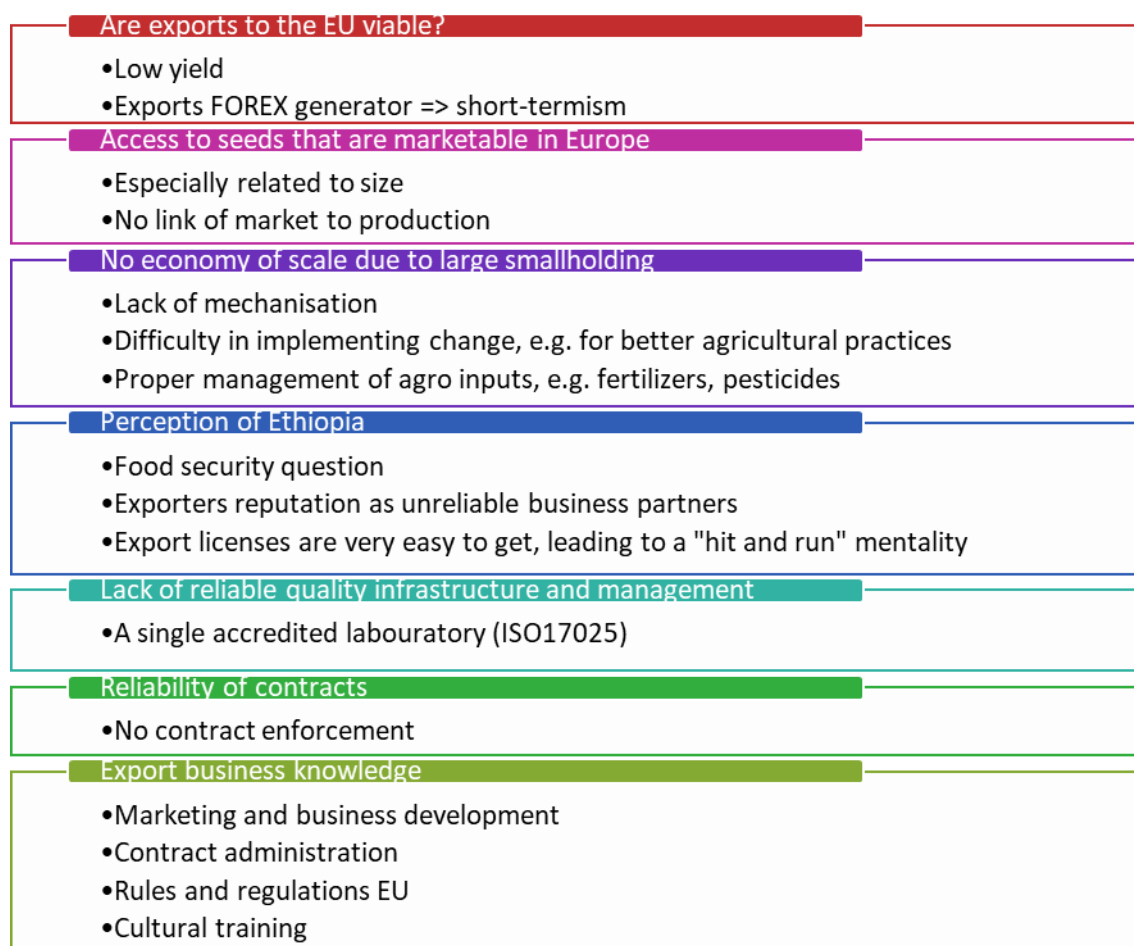


Figure 26 Cross-cutting issues in the export sector for oilseeds and pulses

that European consumers prefer other varieties than Ethiopian consumers (and farmers, who partly eat their crops). Since the internal consumption is high and Asian markets exist for the varieties grown in Ethiopia, there is little concern of farmers in this regard.

The lower level of productivity is another concern of exporters, as it drives up prices up and makes them less competitive on international markets. This fact is mainly due to a lack of mechanisation and a lack of professional farmers trained in Good Agricultural Practices. Many farmers, for example, still plant by broadcasting and not by rows. In addition to the lower yield that this process achieves, post-harvest losses due to improper storage and handling are also quite high.

Some exporters reported that Ethiopia has a mixed reputation as a country of origin for raw materials. For one, some European importers seem to think that they should not buy from Ethiopia so as not to compromise food security. This statement could not be verified in interviews with European importers, though. For another, contracts seem to have a relative value in Ethiopia and are seldom enforced. As a result, exporters defaulted in the past and gained a reputation for being unreliable.

Opportunities for oilseeds exports in Ethiopia are not fully exploited yet because of inefficient marketing, insufficient knowledge of the export market requirements, insufficient knowledge of oilseed composition, improper cleaning and at times poor contract discipline (Wijnands, Biersteker, and Van Loo 2009).

As in the case of oilseeds, the pulses sector faces a set of constraints that are directly or indirectly holding it back from reaching its full potential. These constraints are mainly related to production (limited quality of pulses, limited use of quality inputs, limited value addition) as well as intermediation or development issues: supply issues (limited alignment of goods with international demand, limited capacities for sector coordination), business environment constraints (weak institutional capacities, weak quality management infrastructure, poor contract enforcement, expensive and unreliable transport network), market entry constraints (limited access and use of trade intelligence, limited branding and sales capacity, limited trade promotion capacities, limited incentives to export), and socioeconomic and developmental constraints (gender-specific challenges, limited entrance of youths into the sector, environmental harm, potential violations of indigenous rights) (ITC 2016).

Quality and safety are not a major concern in Ethiopian value chains. There is a lack of not only quality control but also autochthonous quality infrastructure (standards, metrology, conformity assessment bodies, accredited laboratories). As there is only one ISO 17025 accredited laboratory in Ethiopia, European importers or their surveyors test raw materials in Europe, which is quite expensive. According to one exporter, the cost of analysis could easily be 1% of the value of goods; on a commodity market, this figure represents a significant cost.

In the interviews, exporters projected an image of professionalism and demonstrated general knowledge of the simple technical requirements of their target markets.

However, several agreed that the general knowledge in export business matters is not high. Another area where exporters felt that capacity building was required is the area of “cultural” training.

As pointed out above, most exporters still in business are not specialist exporters of agricultural goods and food products but rather importers needing access to FOREX.

However, even the professional agri-food exporters still existing have very little ambition beyond raw materials. Sporadic evidence was found in the in-depth interview about plans to add some value beyond cleaning, but the economics are currently unfavourable due to the high cost of machinery.

Most exporters were quite clear about the technical specifications required on the market, but these specifications were very simplistic (purity, grain size/type) and not nearly as elaborate as some private and public standards; see [Appendix IV](#).

6.3 Exporting to Europe

As we have pointed out before, Europe remains a benchmark in export destinations. Although almost none of the exporters that were part of the in-depth interviews and the stakeholder day actively export to the EU, most of them declared that they would like to do so in future.

Table 14 Stakeholder views of the European as a trade partner

Obstacles	Opportunities
Bad for short-term sales Stringent quality and safety control Required traceability (ECX?) Lack of trust	Long-lasting relationships Quality-oriented Price premium Market for value-added products

It is especially the specialist exporters (as opposed to the import-export organisations that use exports only as a FOREX generator) that appreciate the EU as an export destination for the long-lasting relationships and the price premium, but also because it offers an opportunity to improve the quality of production in the value chain.

Many exporters have found it difficult to meet importer demands, especially for certification such as ISO 22000 or HACCP. Companies do exist that have these certifications (and more), but the general lack of quality control makes them difficult to achieve.

6.4 Product-specific obstacles and opportunities

6.4.1 Sesame

Obstacles	Opportunities
<p>Insufficient productivity Lack of hulling capacity Local prices exceeding international market prices No testing for pesticide residues Cross-contamination due to rotational crops for organic sesame Lack of market linkage for conventional sesame No proper management of quality and food safety Issues with sesame going through ECX</p> <ul style="list-style-type: none"> - Lack of traceability - Lack of scientific grading - No testing for pesticides, salmonella or aflatoxins - Classification linked to origin, not variety <p>Vacant land owned by investors and used as collateral rather than farming; as a result, the government projection of 400,000 Mt production is not realised (current level 250,000 Mt) Salmonella detected in some shipments Serious problem of shattering, leading to about 50% losses in the harvest of sesame. It also makes mechanical harvesting much more difficult. A US company, SESACO, has developed a patented non-shattering variety but provides it only to its own contract farmers</p>	<p>High demand e.g. in Europe, especially in organic seed Good price compared to other crops Potential for value addition:</p> <ul style="list-style-type: none"> • Sesame oil • Tahini

6.4.2 Mung beans

Obstacles	Opportunities
<p>No local consumption, which makes smallholders reluctant to grow mung beans Ethiopia not known internationally as a producer Confusion on market with temporary ECX listing Lack of market linkage Some pests (such as weevils) present in Ethiopia Lack of seed uniformity Moisture levels, especially in rainy season Relatively short shelf life in need of better</p>	<p>Cash crop Good yield in some areas (2 Mt/ha) Good quality from Ethiopia; apt for sprouting, which commands price premiums Low management on field required Main competitor Myanmar, with similar issues in quality and safety Potential as rotational crop for sesame Relatively easy to grow organically</p>

storage technology Lack of extension services for mung beans	Backward integration to help increase competitiveness Stimulation of local consumption
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Comments

- The comment on shelf life could not be corroborated; stored properly, dry mung beans should last about eight years¹⁴.

6.4.3 Soya beans

Obstacles	Opportunities
Lack of seed uniformity (lower growing seeds mature before those growing higher up) Organic soya beans hard to grow Ethiopia not known as a producer Tough competition with USA and Brazil as main exporters to EU Yield 30% lower than competitors High internal demand for vegetable oils and animal feed ¹⁵	High demand on international markets Value addition: - Oil - Meal - Cake Ethiopia guaranteed GMO-free Good rotational crop for conventional sesame Soya beans one of the most important commodities traded worldwide. The same is true for their derivatives soybean oil, meal and cake Ethiopia GMO-free, which might provide it with a competitive advantage, as confirmed by interviews with European importers. Guaranteed GMO-free soya beans fetch a premium of 0–150 \$/Mt

6.4.4 Sesame oil

Obstacles	Opportunities
Filtration systems expensive and access to finance difficult Little knowledge of EU market Lack of market linkage Expensive machinery Few professional organisations that could potentially export; most are small, local operations Most producers not compliant with EU standards (ISO 22000, HACCP, GMP+)	High profit margins, especially for socially marketed oil Opportunities on the EU luxury market Sesame cake as a high-value by-product; oilcakes in great local demand Joint venture with European company interesting option for marketing and higher margins

6.4.5 Tahini

Obstacles	Opportunities
Limited knowledge of tahini production, in particular with respect to recipes Lack of economy of scale and high input prices leading to high product price	Growing market in the EU, particularly the United Kingdom and Greece Excellent quality of raw material in Ethiopia Organic tahini available in Ethiopia

¹⁴ <https://www.usaemergencysupply.com/information-center/self-reliance/storage-life-of-dry-foods>

¹⁵ This fact must be considered an obstacle to increasing exports to the EU; consumers are keen on switching to soybean oil, especially since it can be offered at a better price than imported vegetable oils.

6.5 Possible solutions to obstacles

Table 15 Summary of the most important obstacles and possible solutions

#	Description	Where in the VC?	Possible solution	Possible partners for solutions
Obstacles				
1	Low productivity, especially in sesame	Primary production	Mechanisation Irrigation Agricultural inputs (fertiliser, pesticides) Good Agricultural Practices Specific solution for the “shattering” problem where sesame seeds fall off the stem easily, resulting in about 50% yield losses Soil depletion to be addressed with a rotational crop, especially one which binds nitrogen, such as mung beans	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA
2	Proper management of agricultural inputs (fertilisers, pesticides)	Primary production	Outgrower schemes with clear instructions, training and distribution of correct agricultural inputs Training in integrated pest management (IPM)	2SCALE, ENTAG, SBN, MoA, EDA, NARS, ATA
3	Distortion of prices	Internal trade	FOREX access to be improved through better currency manipulation	NBE, ITC, BENEFIT, ENTAG, ATA, MoT, ECX
4	Access to finance for processing	Processing	Joint ventures with European companies Specific support programmes facilitating access to finance Support in searching for investment	NBE, ENTAG, ITC, IPD, MoT, EPOSPEA
5	Certification, in particular ISO 22000	Processing	Technical support programmes to assist in certification Financial support for certification	ENTAG, ITC, EPOSPEA, EPC
6	Marketing/branding	International trade	Capacity building activities Coaching of individual, highly motivated companies	ENTAG, ITC, EPOSPEA, EPC, MoT
7	Lack of understanding of business culture and communication with EU counterparts	International trade	Cultural training Capacity building in communication skills	ITC, ENTAG
8	Lack of market knowledge and linkage	International trade	Matchmaking Trade missions Fair participation Price monitor, i.e. providing updated information on market prices and price trends	ITC, ENTAG, EPOSPEA, MoT
9	Lack of trade promotion leading to Ethiopia not being known as a source of e.g.	International trade	Development of trade promotion strategy Trade missions	ITC, MoT, ENTAG, EPOSPEA

	mung and soya beans		Fair participation	
10	Lack of testing capacity	Support	Capacity building for private laboratories, in particular for ISO 17025 accreditation Specific support programmes to build public or private testing capacity in rural areas Introduction of rapid test equipment in rural areas	ENTAG, EPOSPEA
11	Lack of “patient” importers	International trade	Identification of importers, ideally processors, who are willing to develop their supply chain and support it with access to knowledge, technology as well as finance	ITC, ENTAG, EPOSPEA, MoT
Opportunities				
12	Exporting to Europe seen as a goal	International trade	Ethiopian exporters appreciate the European market because of long-lasting relationships, quality orientation, price premiums and the market for value-added products	ENTAG, ITC, IPD, MoT
13	Good demand from Europe	International trade	For all selected products, there is good demand from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
14	High profit margins for value-added products	International trade	Especially for sesame oil and tahini, profit margins are very good	IPD, ITC, ENTAG, EPOSPEA, MoT
15	Product differentiation	International trade	For some products (mung beans for sprouting, sesame, GMO-free soybeans, tahini) there is a clear differentiation from existing products	IPD, ITC, ENTAG, EPOSPEA, MoT
16	Organic sesame to fetch good price	International trade	Currently, the demand far outweighs the supply of organic sesame; it is also not listed on ECX and therefore not subject to market distortions. A good price is paid for organic sesame in Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Market requirement largely known	International trade	Exporters have knowledge of and to some extent experience in meeting market requirements from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Joint ventures	Processing	There is an opportunity for joint ventures, especially in the sesame trade and value-added products	ENTAG, ITC, EPOSPEA
18	Rotational crops (mung/soya beans for sesame)	Primary production	Rotational crops can counteract nutritional depletion of fields	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA

summarises what the stakeholders and the assessment consider the most relevant issues for the selected products.

Table 15 Summary of the most important obstacles and possible solutions

#	Description	Where in the VC?	Possible solution	Possible partners for solutions
Obstacles				
1	Low productivity, especially in sesame	Primary production	Mechanisation Irrigation Agricultural inputs (fertiliser, pesticides) Good Agricultural Practices Specific solution for the “shattering” problem where sesame seeds fall off the stem easily, resulting in about 50% yield losses Soil depletion to be addressed with a rotational crop, especially one which binds nitrogen, such as mung beans	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA
2	Proper management of agricultural inputs (fertilisers, pesticides)	Primary production	Outgrower schemes with clear instructions, training and distribution of correct agricultural inputs Training in integrated pest management (IPM) ¹⁶	2SCALE, ENTAG, SBN, MoA, EDA, NARS, ATA
3	Distortion of prices	Internal trade	FOREX access to be improved through better currency manipulation	NBE, ITC, BENEFIT, ENTAG, ATA, MoT, ECX
4	Access to finance for processing	Processing	Joint ventures with European companies Specific support programmes facilitating access to finance Support in searching for investment	NBE, ENTAG, ITC, IPD, MoT, EPOSPEA
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7	Lack of understanding of business culture and communication with EU counterparts	International trade	Cultural training Capacity building in communication skills	ITC, ENTAG
8	Lack of market knowledge and linkage	International trade	Matchmaking Trade missions Fair participation Price monitor, i.e. providing updated information on market prices and price trends	ITC, ENTAG, EPOSPEA, MoT
9	Lack of trade promotion leading to	International trade	Development of trade promotion strategy	ITC, MoT, ENTAG, EPOSPEA

¹⁶ IPM is a holistic approach to pest management, which uses different tools in order to avoid and treat infestation; agro-chemicals are only one tool in the toolbox of IPM.
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	Ethiopia not being known as a source of e.g. mung and soya beans		Trade missions Fair participation	
10	Lack of testing capacity	Support	Capacity building for private laboratories, in particular for ISO 17025 accreditation Specific support programmes to build public or private testing capacity in rural areas Introduction of rapid test equipment in rural areas ¹⁷	ENTAG, EPOSPEA
11	Lack of “patient” importers	International trade	Identification of importers, ideally processors, who are willing to develop their supply chain and support it with access to knowledge, technology as well as finance	ITC, ENTAG, EPOSPEA, MoT
Opportunities				
12	Exporting to Europe seen as a goal	International trade	Ethiopian exporters appreciate the European market because of long-lasting relationships, quality orientation, price premiums and the market for value-added products	ENTAG, ITC, IPD, MoT
13	Good demand from Europe	International trade	For all selected products, there is good demand from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
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18	Rotational crops (mung/soya beans for sesame)	Primary production	Rotational crops can counteract nutritional depletion of fields	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA

¹⁷ Rapid test kits are equipment for fast testing that is typically used upon receiving agricultural materials. These rapid test kits are available for a large variety of pesticides and mycotoxins. Although they are not a replacement for a full analysis, they can serve to reduce the risk for the agricultural chain already at the earliest stages.

Section 7

Possible interventions and support activities in the value chains

Economic conundrum has to be solved

- Productivity improvements (improved seeds, agricultural practices, mechanisation)
- Support for exporting farmers (to shorten chain and avoid ECX) or backward integration
- Value-add production

-Certification

- Without certification market access in Europe is quite limited
- Most important HACCP, GMP] and/or ISO22000
- Training in organic standards for producers to avoid cross contamination

-Market linkage

- Ethiopian exporters need partners not traders
- Opportunities of engagement of European firm (e.g. through JV) should be sought

-Trade promotion

- Currently there is no trade promotion strategy, public or private
- Ethiopia needs to be put on the map for the value chains considered
- Strategy development should be supported

-Improvements of ECX

- Fundamental flaws of ECX must be addressed
- Traceability
- Testing
- Science-based grading

Figure 27 Key components of a successful intervention as identified with stakeholders

Summary

This section provides an analysis and identification of the possible interventions and support actions in the export value chain for the key opportunities and obstacles identified in the previous section.

The identification of possible interventions and their components was made in cooperation with Ethiopian stakeholders.

A set of key components were defined for successful and sustainable interventions. These components can be categorised as follows (see also Figure 27).

- The economic conundrum has to be solved, potentially through productivity improvement, support for exporting farmers and manufacturing of value-added products.
- Certification: there is a need to increase relevant certifications, particularly HACCP, GMP or ISO 22000, and training in Organic certification.
- Market linkage.
- Trade promotion: public trade promotion needs to be supported by international trade specialists and private promotion activities.
- Improvement to ECX in terms of traceability, testing and scientific grading.

Among the potential areas identified for intervention are the following.

- Production: productivity pre- and post-harvest, improvement to ECX, value-added production.
- Trade: preparation for the market, market linkage.
- Coordination of the value chain.
- Services with activities that facilitate market access and competitiveness.

Potentially promising products for further CBI projects are:

- organic sesame in rotation with organic mung beans;
- conventional sesame in rotation with conventional soya beans;
- socially responsible sesame oil for the luxury market;
- organic tahini.

Although there is good potential for a CBI intervention, some risks have to be considered, such as the economic conundrum, lack of exporters focusing on the EU market, lack of interest from importers and volatility on the international market.

7.1 Preconditions for successful interventions

In the conversations with stakeholders, a few elements emerged that are common to all value chains under consideration. We believe that these key components need to be considered and hopefully addressed in an intervention so as to guarantee its success and sustainable impact.

The economic conundrum has to be solved

First of all, the basic economics of the value chain need to be addressed. Especially in sesame, these economics are heavily distorted, most likely leading to a “boom and bust” behaviour which makes investment in these value chains very risky.

The fundamental issue is of course access to FOREX and the use of the largest agricultural export article as a dollar earner by importers. This issue is very difficult to address in any kind of outside intervention, although we would certainly welcome a review of the impact of the currency devaluation by international experts in macroeconomics together with their Ethiopian counterparts. An internship or exchange programme for future leaders in the Ethiopian Central Bank at its European counterpart could certainly be of interest as well.

In the absence of such a component, the economic conundrum needs to be solved in a different way.

Three possible areas come to mind for solving the economic conundrum.

- **Significant increase in yield:** the principal reason for high prices is not the desire of importers/exporters to lose money but the lack of productivity in the farming sector. Since the land ownership situation is very difficult to solve, driving up the yield is probably the measure of choice. This change requires mechanisation and training in Good Agricultural Practices, as well as investment in organic or conventional agricultural inputs. Although expected yield increases differ by commodity, increases of 100–200% should be achievable.
- **Shortening of the value chain:** additional layers of traders naturally add to prices overheating. Although farmers are well aware of ECX prices and expect traders to take about a 15% cut (according to information from stakeholders), shortening the chain would make a difference. An especially interesting approach is that of large commercial farmers (who hold a land lease of 10–5,000 ha) in combination with an outgrower scheme for smallholders (Felgenhauer and Wolter 2009). The vicinity of the value chain steps (as both are farming operations) together with the fact that commercial farmers in Ethiopia are allowed to export directly without the involvement of ECX will increase quality and reduce prices. Outgrower

schemes have not been fully successful in Ethiopia, but all stakeholders consulted put this fact down to not having found the right “package” (e.g. premiums, insurance, extension services, access to agricultural inputs, and so on)¹⁸.

- **Moving up the value chain through higher-value products:** a parallel valid strategy is to move up the value chain and offer value-added products to the market. Certification adds about 10–15% to the international market price (in particular Organic), but higher-processed products such as sesame oil can command much higher prices, especially if branded.

The number of companies with relevant certifications needs to be increased

The second-most important obstacle to market linkage would be certification, especially in HACCP, GMP or ideally ISO 22000. Many European importers see this certification as a minimum requirement and exporters have reported that this aspect is often their main obstacle to the European market.

In the area of Organic certification, it should also be considered that most farmers do not really understand or subscribe to organic production – it is just that they happen to grow most crops in a way compatible with Organic certification. This situation leads to cross-contamination with rotational crops when they need pesticides, such as sorghum. Sensitisation and capacity building could help to increase the supply of e.g. organic sesame, for which the demand far exceeds the supply.

Linkage to partners in Europe is important

Most Ethiopian exporters who participated in this study could benefit from linkage to companies in Europe that are willing to work with their supply chain. As traders are often not in this category, direct market linkage to processors will be a clear advantage. The purpose of such a relationship is “training” in European business culture and standard compliance, support on the certification path as well as assistance in terms of investment in machinery.

Trade promotion needs to be ramped up

In order to find such partners, trade promotion is necessary. Ethiopia is known for sesame but not as a producer of soya and mung beans, sesame oil or tahini. A public trade promotion strategy is currently absent; this strategy could be supported by international trade specialists. In addition, private trade promotion activities could be envisioned, especially in conjunction with the sector association EPOSPEA.

A review of some aspects of ECX could be important

Finally, value chain partners have mentioned time and time again that ECX has some fundamental flaws. While ECX has been very successful in avoiding contract defaults between exporters and farmers/traders, some aspects of its operation make it very difficult to use in the European export value chain:

1. There is no traceability through ECX. We were unable to investigate whether this fact is really an ECX issue or an issue of local traders repacking before selling to ECX, but there is certainly no traceability requirement of material traded through ECX.
2. Material delivered to ECX is only tested on physical parameters; no testing is done for pesticide residues, aflatoxins or microbiological contaminations. As buyers are not allowed to analyse samples before buying either, they purchase blindly. For European value chains, this process greatly increases the risk for exporters, to the point of making it unfeasible.

¹⁸ It should also be mentioned, however, that there is little evidence of a strict contract culture in Ethiopia. Defaults are common – one of the reasons why ECX was launched in the first place.

- There is a lack of scientific grading. Exporters have complained about the variability of grading and pointed towards corruption as a possible source. Scientific grading standards need to be revised, while their results should be recorded and made available to exporters.

A review of the operation of ECX by international experts could help to solve these issues in conjunction. Similar commodity exchanges have been developed in Africa. However, they have faced problems (e.g. insufficient trade volumes, limited functions), which have led to a limited success in their functioning. Some examples are the Kenyan Agricultural Commodity Exchange (KACE), the Uganda Commodity Exchange (UCE) and the African Commodity Exchange (ACE) (Kawuma 2015).

According to (Rashid 2015) and the analysis of viability conditions such as regulatory effectiveness, contract conditions, commodity conditions and other enabling conditions, two examples of successful commodity exchanges are the Brazilian Mercantile & Futures Exchange (BM&F) and the Chicago Board of Trade (CBOT). Consultations based on the operation of these commodity exchanges

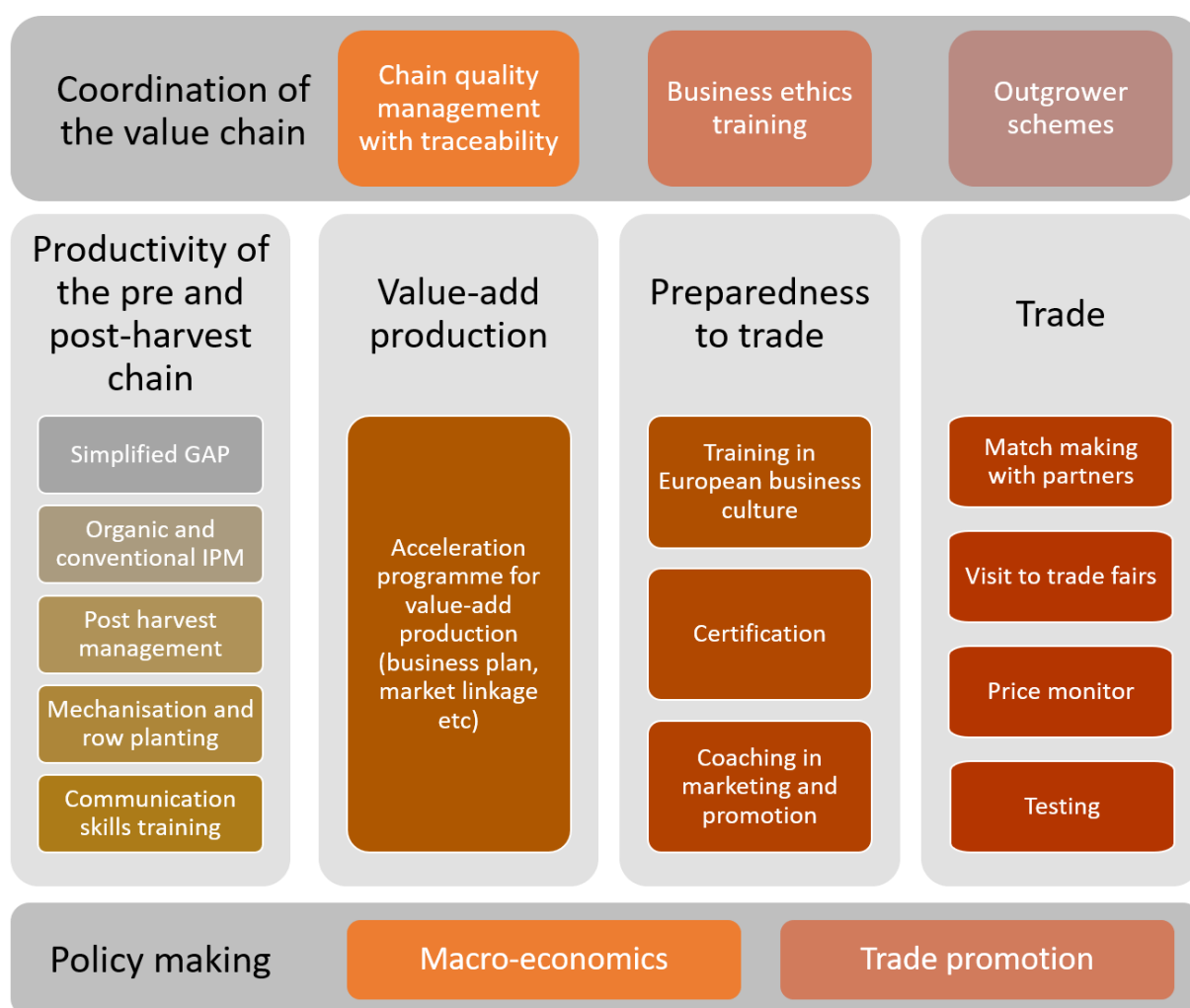


Figure 28 Summary of identified interventions grouped into different streams

and the interventions of international experts could help to improve the operation of ECX.

7.2 Interventions and support activities

The Federal Ministries of Agriculture and Trade, in conjunction with the Ethiopian Institute of Agricultural Research and the Ethiopian Transformation Agency, have developed a strategic document that lists possible intervention areas (Federal Ministry of Agriculture et al. 2015). Also

warranting consideration is the quite extensive Value Chain Roadmap for Pulses 2016-2020, written by ITC in collaboration with the Ministry of Trade (Akele et al. 2016). The below analysis is based, however, on stakeholder interactions and a selection of areas that lie within the focus of CBI or that are necessary to achieve CBI’s goals of increased trade volumes from Ethiopia to the EU, an increase in jobs within export value chains and value chain partners trained in corporate social responsibility.

Figure 28 summarises the identified intervention areas that we have established in order to deal with the main shortcomings of the five targeted value chains. The interventions can be grouped into the following areas:

- production (from farm to final product)
 - o productivity pre- and post-harvest;
 - o value-added production;
- trade
 - o preparedness to trade;
 - o trade;
- coordination of the value chain with activities that range from farm to import;
- policy support.

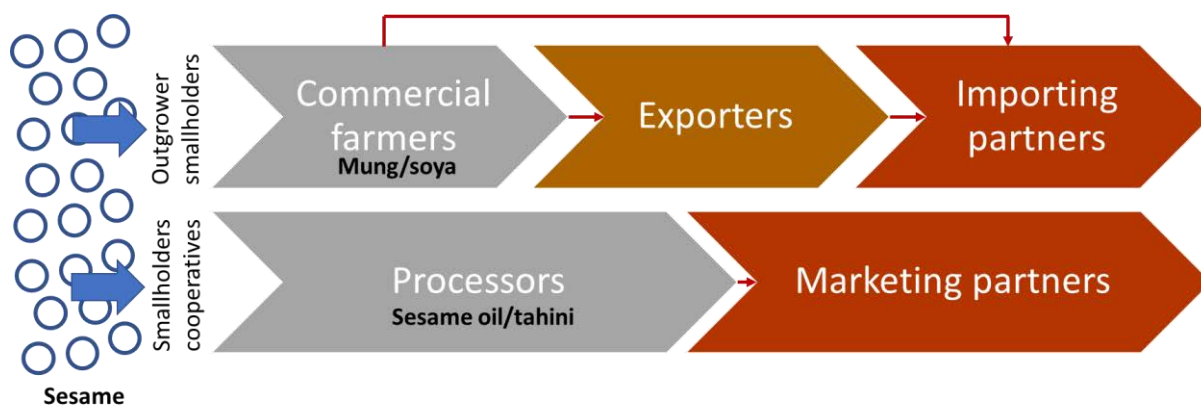


Figure 29 Recommended implementation model

These intervention areas have been validated with stakeholders from the private sector (farmers, farmer organisations, processors, exporters and trade organisations), the Ethiopian public sector (Ministries of Trade and Agriculture as well as various agencies), support organisations (e.g. ATA and SNV) and the Delegation of the European Union in Ethiopia. In the below sections, we detail the individual actions under each heading and possible implementation partners.

Figure 29 summarises the recommended implementation model for the intervention(s). After the stakeholder consultations, we have concluded that **commercial farmers** should be the key beneficiaries. These commercial farmers with land ownings of 500–5,000 ha are ideal partners in a potential project. While they will grow crops themselves, especially mung and soya beans, they will also be owners of outgrower schemes together with smallholders to grow sesame¹⁹.

These commercial farmers can either export directly to Europe (thereby shortening the chain considerably) or work through **exporters**; we recommend a mix of perhaps ten commercial farmers and five exporters as beneficiaries.

As a counterpart, we propose to identify **European processors or traders willing to work with the Ethiopian supply chain** in providing knowledge, technology and potentially finance.

¹⁹ The low current yields as well as the aforementioned “shattering” of sesame and its associated yield loss makes sesame economically unattractive to commercial farmers; smallholder farmers using mainly family labour and small land ownings can still grow sesame profitably.

For the value-added products, we propose to work with either **farmer unions** such as Tsehay Union which are already building up processing capacity (Tsehay Union will commission an oil extraction and refining plant in 2–6 months' time) or with **other entrepreneurs** which are showing an interest in starting an oil extraction or tahini operation. These entrepreneurs might be connected to the strategic agricultural processing parks that are currently being developed with the support of the European Union and other donor organisations. A budget of about 300 m€ is being provided for their development; there is one such park in the Humara region that targets sesame oil and tahini production. For political reasons, it might be advisable to consider entrepreneurs from the special support area around Wollega as well. In both cases, the main supply base will be farmer organisations such as cooperatives. We believe that it is reasonable to attempt to work with 3–4 such organisations, of which 1–2 should be unions and 2–3 independent processors; some commercial farmers have also declared an interest to move into value-added production and could be considered.

These organisations should be matched up with **marketing partners in Europe**, i.e. with organisations that are willing to market the products from Ethiopia under a shared brand. The European component can be taken up, for example, by joint venture partners or organisations similar to Tradin Organic or in any other way that makes it attractive for importing organisations to invest in Ethiopia. The business model would be the overall increase of profit through shortening the chain, which should be shared among the partners for a mutually beneficial situation. An essential criterion in the selection of such marketing partners must be the fairness of the latter with respect to the Ethiopian counterpart (which could be certified through Fairtrade certification).

We recommend working with motivated entities and individuals in order to create role models rather than attempting to reach a large amount of individuals directly through the project. As agricultural chains quickly copy things that provide a real benefit, we are quite convinced that scaling up will be relatively easy if the project creates successful operators.

With this implementation environment, we believe to address a number of important issues:

- Smallholder farming, especially in risk-managed outgrower schemes with Good Agricultural Practices, can easily create an impact in terms of job creation and livelihood improvement; commercial farmers are currently connected to anything between 25 and 200 farmers, whereas Tsehay Union alone counts about 120,000 farmers.
- Outgrower schemes provide an opportunity to increase yields and improve agricultural practices; they are also ideal for mechanisation. Given the vicinity of commercial farmers to the outgrower, knowledge transfer as well as control will be much easier than if the scheme is run by a far-away processor.
- Cooperative and unions continue to be powerful entities in Ethiopia; it is wise to include them in a possible project so as to further the conversion from semi-political entities to marketing organisations for farmers²⁰. We find the option to enter the value-added market particularly attractive, since farmer organisations can use the extra profit margin to fund themselves and reduce their dependence on public funding.
- It is our assessment that the Ethiopian export sector is at present not quite ready in general to enter the European market due to a lack of focus, certification and quality management²¹. Finding European partner organisations that are willing to solidify their origin or even to co-market products from Ethiopia will help the sector to access a market which they are keen to enter.
- This implementation model is balanced quite well between the different types of partners, which reduces the risk of failure; it is also imminently practical in nature, which should speed up implementation if the right co-implementation partners are found.

²⁰ Many successful examples exist in the Netherlands, France, Spain, Denmark and other European countries.

²¹ However, the sector could be ready within the timespan of a CBI intervention.

7.2.1 Coordination of the value chain

The interventions of this component aim to solve issues related to Obstacles 2 and 7 of Table 15 Summary of the most important obstacles and possible solutions

#	Description	Where in the VC?	Possible solution	Possible partners for solutions
Obstacles				
1	Low productivity, especially in sesame	Primary production	Mechanisation Irrigation Agricultural inputs (fertiliser, pesticides) Good Agricultural Practices Specific solution for the “shattering” problem where sesame seeds fall off the stem easily, resulting in about 50% yield losses Soil depletion to be addressed with a rotational crop, especially one which binds nitrogen, such as mung beans	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA
2	Proper management of agricultural inputs (fertilisers, pesticides)	Primary production	Outgrower schemes with clear instructions, training and distribution of correct agricultural inputs Training in integrated pest management (IPM)	2SCALE, ENTAG, SBN, MoA, EDA, NARS, ATA
3	Distortion of prices	Internal trade	FOREX access to be improved through better currency manipulation	NBE, ITC, BENEFIT, ENTAG, ATA, MoT, ECX
4	Access to finance for processing	Processing	Joint ventures with European companies Specific support programmes facilitating access to finance Support in searching for investment	NBE, ENTAG, ITC, IPD, MoT, EPOSPEA
5	Certification, in particular ISO 22000	Processing	Technical support programmes to assist in certification Financial support for certification	ENTAG, ITC, EPOSPEA, EPC
6	Marketing/branding	International trade	Capacity building activities Coaching of individual, highly motivated companies	ENTAG, ITC, EPOSPEA, EPC, MoT
7	Lack of understanding of business culture and communication with EU counterparts	International trade	Cultural training Capacity building in communication skills	ITC, ENTAG
8	Lack of market knowledge and linkage	International trade	Matchmaking Trade missions Fair participation Price monitor, i.e. providing updated information on market prices and price trends	ITC, ENTAG, EPOSPEA, MoT
9	Lack of trade promotion leading to Ethiopia not being known as a source of e.g. mung and soya beans	International trade	Development of trade promotion strategy Trade missions Fair participation	ITC, MoT, ENTAG, EPOSPEA
10	Lack of testing capacity	Support	Capacity building for private	ENTAG,

			laboratories, in particular for ISO 17025 accreditation Specific support programmes to build public or private testing capacity in rural areas Introduction of rapid test equipment in rural areas	EPOSPEA
11	Lack of “patient” importers	International trade	Identification of importers, ideally processors, who are willing to develop their supply chain and support it with access to knowledge, technology as well as finance	ITC, ENTAG, EPOSPEA, MoT
Opportunities				
12	Exporting to Europe seen as a goal	International trade	Ethiopian exporters appreciate the European market because of long-lasting relationships, quality orientation, price premiums and the market for value-added products	ENTAG, ITC, IPD, MoT
13	Good demand from Europe	International trade	For all selected products, there is good demand from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
14	High profit margins for value-added products	International trade	Especially for sesame oil and tahini, profit margins are very good	IPD, ITC, ENTAG, EPOSPEA, MoT
15	Product differentiation	International trade	For some products (mung beans for sprouting, sesame, GMO-free soybeans, tahini) there is a clear differentiation from existing products	IPD, ITC, ENTAG, EPOSPEA, MoT
16	Organic sesame to fetch good price	International trade	Currently, the demand far outweighs the supply of organic sesame; it is also not listed on ECX and therefore not subject to market distortions. A good price is paid for organic sesame in Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Market requirement largely known	International trade	Exporters have knowledge of and to some extent experience in meeting market requirements from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
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A transversal intervention approach aims to improve the coordination of the value chain. While this approach does not seem to make sense as a stand-alone intervention, we believe that the following activities should be considered in addition to the above:

- end-to-end quality management with traceability, where quality is managed throughout the whole chain on the basis of simplified practices and an agreement between value chain partners; a good example are the *Conduits of Excellence* (Lehr 2016c);
- business ethics training, with the aim of increasing the professionalism of the sector and its preparedness to deal with European standards in business conduct (see Obstacle 7);
- outgrower schemes, where the goal would be to assist in finding a successful formula for implementing outgrower schemes in Ethiopia.

The most important of these points is doubtlessly the development of a successful outgrower scheme; already available experience, e.g. in IFDC-2SCALE, SBN, N2Africa, Facilitators for Change or the Organization for Rehabilitation and Development in Amhara, must be taken into account.

7.2.2 Value chain

7.2.2.1 Productivity of the pre- and post-harvest chain

The objective of this component is to solve issues related to productivity, in particular Obstacles 1 and 2 of Table 15 Summary of the most important obstacles and possible solutions

#	Description	Where in the VC?	Possible solution	Possible partners for solutions
Obstacles				
1	Low productivity, especially in sesame	Primary production	Mechanisation Irrigation Agricultural inputs (fertiliser, pesticides) Good Agricultural Practices Specific solution for the “shattering” problem where sesame seeds fall off the stem easily, resulting in about 50% yield losses Soil depletion to be addressed with a rotational crop, especially one which binds nitrogen, such as mung beans	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA
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9	Lack of trade promotion leading to Ethiopia not being known as a source of e.g. mung and soya beans	International trade	Development of trade promotion strategy Trade missions Fair participation	ITC, MoT, ENTAG, EPOSPEA
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Opportunities				
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13	Good demand from Europe	International trade	For all selected products, there is good demand from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
14	High profit margins for value-added products	International trade	Especially for sesame oil and tahini, profit margins are very good	IPD, ITC, ENTAG, EPOSPEA, MoT
15	Product differentiation	International trade	For some products (mung beans for sprouting, sesame, GMO-free soybeans, tahini) there is a clear differentiation from existing products	IPD, ITC, ENTAG, EPOSPEA, MoT
16	Organic sesame to fetch good price	International trade	Currently, the demand far outweighs the supply of organic sesame; it is also not listed on ECX and therefore not subject to market distortions. A good price is paid for organic sesame in Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Market requirement largely known	International trade	Exporters have knowledge of and to some extent experience in meeting	IPD, ITC, ENTAG,

			market requirements from Europe	EPOSPEA, MoT
17	Joint ventures	Processing	There is an opportunity for joint ventures, especially in the sesame trade and value-added products	ENTAG, ITC, EPOSPEA
18	Rotational crops (mung/soya beans for sesame)	Primary production	Rotational crops can counteract nutritional depletion of fields	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA

Since CBI is not an organisation specialised in production issues, we recommend working with partner organisations on these particular issues. To this end, CBI could co-fund or develop:

- simplified Good Agricultural Practices and training;
- training of commercial farmers in organic and conventional integrated pest management;
- training of commercial farmers in proper storage technology, e.g. PICS sacks²²;
- training of commercial farmers in simple mechanisation and row planting.

Possible partner organisations could be development organisations and projects (Wageningen University-BENEFIT partner projects (ISSD, CASCAPE and SBN), IFDC-2SCALE, N2Africa (soybean and mung bean), local NGOs such as Facilitators for Change, Emmanuel Development Association or the Organization for Rehabilitation and Development in Amhara). These organisations and projects currently have an active presence in the production sector for sesame, soybean or mung bean. In addition, the Agricultural Transformation Agency (ATA), technical agencies²³ that are supporting the Agricultural Training Centres and of course the extension services of the Ministry of Agriculture remain crucial.

7.2.2.2 Value-added production

The objective of an intervention in this area is to create additional profit through higher-value products, as well as to create jobs for skilled workers. We believe that the main obstacle to more value-added production lies in access to finance, particularly in the skills necessary to access investment and finance. An acceleration programme for entrepreneurs in value-added production could be a good way to remove this obstacle, listed as No 4 in Table 15 Summary of the most important obstacles and possible solutions

#	Description	Where in the VC?	Possible solution	Possible partners for solutions
Obstacles				
1	Low productivity, especially in sesame	Primary production	Mechanisation Irrigation Agricultural inputs (fertiliser, pesticides) Good Agricultural Practices Specific solution for the “shattering”	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa,

²² https://en.wikipedia.org/wiki/Purdue_Improved_Crop_Storage_bags

²³ For example, GIZ currently works in Ethiopia with a focus on “sustainable land management, agriculture and food supply” as a priority area. Some examples of projects oriented in this area in Ethiopia are the Contribution to the support of the agricultural productiveness in Ethiopia and the Agricultural mechanisation for smallholders project (<https://www.giz.de/en/worldwide/336.html>).

			problem where sesame seeds fall off the stem easily, resulting in about 50% yield losses Soil depletion to be addressed with a rotational crop, especially one which binds nitrogen, such as mung beans	Clinton Foundation, ATA, MoA, NARS, EDA
2	Proper management of agricultural inputs (fertilisers, pesticides)	Primary production	Outgrower schemes with clear instructions, training and distribution of correct agricultural inputs Training in integrated pest management (IPM)	2SCALE, ENTAG, SBN, MoA, EDA, NARS, ATA
3	Distortion of prices	Internal trade	FOREX access to be improved through better currency manipulation	NBE, ITC, BENEFIT, ENTAG, ATA, MoT, ECX
4	Access to finance for processing	Processing	Joint ventures with European companies Specific support programmes facilitating access to finance Support in searching for investment	NBE, ENTAG, ITC, IPD, MoT, EPOSPEA
5	Certification, in particular ISO 22000	Processing	Technical support programmes to assist in certification Financial support for certification	ENTAG, ITC, EPOSPEA, EPC
6	Marketing/branding	International trade	Capacity building activities Coaching of individual, highly motivated companies	ENTAG, ITC, EPOSPEA, EPC, MoT
7	Lack of understanding of business culture and communication with EU counterparts	International trade	Cultural training Capacity building in communication skills	ITC, ENTAG
8	Lack of market knowledge and linkage	International trade	Matchmaking Trade missions Fair participation Price monitor, i.e. providing updated information on market prices and price trends	ITC, ENTAG, EPOSPEA, MoT
9	Lack of trade promotion leading to Ethiopia not being known as a source of e.g. mung and soya beans	International trade	Development of trade promotion strategy Trade missions Fair participation	ITC, MoT, ENTAG, EPOSPEA
10	Lack of testing capacity	Support	Capacity building for private laboratories, in particular for ISO 17025 accreditation Specific support programmes to build public or private testing capacity in rural areas Introduction of rapid test equipment in rural areas	ENTAG, EPOSPEA
11	Lack of “patient” importers	International trade	Identification of importers, ideally processors, who are willing to develop their supply chain and support it with access to knowledge, technology as well as finance	ITC, ENTAG, EPOSPEA, MoT
Opportunities				
12	Exporting to Europe seen as a	International	Ethiopian exporters appreciate the	ENTAG, ITC,

	goal	trade	European market because of long-lasting relationships, quality orientation, price premiums and the market for value-added products	IPD, MoT
13	Good demand from Europe	International trade	For all selected products, there is good demand from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
14	High profit margins for value-added products	International trade	Especially for sesame oil and tahini, profit margins are very good	IPD, ITC, ENTAG, EPOSPEA, MoT
15	Product differentiation	International trade	For some products (mung beans for sprouting, sesame, GMO-free soybeans, tahini) there is a clear differentiation from existing products	IPD, ITC, ENTAG, EPOSPEA, MoT
16	Organic sesame to fetch good price	International trade	Currently, the demand far outweighs the supply of organic sesame; it is also not listed on ECX and therefore not subject to market distortions. A good price is paid for organic sesame in Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Market requirement largely known	International trade	Exporters have knowledge of and to some extent experience in meeting market requirements from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Joint ventures	Processing	There is an opportunity for joint ventures, especially in the sesame trade and value-added products	ENTAG, ITC, EPOSPEA
18	Rotational crops (mung/soya beans for sesame)	Primary production	Rotational crops can counteract nutritional depletion of fields	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA

The acceleration programme should consist of

- training in entrepreneurial skills:
 - o business planning, writing investment briefs;
 - o negotiation and communication skills;
 - o marketing;
 - o investment knowledge;
- market linkage for product validation;
- investment linkage, i.e. access to investors (including matchmaking).

Participating companies should be carefully (and competitively) selected, with a target of 2–3 entering the acceleration programme.

A successful participation could generate knowledge in the marketplace that can be replicated to include others; it could also raise interest by European entities to invest in Ethiopian value chains.

Cooperation with existing acceleration programmes operating in Africa should be sought. One such example are the [Fledge](http://fledge.co/)²⁴ accelerators. Fledge is a global network of conscious company accelerators and seed funds, helping entrepreneurs create impactful companies and co-ops at scale through intense, short programmes filled with education, guidance and a massive amount of mentorship. Fledge also has a venture capital arm that invests in programmes such as Africa Eats.

7.2.2.3 Preparedness to trade

It is our assessment that exporters in Ethiopia at this stage are not overly prepared for dealing with exports to Europe (see Obstacles 5 and 8 in Table 15 Summary of the most important obstacles and possible solutions)

#	Description	Where in the VC?	Possible solution	Possible partners for solutions
Obstacles				
1	Low productivity, especially in sesame	Primary production	Mechanisation Irrigation Agricultural inputs (fertiliser, pesticides) Good Agricultural Practices Specific solution for the “shattering” problem where sesame seeds fall off the stem easily, resulting in about 50% yield losses Soil depletion to be addressed with a rotational crop, especially one which binds nitrogen, such as mung beans	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA
2	Proper management of agricultural inputs (fertilisers, pesticides)	Primary production	Outgrower schemes with clear instructions, training and distribution of correct agricultural inputs Training in integrated pest management (IPM)	2SCALE, ENTAG, SBN, MoA, EDA, NARS, ATA
3	Distortion of prices	Internal trade	FOREX access to be improved through better currency manipulation	NBE, ITC, BENEFIT, ENTAG, ATA, MoT, ECX
4	Access to finance for processing	Processing	Joint ventures with European companies Specific support programmes facilitating access to finance Support in searching for investment	NBE, ENTAG, ITC, IPD, MoT, EPOSPEA
5	Certification, in particular ISO 22000	Processing	Technical support programmes to assist in certification Financial support for certification	ENTAG, ITC, EPOSPEA, EPC
6	Marketing/branding	International trade	Capacity building activities Coaching of individual, highly motivated companies	ENTAG, ITC, EPOSPEA, EPC, MoT
7	Lack of understanding of business culture and communication with EU counterparts	International trade	Cultural training Capacity building in communication skills	ITC, ENTAG
8	Lack of market knowledge and linkage	International trade	Matchmaking Trade missions Fair participation	ITC, ENTAG, EPOSPEA, MoT

²⁴ <http://fledge.co/>

			Price monitor, i.e. providing updated information on market prices and price trends	
9	Lack of trade promotion leading to Ethiopia not being known as a source of e.g. mung and soya beans	International trade	Development of trade promotion strategy Trade missions Fair participation	ITC, MoT, ENTAG, EPOSPEA
10	Lack of testing capacity	Support	Capacity building for private laboratories, in particular for ISO 17025 accreditation Specific support programmes to build public or private testing capacity in rural areas Introduction of rapid test equipment in rural areas	ENTAG, EPOSPEA
11	Lack of “patient” importers	International trade	Identification of importers, ideally processors, who are willing to develop their supply chain and support it with access to knowledge, technology as well as finance	ITC, ENTAG, EPOSPEA, MoT
Opportunities				
12	Exporting to Europe seen as a goal	International trade	Ethiopian exporters appreciate the European market because of long-lasting relationships, quality orientation, price premiums and the market for value-added products	ENTAG, ITC, IPD, MoT
13	Good demand from Europe	International trade	For all selected products, there is good demand from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
14	High profit margins for value-added products	International trade	Especially for sesame oil and tahini, profit margins are very good	IPD, ITC, ENTAG, EPOSPEA, MoT
15	Product differentiation	International trade	For some products (mung beans for sprouting, sesame, GMO-free soybeans, tahini) there is a clear differentiation from existing products	IPD, ITC, ENTAG, EPOSPEA, MoT
16	Organic sesame to fetch good price	International trade	Currently, the demand far outweighs the supply of organic sesame; it is also not listed on ECX and therefore not subject to market distortions. A good price is paid for organic sesame in Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Market requirement largely known	International trade	Exporters have knowledge of and to some extent experience in meeting market requirements from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Joint ventures	Processing	There is an opportunity for joint ventures, especially in the sesame trade and value-added products	ENTAG, ITC, EPOSPEA
18	Rotational crops (mung/soya beans for sesame)	Primary production	Rotational crops can counteract nutritional depletion of fields	2SCALE, ISSD, CASCAPE, SBN, Agriterra,

				N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA
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). Before actual activities in market linkage are undertaken, we feel that there is a need for a precursory step. Activities in this area would include:

- training in European business culture;
- support for certification, in particular HACCP, GMP and ideally ISO 22000;
- training in marketing and branding;
- individual coaching and assistance in developing marketing strategies as well as materials and so on. This activity is especially needed for products requiring social marketing.

Possible partners for this component could be IPD, which recently developed a programme to promote exports of oilseeds, cereals, spices and resins to the EU market. In addition, ITC-SITA will be a useful partner, as it also has an export promotion portfolio to the EU. EPOSPEA, IFDC-2SCALE and ENTAG might be useful partners as well, since they have similar initiatives.

7.2.2.4 Trade

The objective for a potential intervention in this area is to find the appropriate partners for Ethiopian exporters in the oilseeds and pulses sector so as to overcome Obstacle 8 in Table 15 Summary of the most important obstacles and possible solutions

#	Description	Where in the VC?	Possible solution	Possible partners for solutions
Obstacles				
1	Low productivity, especially in sesame	Primary production	Mechanisation Irrigation Agricultural inputs (fertiliser, pesticides) Good Agricultural Practices Specific solution for the “shattering” problem where sesame seeds fall off the stem easily, resulting in about 50% yield losses Soil depletion to be addressed with a rotational crop, especially one which binds nitrogen, such as mung beans	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA
2	Proper management of agricultural inputs (fertilisers, pesticides)	Primary production	Outgrower schemes with clear instructions, training and distribution of correct agricultural inputs Training in integrated pest management (IPM)	2SCALE, ENTAG, SBN, MoA, EDA, NARS, ATA
3	Distortion of prices	Internal trade	FOREX access to be improved through better currency manipulation	NBE, ITC, BENEFIT, ENTAG, ATA, MoT, ECX
4	Access to finance for processing	Processing	Joint ventures with European companies Specific support programmes facilitating access to finance Support in searching for investment	NBE, ENTAG, ITC, IPD, MoT, EPOSPEA
5	Certification, in particular ISO 22000	Processing	Technical support programmes to assist in certification	ENTAG, ITC, EPOSPEA,

			Financial support for certification	EPC
6	Marketing/branding	International trade	Capacity building activities Coaching of individual, highly motivated companies	ENTAG, ITC, EPOSPEA, EPC, MoT
7	Lack of understanding of business culture and communication with EU counterparts	International trade	Cultural training Capacity building in communication skills	ITC, ENTAG
8	Lack of market knowledge and linkage	International trade	Matchmaking Trade missions Fair participation Price monitor, i.e. providing updated information on market prices and price trends	ITC, ENTAG, EPOSPEA, MoT
9	Lack of trade promotion leading to Ethiopia not being known as a source of e.g. mung and soya beans	International trade	Development of trade promotion strategy Trade missions Fair participation	ITC, MoT, ENTAG, EPOSPEA
10	Lack of testing capacity	Support	Capacity building for private laboratories, in particular for ISO 17025 accreditation Specific support programmes to build public or private testing capacity in rural areas Introduction of rapid test equipment in rural areas	ENTAG, EPOSPEA
11	Lack of “patient” importers	International trade	Identification of importers, ideally processors, who are willing to develop their supply chain and support it with access to knowledge, technology as well as finance	ITC, ENTAG, EPOSPEA, MoT
Opportunities				
12	Exporting to Europe seen as a goal	International trade	Ethiopian exporters appreciate the European market because of long-lasting relationships, quality orientation, price premiums and the market for value-added products	ENTAG, ITC, IPD, MoT
13	Good demand from Europe	International trade	For all selected products, there is good demand from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
14	High profit margins for value-added products	International trade	Especially for sesame oil and tahini, profit margins are very good	IPD, ITC, ENTAG, EPOSPEA, MoT
15	Product differentiation	International trade	For some products (mung beans for sprouting, sesame, GMO-free soybeans, tahini) there is a clear differentiation from existing products	IPD, ITC, ENTAG, EPOSPEA, MoT
16	Organic sesame to fetch good price	International trade	Currently, the demand far outweighs the supply of organic sesame; it is also not listed on ECX and therefore not subject to market distortions. A good price is paid for organic sesame in Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Market requirement largely	International	Exporters have knowledge of and to	IPD, ITC,

	known	trade	some extent experience in meeting market requirements from Europe	ENTAG, EPOSPEA, MoT
17	Joint ventures	Processing	There is an opportunity for joint ventures, especially in the sesame trade and value-added products	ENTAG, ITC, EPOSPEA
18	Rotational crops (mung/soya beans for sesame)	Primary production	Rotational crops can counteract nutritional depletion of fields	2SCALE, ISSD, CASCAPE, SBN, Agriterra, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA

. It is important that these partners are willing to engage with their value chain and effectuate change through step-by-step improvements. Activities here would be:

- matchmaking, especially to processors rather than traders of promising companies that have (i) the capacity to invest, (ii) an interest in quality and safety, (iii) a long-term interest in exporting to Europe;
- visits to trade fairs and trade missions.

Possible partners for this intervention could be ENTAG, IFDC-2SCALE, EPOSPEA, IPD and ITC-SITA. The Ministry of Trade – Trade Promotion Unit is a crucial government partner.

Another very important obstacle to trade is the capacity for testing in Ethiopia. Currently, there is only a single accredited laboratory in the country, in Addis Ababa. The World Bank is reported to develop an 18 m\$ project together with the Ethiopian Conformity Assessment Body; a liaison with this activity is desirable. It would probably be beneficial as well to help establish institutional relationships between RIKILT and similar laboratories in Ethiopia.

7.2.3 Policymaking

7.2.3.1 Macroeconomics

For the agricultural value chains to work sustainably, the FOREX issue must be solved (see Obstacle 3). A dialogue between macroeconomists from Europe and Ethiopia could help to come up with currency manipulation strategies that do not hurt agricultural exports as much as they currently do.

Given that this area is not a CBI core competence, it would ideally be implemented by a partner organisation such as IMF or the World Bank. However, in our view, CBI should attempt to make sure that this issue is being taken up; otherwise, the project risk will rise very significantly.

7.2.3.2 Development of trade promotion policy

In order to overcome Obstacle 9 in Table 15 Summary of the most important obstacles and possible solutions

#	Description	Where in the VC?	Possible solution	Possible partners for solutions
Obstacles				
1	Low productivity, especially in sesame	Primary production	Mechanisation Irrigation Agricultural inputs (fertiliser, pesticides) Good Agricultural Practices	2SCALE, ISSD, CASCAPE, SBN, Agriterra,

			Specific solution for the “shattering” problem where sesame seeds fall off the stem easily, resulting in about 50% yield losses Soil depletion to be addressed with a rotational crop, especially one which binds nitrogen, such as mung beans	N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA
2	Proper management of agricultural inputs (fertilisers, pesticides)	Primary production	Outgrower schemes with clear instructions, training and distribution of correct agricultural inputs Training in integrated pest management (IPM)	2SCALE, ENTAG, SBN, MoA, EDA, NARS, ATA
3	Distortion of prices	Internal trade	FOREX access to be improved through better currency manipulation	NBE, ITC, BENEFIT, ENTAG, ATA, MoT, ECX
4	Access to finance for processing	Processing	Joint ventures with European companies Specific support programmes facilitating access to finance Support in searching for investment	NBE, ENTAG, ITC, IPD, MoT, EPOSPEA
5	Certification, in particular ISO 22000	Processing	Technical support programmes to assist in certification Financial support for certification	ENTAG, ITC, EPOSPEA, EPC
6	Marketing/branding	International trade	Capacity building activities Coaching of individual, highly motivated companies	ENTAG, ITC, EPOSPEA, EPC, MoT
7	Lack of understanding of business culture and communication with EU counterparts	International trade	Cultural training Capacity building in communication skills	ITC, ENTAG
8	Lack of market knowledge and linkage	International trade	Matchmaking Trade missions Fair participation Price monitor, i.e. providing updated information on market prices and price trends	ITC, ENTAG, EPOSPEA, MoT
9	Lack of trade promotion leading to Ethiopia not being known as a source of e.g. mung and soya beans	International trade	Development of trade promotion strategy Trade missions Fair participation	ITC, MoT, ENTAG, EPOSPEA
10	Lack of testing capacity	Support	Capacity building for private laboratories, in particular for ISO 17025 accreditation Specific support programmes to build public or private testing capacity in rural areas Introduction of rapid test equipment in rural areas	ENTAG, EPOSPEA
11	Lack of “patient” importers	International trade	Identification of importers, ideally processors, who are willing to develop their supply chain and support it with access to knowledge, technology as well as finance	ITC, ENTAG, EPOSPEA, MoT
Opportunities				

12	Exporting to Europe seen as a goal	International trade	Ethiopian exporters appreciate the European market because of long-lasting relationships, quality orientation, price premiums and the market for value-added products	ENTAG, ITC, IPD, MoT
13	Good demand from Europe	International trade	For all selected products, there is good demand from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
14	High profit margins for value-added products	International trade	Especially for sesame oil and tahini, profit margins are very good	IPD, ITC, ENTAG, EPOSPEA, MoT
15	Product differentiation	International trade	For some products (mung beans for sprouting, sesame, GMO-free soybeans, tahini) there is a clear differentiation from existing products	IPD, ITC, ENTAG, EPOSPEA, MoT
16	Organic sesame to fetch good price	International trade	Currently, the demand far outweighs the supply of organic sesame; it is also not listed on ECX and therefore not subject to market distortions. A good price is paid for organic sesame in Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Market requirement largely known	International trade	Exporters have knowledge of and to some extent experience in meeting market requirements from Europe	IPD, ITC, ENTAG, EPOSPEA, MoT
17	Joint ventures	Processing	There is an opportunity for joint ventures, especially in the sesame trade and value-added products	ENTAG, ITC, EPOSPEA
18	Rotational crops (mung/soya beans for sesame)	Primary production	Rotational crops can counteract nutritional depletion of fields	2SCALE, ISSD, CASCAPE, SBN, Agriterria, N2Africa, Clinton Foundation, ATA, MoA, NARS, EDA

, the Ministry of Trade through the corresponding Directorates is currently working on a trade promotion strategy and trade policy. In conversations with the responsible State Minister and the Director of the competent Directorate, clear interest was expressed in obtaining support for this activity.

CBI as an expert organisation in this area should support the development of the strategy and policy, as well as assisting with specific activities, particularly in promotional materials for oilseeds and pulses, brand development – potentially in collaboration with ATA – and trade missions.

7.3 Opportunities for a CBI project

After consultation with stakeholders, the most promising products for consideration by CBI are:

- organic sesame in rotation with organic mung beans;
- conventional sesame in rotation with conventional soya beans;
- socially responsible sesame oil for the luxury market;
- organic tahini.

In our opinion, all six products have interesting market opportunities in Europe if the “economic conundrum” can be solved. We believe that it is most reasonable to attempt a shortening of the value chain; i.e. supporting exporting farmers, unions and entrepreneurs in value-added production, while at the same time linking them to European partner organisations that are willing to invest in their supply chains.

CBI has an opportunity to engage in a meaningful project – together with partner organisations – to create sustainable value chains in sesame (organic and conventional), mung beans (conventional and organic), soya beans, sesame oil and tahini.

Productivity issues are prominent in all these sectors and need to be solved together with partners; however, the specific expertise of CBI as well as its expertise in market linkage, trade promotion, entrepreneurship in agricultural value chains, certification and other technical requirements make such a contribution vital to these sectors.

We believe that the aforementioned interventions could:

- increase the total export volume to the EU by approximately 24 m€²⁵ or 5% of agricultural exports;
- create approximately 2,300 stable jobs²⁵ in both primary production and processing;
- create opportunities for women entrepreneurs in contract farming (or even contract processing in shared and supervised processing centres) by explicitly targeting them in the outgrower schemes;
- increase the quality of exported goods and decrease the “downgrading” of materials, e.g. organic => conventional, thereby increasing the competitiveness of the value chain(s);
- create awareness through outgrower schemes of the importance of social and environmental factors on the long-term sustainability of the value chain.

²⁵ Please see Appendix V for details on this estimate.

7.4 Main risks for a CBI project

The following table provides a detailed specification of the main risks identified for the selected products in a CBI project, as well as their possible solutions.

Table 16 Main risks for a CBI intervention

#	Risk	Description	Likelihoods	Impact	Possible mitigation
1	Non-competitive market prices	Particularly the conventional sesame sector is likely heading for a bust. Other commodities are just about competitive internationally	High	Medium	Increase in yield; shortening of supply chain; value-added production
2	Lack of exporter focus on EU	Currently, the EU is seen more as an aspiration than as a real business partner; exporters are focused on short-term business with Asia rather than longer-term development for EU value chains	High	High	Market linkage to partners; awareness of value chain economics
3	Lack of interest from importers	Ethiopia is not known as a reliable source of the commodities under consideration; importers' risk assessments of the country might also be negative; Ethiopian business ethics are not necessarily up to European standards	Medium	High	Finding partners willing to develop the value chain; training in European business culture
4	Unsuccessful outgrower schemes	Outgrower schemes have had mixed success in Ethiopia and success models exist only in the barley sector	Medium	Medium	Good mediation between partners and international expertise; learning from the barley case
5	Volatility of international market	Especially the soya bean sector is strongly affected by the US-China trade relationship	Medium	Medium	Establish partnerships that do not focus on short-term profits
6	Political situation or stability	The political climate could become hostile to a European intervention	Low	High	-
7	Natural disasters or climate change	Natural disasters or climate change could threaten production	Medium	High	Good spread of intervention in different crops and regions
8	Lack of finance	Project partners could have financial difficulties implementing their share of an intervention	High	Medium	Include private investors and financial institutions

7.5 Baseline measurement

Table 17 lists recommended indicators for measuring the impact of a possible CBI intervention. Activities listed above either directly or indirectly influence these indicators. We have attempted to keep the list as short as possible. Indicators have been designed with the SMART principles in mind:

- Specific – target a specific area for improvement.
- Measurable – quantify or at least suggest an indicator of progress.
- Assignable – specify who will do it.
- Realistic – state what results can realistically be achieved, given available resources.
- Time-related – specify when the result(s) can be achieved.

We have omitted a number of indicators that are difficult to measure. For some, such as employment generated, we suggest proxy measures (e.g. an increase in total export volume to the EU). Others, such as waste generated or the use of child labour, are simply too difficult to measure at this time. Once the value chain is more professional and better used to capturing important data (e.g. for the purpose of quality improvements), it might become feasible to measure them.

Table 17 Recommended indicators for baseline measurement

Area	Indicator	Comments	Value
Productivity	Yield	Harvest yield in Mt/ha	Sesame: 0.4 Mt/ha Soybean: 2 Mt/ha Mung bean: 0.8 Mt/ha
	Post-harvest losses	Shrinkage after harvest and drying until export	Drying losses Sesame: 2–3% Soybean: 3% Mung bean: 2–8% Infestation losses Sesame: 10–15% Soybean: <5% Mung bean: 20–30%
SMEs in the sectors	# of SMEs engaged in trading and exporting	Data are hard to find and classification as SME does not exist as such, but one can note that most exporters are SMEs by EU standards. These figures are based on estimation	<u>SMEs in the sector</u> Sesame: 2,000 Soybean: 1,500 Mung bean: 1,500 <u>SME exporters</u> -Sesame: 1,000 -Soybean: 400 -Mung bean: 400
Business service organisations (BSOs) and sector associations	# of BSOs and sector associations actively operating	Information on BSOs is limited but sector associations exist	Sesame: 2 Soybean: 3 Mung bean: 3
	Type of service		Lobbying to policymakers, market linkage, market information
	Level of cooperation between BSOs, NGOs and knowledge institutions	Based on judgement	Medium

Local government	# of policies or strategies developed and implemented		No international market promotion strategy yet Tacit policies that favour export to China
	Access to finance by SMEs		Exporting SMEs can easily get finance if they have a sales contract, but SMEs in farming, aggregation and trading hardly have any access
Competitiveness	Export price margin	Difference between international market price, raw material cost and processing cost	Sesame: up to 500 \$/Mt Soybean: 50–100 \$/Mt Mung: 150 \$/Mt
	Volume of compliant vs non-compliant materials	Ratio of volumes tested by surveyors or laboratories	No information available
Market linkage	Established relationships with European buyers	For beneficiaries, the number of existing relationships amounting to at least a container full of trade in the period under consideration	No information available
	Volume of business generated from trade missions and fairs	Total volume of business generated (in USD) during or as a consequence of trade missions or assistance in trade fairs	N/A
	Total value of exports of sesame, mung beans, soya beans, sesame oil and tahini to the EU		Oilseeds – 6-year average: 30 m\$ per annum Pulses – 6-year average: 17 m\$ per annum Sesame oil: no information Tahini: no information
CSR	Number of women entrepreneurs in value chain	Per value chain step, number of women participating	No information available; currently very low

Section 8

Conclusions

Ethiopia is a large producer of oilseeds and pulses, some of which are very interesting to the European market. The country already has long-standing trade relationships with the EU, although exporters have lately focused more on the easier-to-serve Asian market.

We have identified business opportunities, especially in:

- organic and conventional sesame;
- organic and conventional mung beans;
- soya beans;
- sesame oil;
- tahini.

Ethiopia has production and export capacity for the agricultural materials in varying degrees. The newer crops soya and mung beans have been highlighted as new opportunities in the country. While smallholder farmers might be suspicious especially of mung beans, which are not part of the national cuisine, more forward-thinking producers have already realised their potential.

For the above commodities, our analysis of the demand indicates a clear opportunity for Ethiopia to replace current suppliers. The main reasons are as follows:

- The quality of Humara-type sesame from Ethiopia is a benchmark for the sesame sector; Ethiopia is already a large producer and exporter, imports to Europe are very healthy.
- Ethiopia is able to provide organic sesame, which is a growth sector in Europe.
- Ethiopia is demonstrably GMO-free in soya beans, for which a market exists in Europe that is currently serviced from countries with greater GMO risk.
- Mung beans from Ethiopia have been reported to be good for sprouting, a growth market in Europe; organic mung beans are difficult to obtain in Europe and are of particular interest for sprouting.
- Sesame oil and tahini consumption are growing in Europe; Ethiopia is ideal for social marketing as a traditional source of sesame, alongside its smallholder presence and fascinating local culture that can be exploited in branding. In addition, the Humara type of sesame has an exceptional taste profile for tahini.

These opportunities have been confirmed where possible by direct interviews²⁶.

At the current stage, we believe that a mixed strategy of intervention is best, where support is provided to exporting farmers and processors of value-added products; see Table 18.

We also believe that rather than attempting to reach all stakeholders with awareness raising, capacity building and training, it should be considered to coach much more closely a carefully selected number of beneficiaries that demonstrate their commitment, have the capacity to invest and understand well what the EU market has to offer them. By concentrating on really motivated beneficiaries, the impact in numbers might be smaller initially, but others will follow these role models and ultimately make much more impact.

Of course, a programme can always combine broader efforts in training and awareness raising through the in-depth coaching of a small number of companies.

²⁶ In one case, contact between a European importer and an Ethiopian exporter had already been established.

Table 18 Target beneficiaries and main needs

Exporting farmers	Processors of value-added products
Mediation of successful outgrower schemes Market linkage for raw materials Coaching in doing business with the EU Finding partners for mechanisation	Entrepreneurial training (for independent processors) Finding partners in the EU for trade and/or investment (for farmer organisations as well as independent processors)
Mediation of agreements between parties on quality and safety End-to-end quality management (simple schemes and training), including traceability	

On the precondition that the “economic conundrum” can be solved, we are convinced that a well-designed intervention in the sector can make a lot of difference in Ethiopia and contribute to the overall aim of CBI to increase the volume of exports from developing countries to the EU, create jobs and assist in the area of corporate social responsibility.

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10. Appendix I: Methodology of product analysis

10.1 Research and ranking methodology

The following analysis is based on the Action Plan that was submitted prior to beginning the research and the underlying Terms of Reference of this project.

The consultants have analysed key documents provided by CBI and other supportive reports and documents. Short and long-term trends have been analysed using data from the CBI website and other sources including trade databases.

In order to assess product-market combinations, 24 possible products were identified for which there is evidence of marketability in Europe. For each of these combinations, a profile was generated (see [Appendix II](#)) to allow better overview and easier assessment of the potential of that combination.

The profile is fed from

- General information about the use and the value-added potential from various sources (encyclopaedias, CBI, sector reports)
- COMTRADE for imports into the European Union of the identified goods
- Export statistics from Ethiopia to contrast COMSTAT data
- FAOSTAT for production volumes
- 3rd party assessments of the export potential from sector reports or CBI

Since the report focuses on “new” goods whose export market can be developed in the short to mid-term, we have focused on the years 2013-2017 (if data was available). The assessment of trend opportunities in the European Market takes base on market potential studies and assessments from CBI reports.

In order to prioritise – and finally select 5-10 product market combinations –the following methodology was employed. The assessment was broken down into the following criteria and sub-criteria:

	Criteria/sub-criteria	Weight
1	Production capacity	10
1.1	Developments over the 5 last years	3
1.2	Expected developments in production for the short and long term	3
1.3	Potential for certified production	4
2	Export capacity of Ethiopia	10
2.1	Export volume	5
2.2	Developments over the 5 last years	1
2.3	Developments of exports to Europe over the 5 last years	1
2.4	Export potential to EU&EFTA	3
3	Trends on the European market	20
3.1	Trend opportunities - special markets	20
4	Market demand	20
4.1	Import volume	10
4.2	Competition	5
4.3	Demand on the European market over the last years (imports)	5
5	European requirements	10
5.1	Barriers/limitants	10

Each criterion was assigned a weight via points. Given that a ranking is attempted here that wants to identify products with growth or development potential, we have ranked indicators related to current production less than indicators related to market demand from the European Union.

Within one indicator, we have distributed the points in the fashion listed in the table above. For this purpose, we used different point scales for the different types of criteria as shown below:

Volumes		Trends	
High	100%	Growing	100%
Moderate	75%	Stable	66%
Neutral	50%	Volatile	33%
Low	25%	Declining	0%
Not at all	0%		

Trade value		Competition	
< 1 million USD	0%	No presence of developed nations	100%
1 - 10 million USD	33%	Some presence of developed nations	50%
11 - 100 million USD	66%	Mainly developed nations	0%
>100 million USD	100%		

Points for the product were then given on the basis of the profiles in Appendix II.

As an example, if our data indicated a growing trend in overall export capacity of the product in the last 5 years, we would assign 100% of 1 point, i.e. 1 point. If for the same product, the main competitors are a mix of developed and developing nations, we would assign 50% of 5 points, i.e. 2.5 points.

In cases where no information was available for some sub-criteria, the available points were re-assigned keeping the relative proportion constant where possible.

For example, in the case of niger seeds for criterion “Export capacity of Ethiopia” we only have data for Export volume and World-wide exports over the last 5 years, but no data for exports to Europe or the export potential to Europe. In this case we have assigned 8 points to Export volume and 2 points to World-wide exports over the last 5 years.

If no information was available at all for an indicator, the following was assumed

- If the indicator represents a trend, we assumed a “constant” trend
- If the indicator represents a volume or a value, zero was assumed

As an example, we have no data for the sub-criteria of Market demand for niger seeds and have therefore assigned a “neutral” 10 points.

10.2 Limitations of the methodology

A few caveats should be considered regarding the methodology.

Completeness of the criteria

In a number of cases, it would have been ideal to include further indicators. In particular, no consideration has been given to European import requirements (including CSR requirements) simply because no data was available. In the course of the consultancy interviews with importers will be conducted to address this issue at least to some extent. For a selection of the products, the issues of the value chain will be analysed, providing an assessment of the potential for compliance with European demands.

It would also have been ideal to include an indicator on gender balance and women participation in the analysis, but no data was available.

Sensitivity of the analysis to subjective interpretation

To some extent the above ranking is influenced by how we assessed the individual sub-criteria. In the case of trends for example there is some room for interpretation in our methodology.

Ideally, a sensitivity analysis would be performed on the data set, but time was too short to perform this analysis.

Completeness and reliability of the underlying data sets

Clearly, there are quite a few data gaps in the data underlying our product profiles. Some of this data might be available somewhere, but a source couldn't be found in the time available to us. We have identified the main information gaps in Section 6.

For the top 5-10 products, we will attempt to close the gap by employing other data bases and more information available in Ethiopia.

There is little information on the reliability of the underlying data set. We have assumed that the international trade and production data bases represent the best-known data about the product; in some case we have used data from local sources (where the international data bases had no information).

11. Appendix II: Product profiles

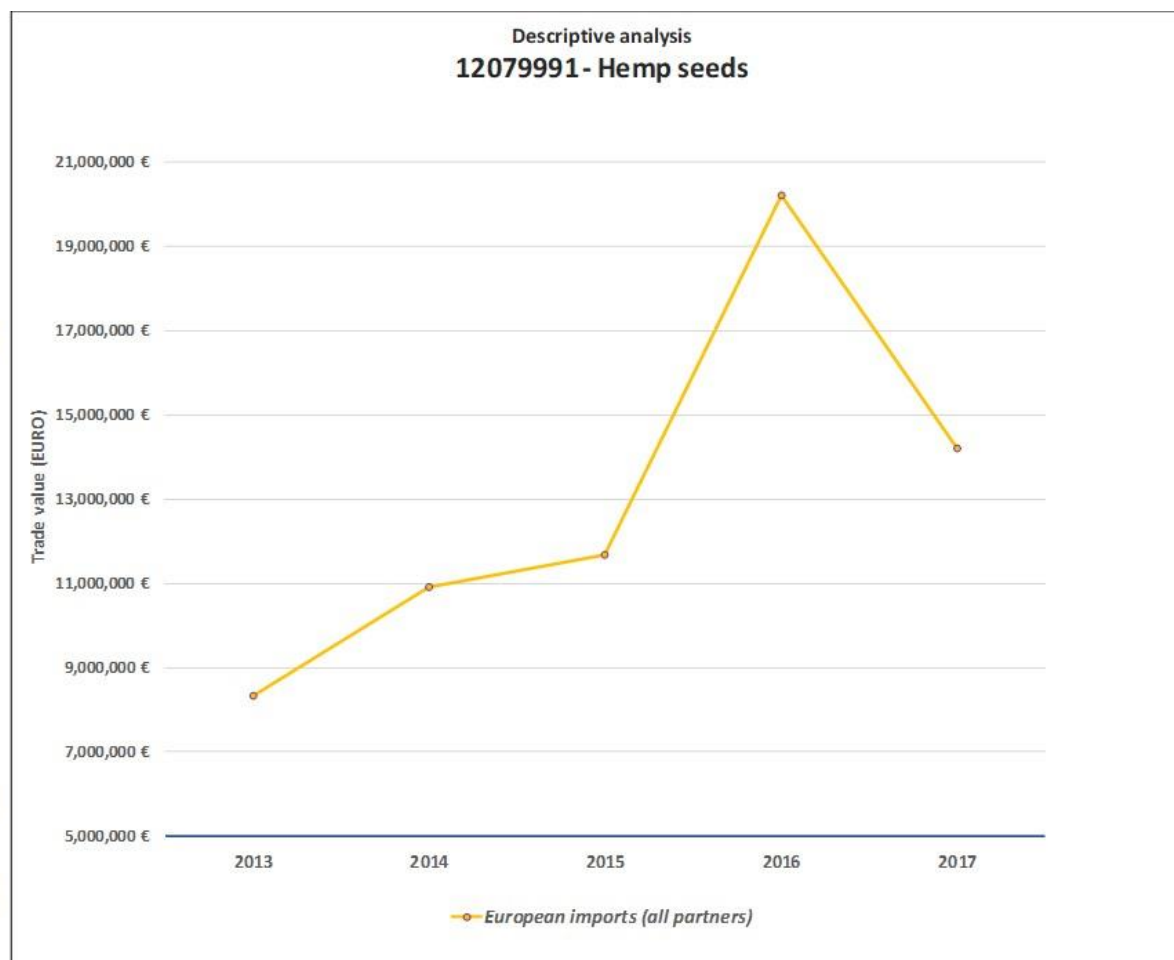
11.1 Oilseeds

Criteria/subcriteria	Pumpkin seeds		Linseeds		Niger seeds		Sesame seeds		Mustard seeds		Hemp seeds		Safflower seeds		Poppy seeds	
	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight
1 Production capacity		7		7.99		10		7.99		6.98		7		5.99		7
1.1 Developments over the 5 last years	#N/A	N/D	33	0.99	100	3	33	0.99	66	1.98	N/D	N/D	33	0.99	N/D	N/D
1.2 Expected developments in production for the short and long term	100	4	100	3	100	3	100	3	100	3	100	4	100	3	100	4
1.3 Potential for certified production	50	3	100	4	100	4	100	4	50	2	50	3	50	2	50	3
2 Export capacity of Ethiopia		2.0		3.0		5.9		7.6		0.3		5.0		5.0		0.0
2.1 Export volume	0	0.0	0	0.0	66	5.3	100	5.0	0	0.0	N/D	N/D	N/D	N/D	0	0.0
2.2 Worldwide exports over the 5 last years	100	2.0	0	0.0	33	0.7	33	0.3	0	0.0	N/D	N/D	N/D	N/D	0	0.0
2.3 Exports to Europe over the 5 last years	N/D	N/D	N/D	N/D	N/D	N/D	0	0.0	33	0.3	N/D	N/D	N/D	N/D	N/D	N/D
2.4 Export potential to EU&EFTA	N/D	N/D	100	3.0	N/D	N/D	75	2.3	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
3 Trends on the European market		15.0		20.0		20.0		20.0		15.0		15.0		15.0		15.0
3.1 Trend opportunities - special markets	75	15.0	100	20.0	100	20.0	100	20.0	75	15.0	75	15.0	75	15.0	75	15.0
4 Market demand		14.2		12.5		10.0		15.0		10.8		10.8		7.5		6.6
4.1 Import volume	100	10.0	100	10.0	N/D	N/D	100	10.0	66	6.6	66	6.6	33	3.3	66	6.6
4.2 Competition	50	2.5	50	2.5	N/D	N/D	100	5.0	50	2.5	50	2.5	50	2.5	0	0.0
4.3 Demand on the European market over the last 5 years (imports)	33	1.7	0	0.0	N/D	N/D	0	0.0	33	1.7	33	1.7	33	1.7	0	0.0
5 European requirements																
5.1 Barriers/limitants																
Total		38.2		43.5		45.9		50.6		33.1		37.8		33.4		28.6

11.1.1 Hemp seeds

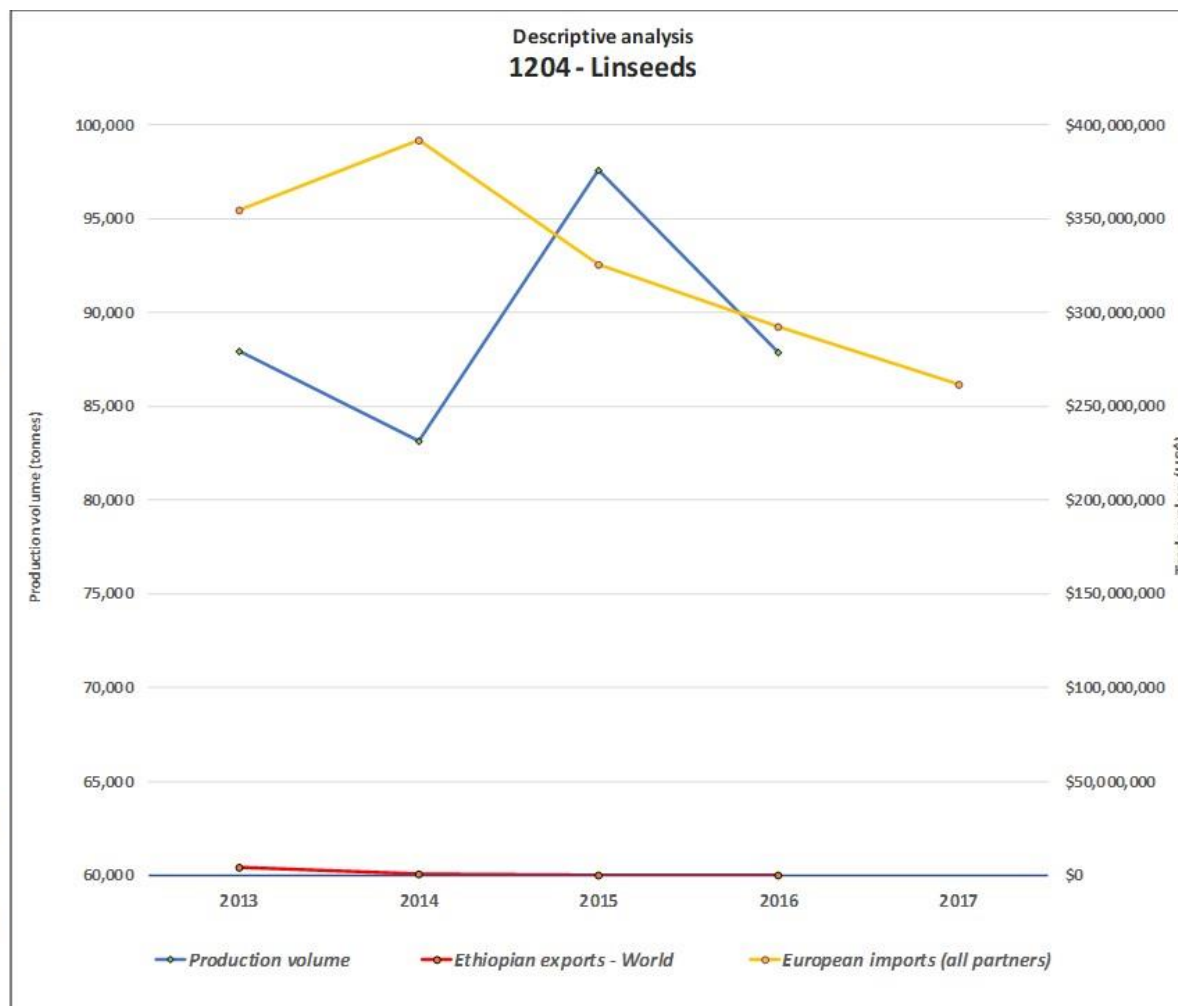
Production capacity	N/D
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	Neutral
Exports volume	N/D
Exports (to world)	N/D
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	Moderate
Health and wellness, specialist foods, nutritious foods, protein supplement	
Import volume	\$13,065,502
Competition	Some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	Wesr European Countries :Netherlands, Germany, Belgium, UK (trade values by importer not specified)
Main exporters to EU	1- China (73%) , 2- Canada (25%), 3- Ukraine (2%), - USA (0.2%), 5- Hong Kong (0.1%)

Main use: Food processing, Condiments



11.1.2 Linseeds

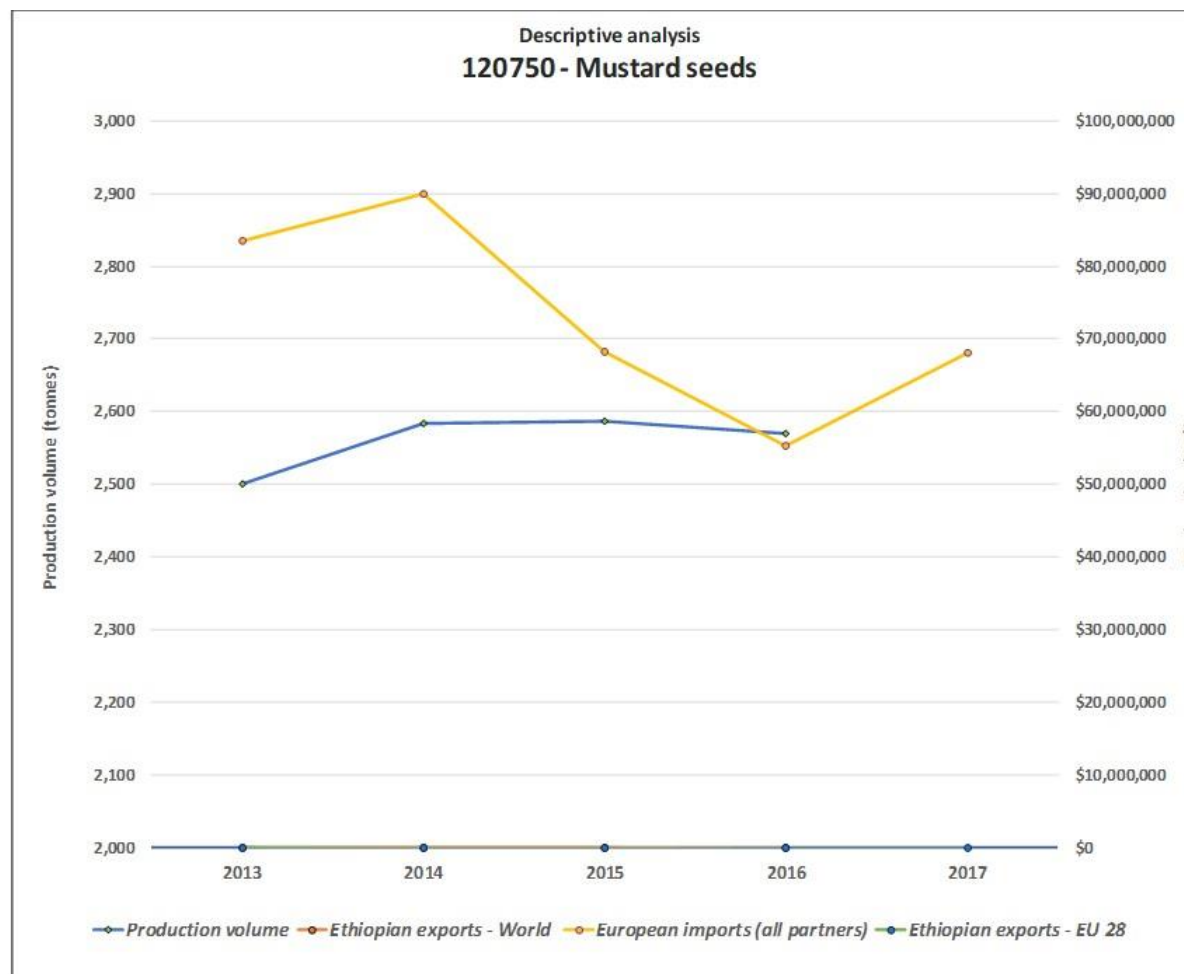
Production capacity	Volatile
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	High
Exports volume	\$1,232,007
Exports (to world)	Dedining
Exports (to Europe)	N/D
Main European partners	
No data	
Export potential to EU & EFTA	High
Current export potential US\$ thousand / % of unused potential	\$639 / 100%
Projected export potential US\$ thousand / % of unused potential	\$1,377 / 100%
Trend opportunities - special markets	
High Health and wellness, healthy foods, pet food, natural -organic products, food safety, traceable foods, unsaturated fatty acids	
Import volume	\$325,292,384
Competition	Some presence of DN
European market demand (imports)	Dedining
Main European importers (from all partners)	
1- Belgium (53%), 2- Germany (19%), 3- Netherlands (6%), 4- Poland (4%), 5- France (4%), 6- Italy (3%)	
Main exporters to EU	
1- Russian Federation (41%), 2- Kazakhstan (28%), 3- Canada (23%), 4- Ukraine (2%), 5- India (2%), 6- USA (1%)	



Main use: Oil crushing and industrial uses, Health food, Bakery, Pet food (mainly bird food)

11.1.3 Mustard seeds

Production capacity	Stable
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	Neutral
Exports volume	\$16,125
Exports (to world)	Dedining
Exports (to Europe)	Volatile
Main European partners	
1- UK (100%)	
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	
Specialist foods, healthy and nutritious foods	
Import volume	\$72,974,330
Competition	Some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- Germany (37%), 2- France (18%), 3- Netherlands (10%), 4- Belgium (9%), 5- Poland (6%), 6- United Kingdom (3%)	
Main exporters to EU	
1- Canada (52%), 2- Ukraine (24%), 3- Russian Federation (16%), 4- Serbia (2%), 5- India (2%), 6- Kazakhstan (1%)	

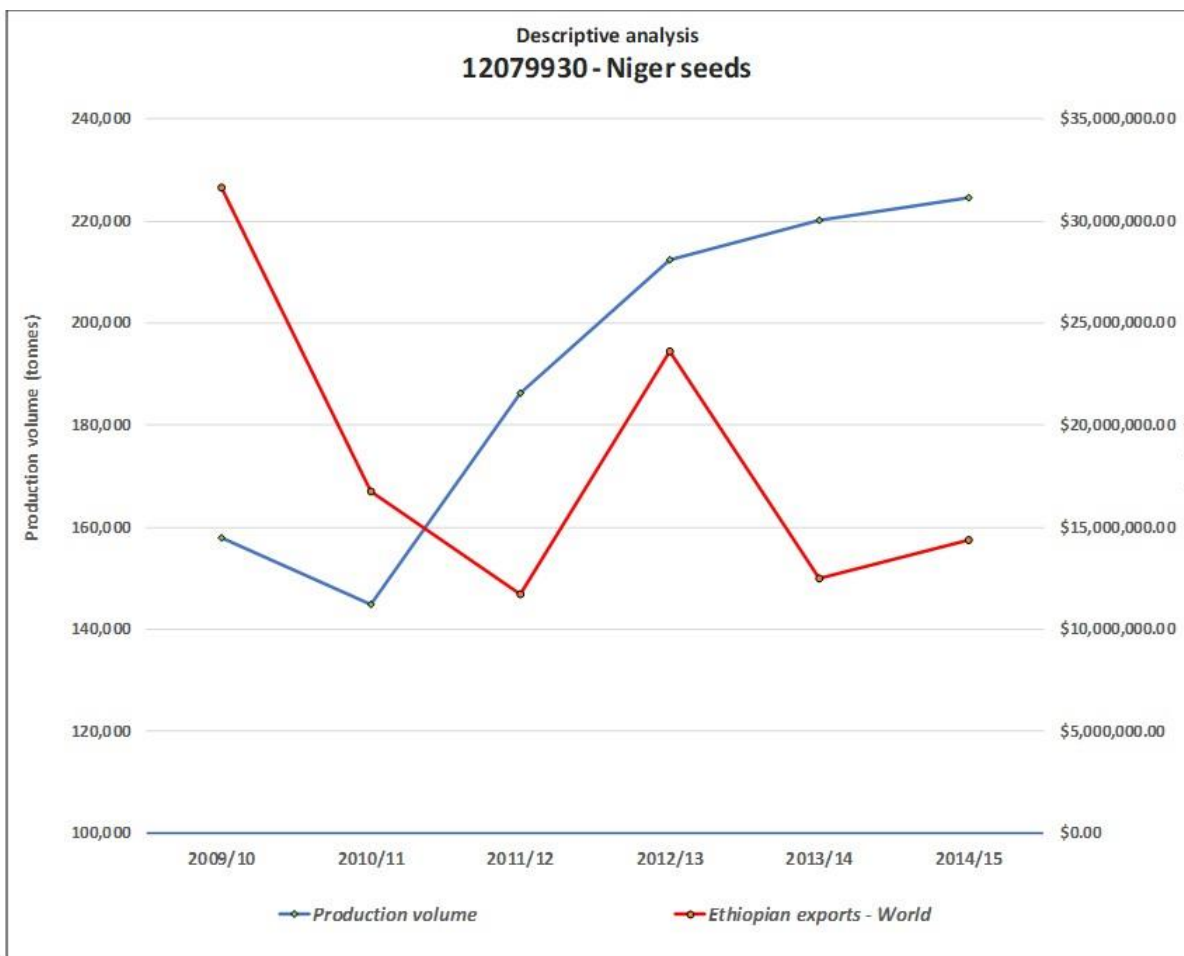


Main use: Food processing - condiments

11.1.4 Niger seeds

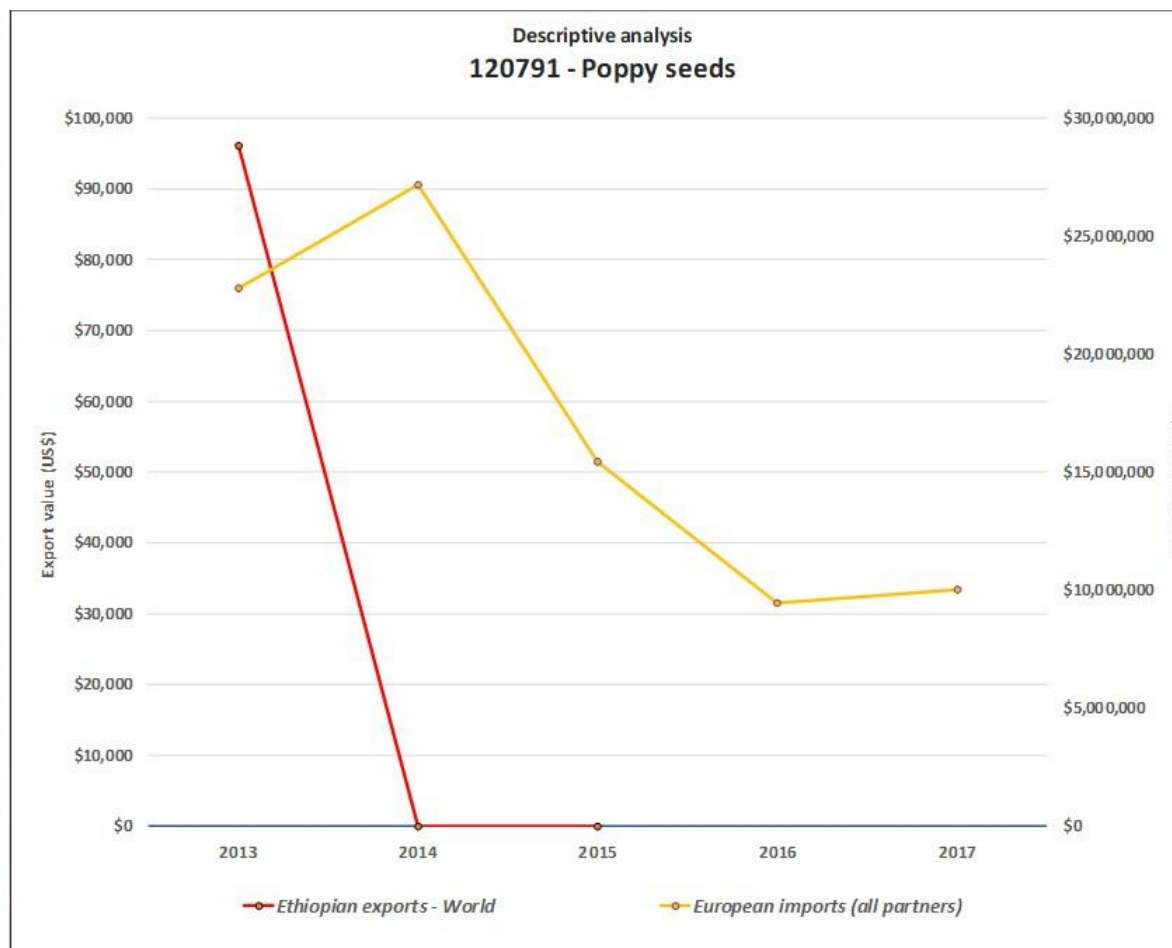
Production capacity	Growing
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	High
Exports volume	\$18,441,167
Exports (to world)	Volatile
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	High
Health and wellness, pet food (birdfeed), natural-organic products	
Import volume	N/D
Competition	N/D
European market demand (imports)	N/D
Main European importers (from all partners)	UK, Netherlands, Belgium, Sweden, Italy (based on bird food market, trade values by importer not specified.)
Main exporters to EU	N/D

Main use: Pet food (mainly bird food), Oil crushing



11.1.5 Poppy seeds

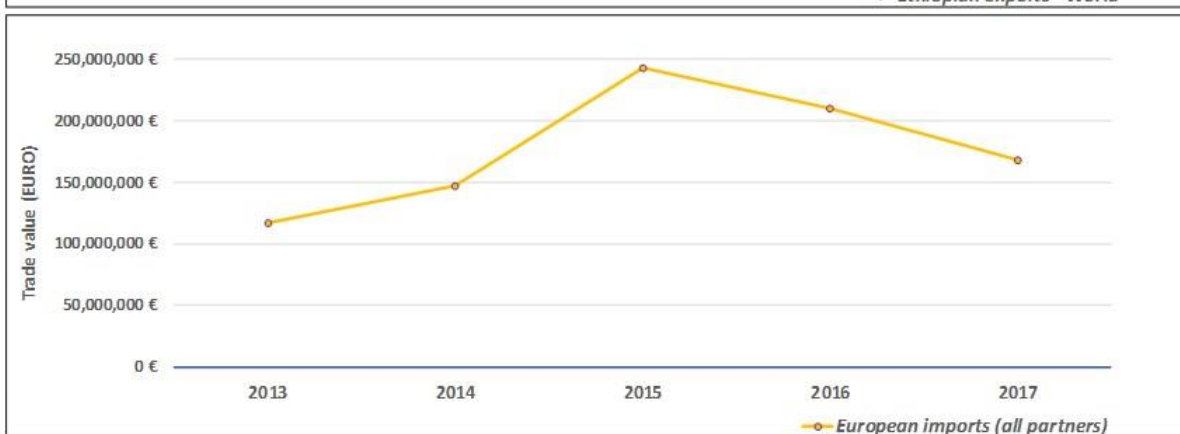
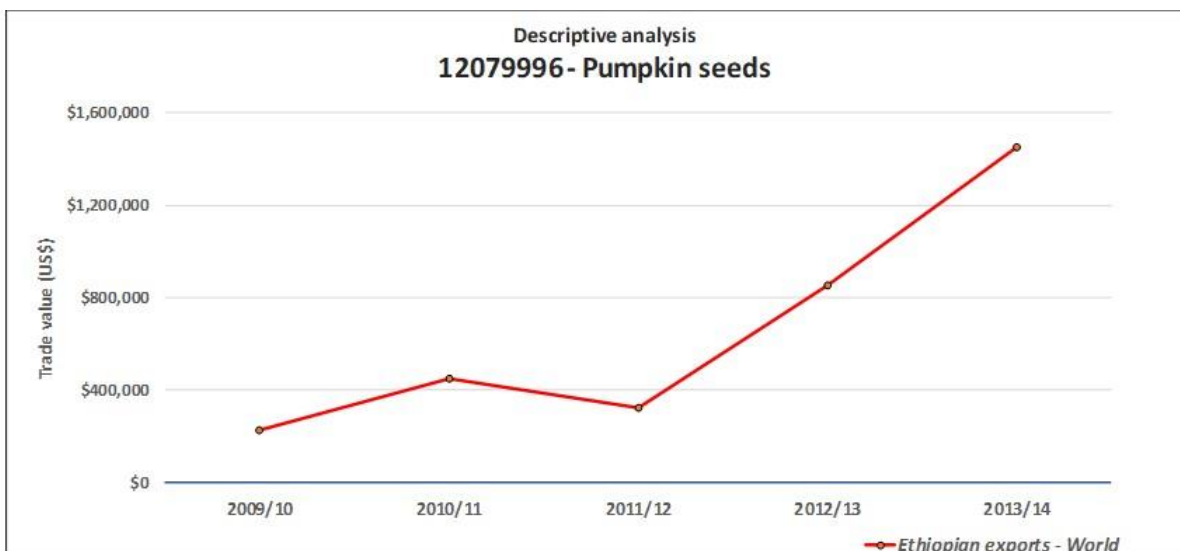
Production capacity	N/D
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	Neutral
Exports volume	\$32,027
Exports (to world)	Declining
Exports (to Europe)	N/D
Main European partners	
N/D	
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	
Moderate	
Health and wellness, functional foods, specialist foods, nutritious foods	
Import volume	\$16,983,722
Competition	Mainly DN
European market demand (imports)	Declining
Main European importers (from all partners)	
1- Germany (21%), 2- Poland (12%), 3- Austria (12%), 4- Czechia (12%), 5- Netherlands (11%), 6- UK (6%)	
Main exporters to EU	
1- Turkey (39%), 2- Australia (21%), 3- Other Europe, nes (17%), 4- China (15%), 5- Ukraine (1%), 6- Pakistan (1%)	



Main use: Bakery, Food processing – condiments, Health products

11.1.6 Pumpkin seeds

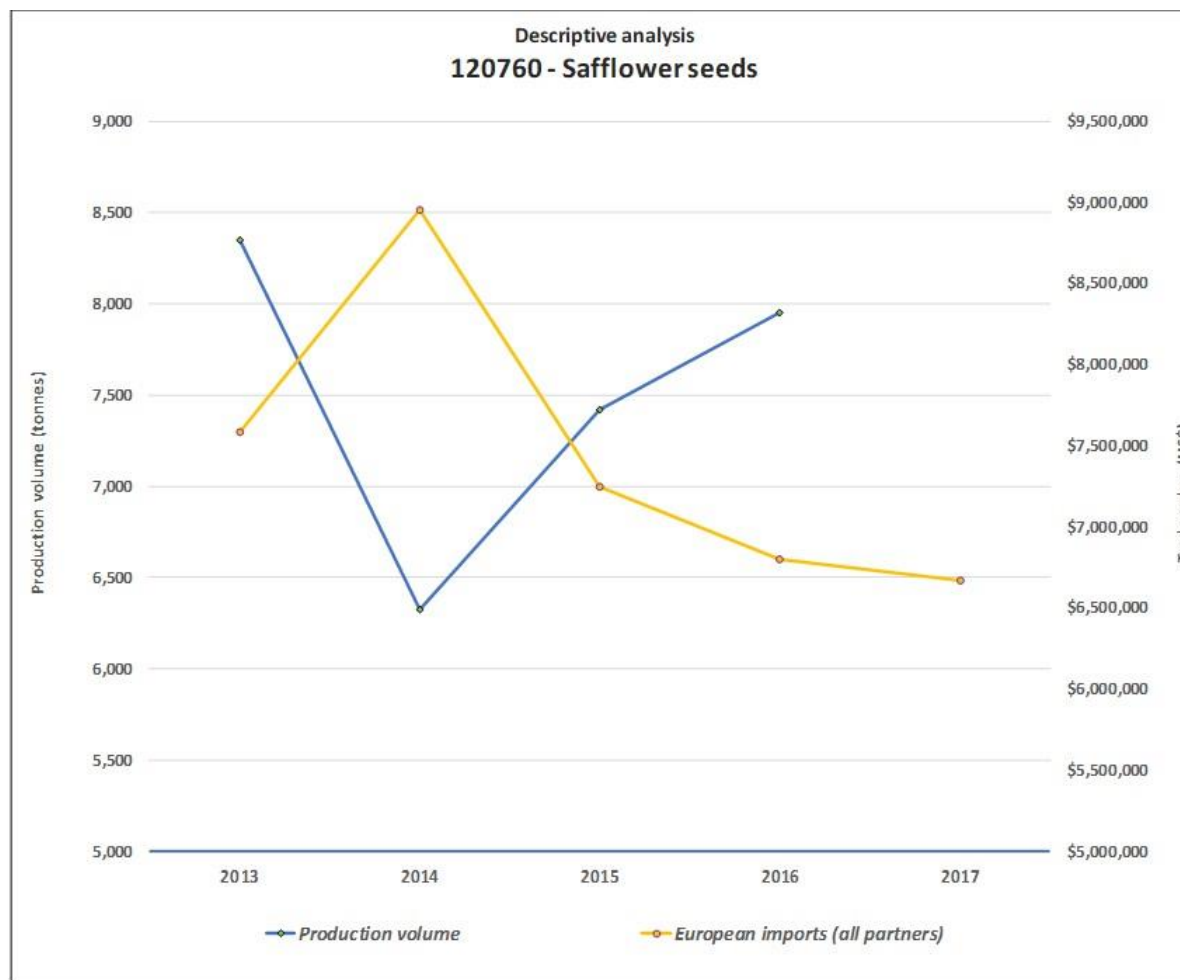
Production capacity	N/D
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	Neutral
Exports volume	\$660,600
Exports (to world)	Growing
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	Moderate
Health and wellness, functional foods, specialist foods, nutritious foods	
Import volume	\$176,963,865
Competition	Some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	West European Countries :Netherlands, Germany, Belgium, UK (trade values by importer not specified)
Main exporters to EU	1- China (64%), 2- Ukraine (5%), 3- USA (5%), 4- Paraguay (4%), 5- Bolivia (4%)



Main use: Bakery, Food processing – condiments

11.1.7 Safflower seeds

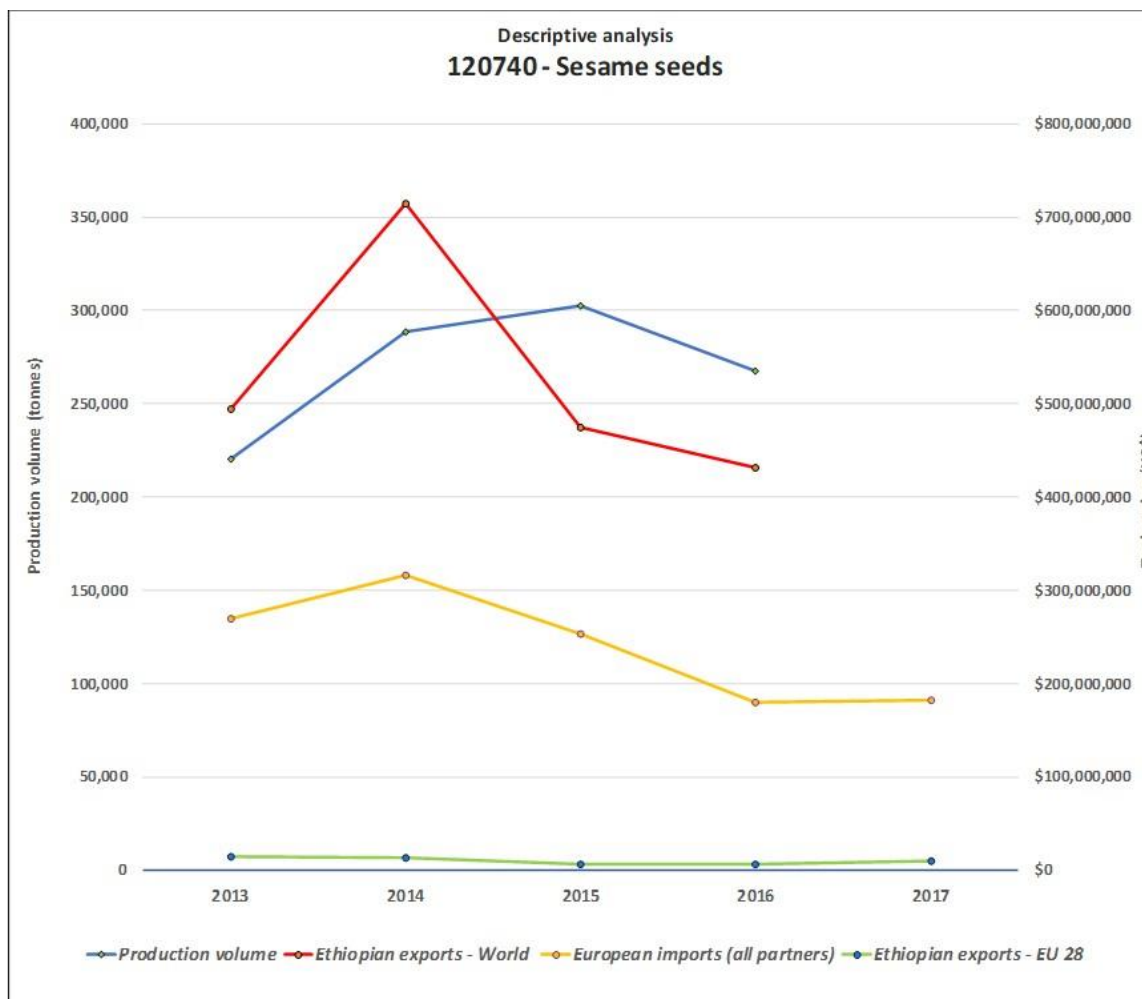
Production capacity	Volatile
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	Neutral
Exports volume	N/D
Exports (to world)	N/D
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	Moderate
Health and wellness, functional foods, specialist foods, pet food	
Import volume	\$7,451,834
Competition	Some presence of DN
European market demand(imports)	Volatile
Main European importers (from all partners)	
1- Belgium (30%), 2- Denmark (23%), 3- Netherlands (8%), 4- Germany (8%), 5- Poland (7%), 6- Ireland (5%)	
Main exporters to EU	
1- Russian Federation (51%), 2- India (23%), 3- Bolivia (9%), 4- Kazakhstan (8%), 5-Ukraine (2%), 6-USA (1%)	



Main use: Bakery, Food processing – condiments, Pet food (mainly bird food)

11.1.8 Sesame seeds

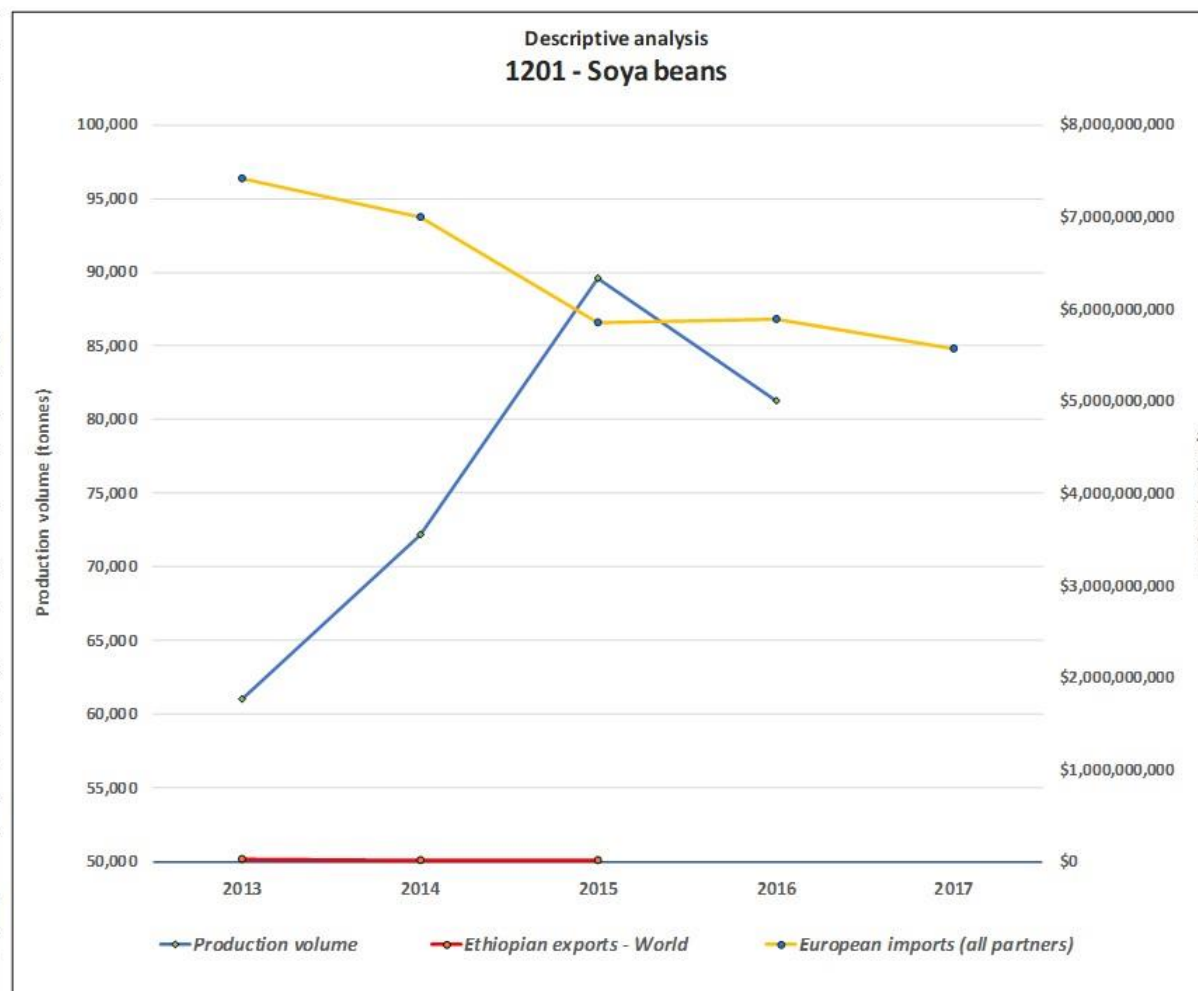
Production capacity	Volatile
Expected production developments	High (government focused on doubling agricultural)
Potential for certified production	High
Exports volume	\$528,771,095
Exports (to world)	Volatile
Exports (to Europe)	Dedining
Main European partners	1- Greece (63%), 2- Netherlands (20%), 3- UK (7%), 4- Itlay (5%), 5- Bulgaria (3%), 6- Poland (2%)
Export potential to EU & EFTA	Moderate
Current export potential US\$ thousand / % of unused potential	\$53,536 / 81%
Projected export potential US\$ thousand / % of unused potential	\$89,971 / 89%
Trend opportunities - special markets	High
Health and wellness, healthy ready-to-eat products (snacks, nut/oilseed mixes, etc), bakery, ethnic food, natural -organic products, food safety and Quality Management Systems,	
Import volume	\$240,326,252
Competition	No presence of DN
European market demand (imports)	Dedining
Main European importers (from all partners)	1- Germany (23%), 2- Greece (19%), 3- Netherlands (11%), 4- Poland (7%), 5- France (7%), 6- UK (6%).
Main exporters to EU	1- India (49%), 2- Nigeria (14%), Sudan (9%), 4- Guatemala (4%), 5- Ethiopia (4%), 6- Paraguay (2%)



Main use: Bakery, snack foods, ethnic foods, Oil crushing and animal feed, Non-food applications: pharmaceutical and cosmetics

11.1.9 Soya beans

Production capacity	Volatile
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	N/D
Exports volume	\$20,363,415
Exports (to world)	Declining
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	High
Current export potential US\$ thousand / % of unused potential	\$1,545 / 95%
Projected export potential US\$ thousand / % of unused potential	\$3,384 / 98%
Trend opportunities - special markets	Moderate
Organic, GMO-free soya	
Import volume	\$6,342,936,027
Competition	Some presence of DN
European market demand (imports)	Declining
Main European importers (from all partners)	1- Germany (24%), 2- Spain (22%), 3- Netherlands (22%), 4- Italy (9%), 5- Portugal (5%), 6- UK (5%)
Main exporters to EU	1- Brazil (40%), 2- USA (32%), 3- Paraguay (10%), 4- Canada (8%), 5- Ukraine (4%), 6- Uruguay (4%)



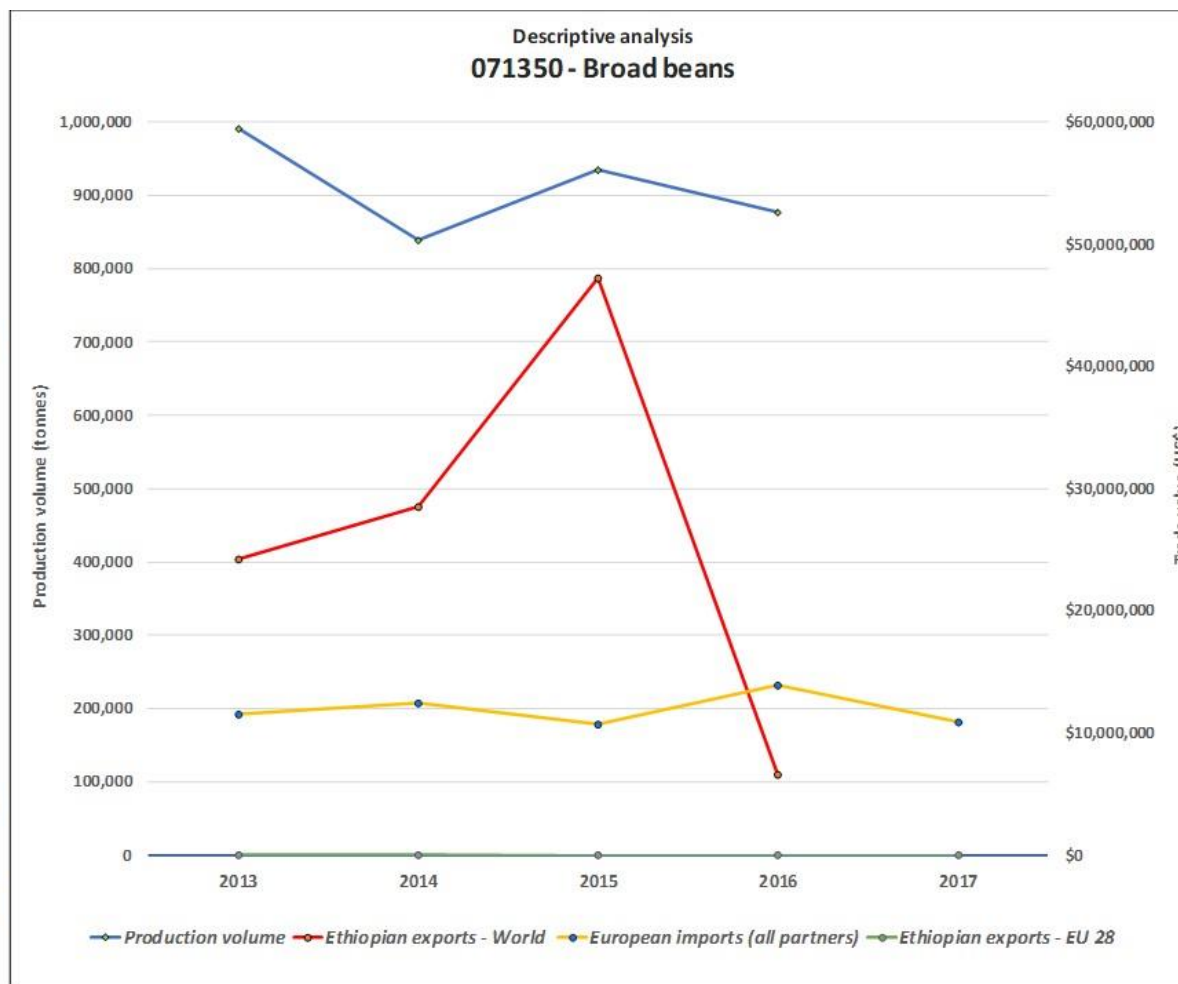
Main use: Oil crushing, Food processing

11.2 Pulses

Criteria/subcriteria	Lentils		Mung beans		Chickpeas		Broad beans		Kidney beans		Dried leguminous vegetables		Soya beans	
	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight
1 Production capacity		8.3		10		7.99		6.65		6.65		10		6.65
1.1 Developments over the 5 last years	66	3.3	N/D	N/D	33	0.99	33	1.65	33	1.65	N/D	N/D	33	1.65
1.2 Expected developments in production for the short and long term	100	5	100	10	100	3	100	5	100	5	100	10	100	5
1.3 Potential for certified production	N/D	N/D	N/D	N/D	100	4	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
2 Export capacity of Ethiopia		0.7		5.3		7.0		7.0		8.3		5.1		7.0
2.1 Export volume	0	0.0	33	1.7	66	3.3	66	3.3	100	5.0	66	4.6	66	4.0
2.2 Worldwide exports over the 5 last years	33	0.7	33	0.3	33	0.3	33	0.3	33	0.3	33	0.5	0	0.0
2.3 Exports to Europe over the 5 last years	N/D	N/D	33	0.3	33	0.3	33	0.3	0	0.0	0	0.0	N/D	N/D
2.4 Export potential to EU&EFTA	N/D	N/D	100	3.0	100	3.0	100	3.0	100	3.0	N/D	N/D	100	3.0
3 Trends on the European market		20.0		20.0		20.0		15.0		20.0		15.0		15.0
3.1 Trend opportunities - special markets	100	20.0	100	20.0	100	20.0	75	15.0	100	20.0	75	15.0	75	15.0
4 Market demand		15.0		10.8		11.7		12.4		14.2		10.0		12.5
4.1 Import volume	100	10.0	66	6.6	100	10.0	66	6.6	100	10.0	33	3.3	100	10.0
4.2 Competition	0	0.0	50	2.5	0	0.0	50	2.5	50	2.5	100	5.0	50	2.5
4.1 Demand on the European market over the last 5 years (imports)	100	5.0	33	1.7	33	1.7	66	3.3	33	1.7	33	1.7	0	0.0
5 European requirements														
5.1 Barriers/limitants														
Total		44.0		46.1		46.6		41.0		49.1		40.1		41.1

11.2.1 Broad beans

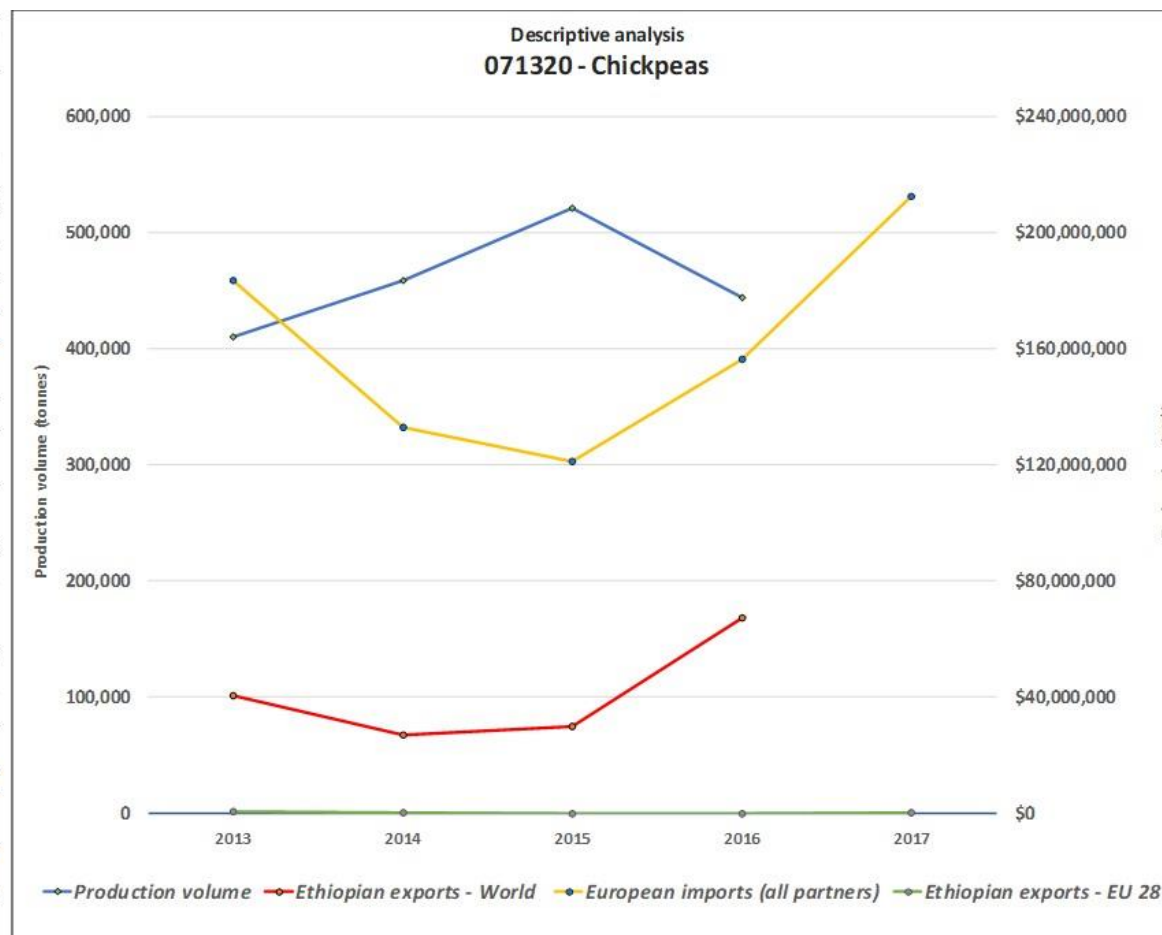
Production capacity	Volatile
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	N/D
Exports volume	\$26,681,481
Exports (to world)	Volatile
Exports (to Europe)	Volatile
Main European partners	
1- Portugal (90%), 2- UK (10%)	
Export potential to EU & EFTA	High
Current export potential US\$ thousand / % of unused potential	\$997 / 98%
Projected export potential US\$ thousand / % of unused potential	\$2,363 / 99%
Trend opportunities - special markets	
Moderate Healthy food, natural-organic markets, vegetarian, food convenience, ethnic, social responsibility	
Import volume	\$11,905,705
Competition	Some presence of DN
European market demand (imports)	Stable
Main European importers (from all partners)	
1- Italy (31%), 2- Spain (17%), 3- France (12%), 4- Germany (7%), 5- Belgium (4%), 6- Greece (4%)	
Main exporters to EU	
1- Egypt (35%), 2- Turkey (20%), 3- Morocco (12%), 4- Australia (8%), 5- Bolivia (6%), 6- Lebanon (5%)	



Main use: Food service

11.2.2 Chickpeas

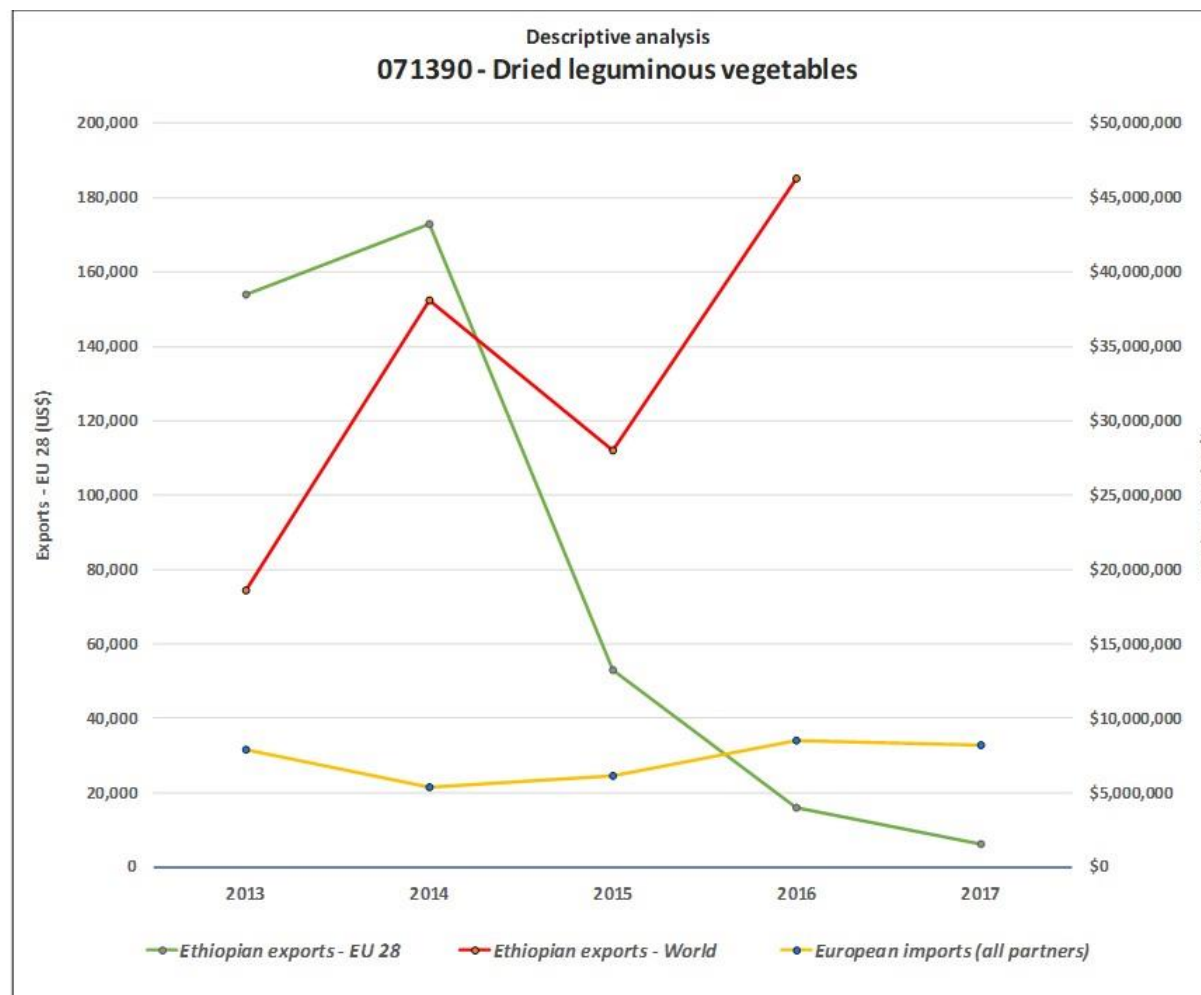
Production capacity	Volatile
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	High (organic)
Exports volume	\$41,192,571
Exports (to world)	Volatile
Exports (to Europe)	Volatile
Main European partners	1- Portugal (39%), 2- Italy (26%), 3- Belgium (13%), 4- Romania (8%), 5- Czech Republic (5%), 6- Germany (4%)
Export potential to EU & EFTA	High
Current export potential US\$ thousand / % of unused potential	\$2,875 / 92%
Projected export potential US\$ thousand / % of unused potential	\$6,447 / 96%
Trend opportunities - special markets	High
Healthy food, natural-organic markets, vegetarian, food convenience, ethnic, social responsibility	
Import volume	\$161,237,716
Competition	Mainly DN
European market demand (imports)	Volatile
Main European importers (from all partners)	1- Spain (34%), 2- UK (21%), 3- Italy (15%), 4- Portugal (7%), 5- Germany (5%), 6- Belgium (3%)
Main exporters to EU	1- Mexico (31%), 2- USA (17%), 3- Argentina (15%), 4- Australia (8%), 5- Canada (7%), 6- Turkey (7%)



Main use: Food processing, canning and preparation, Food service

11.2.3 Dried leguminous vegetables

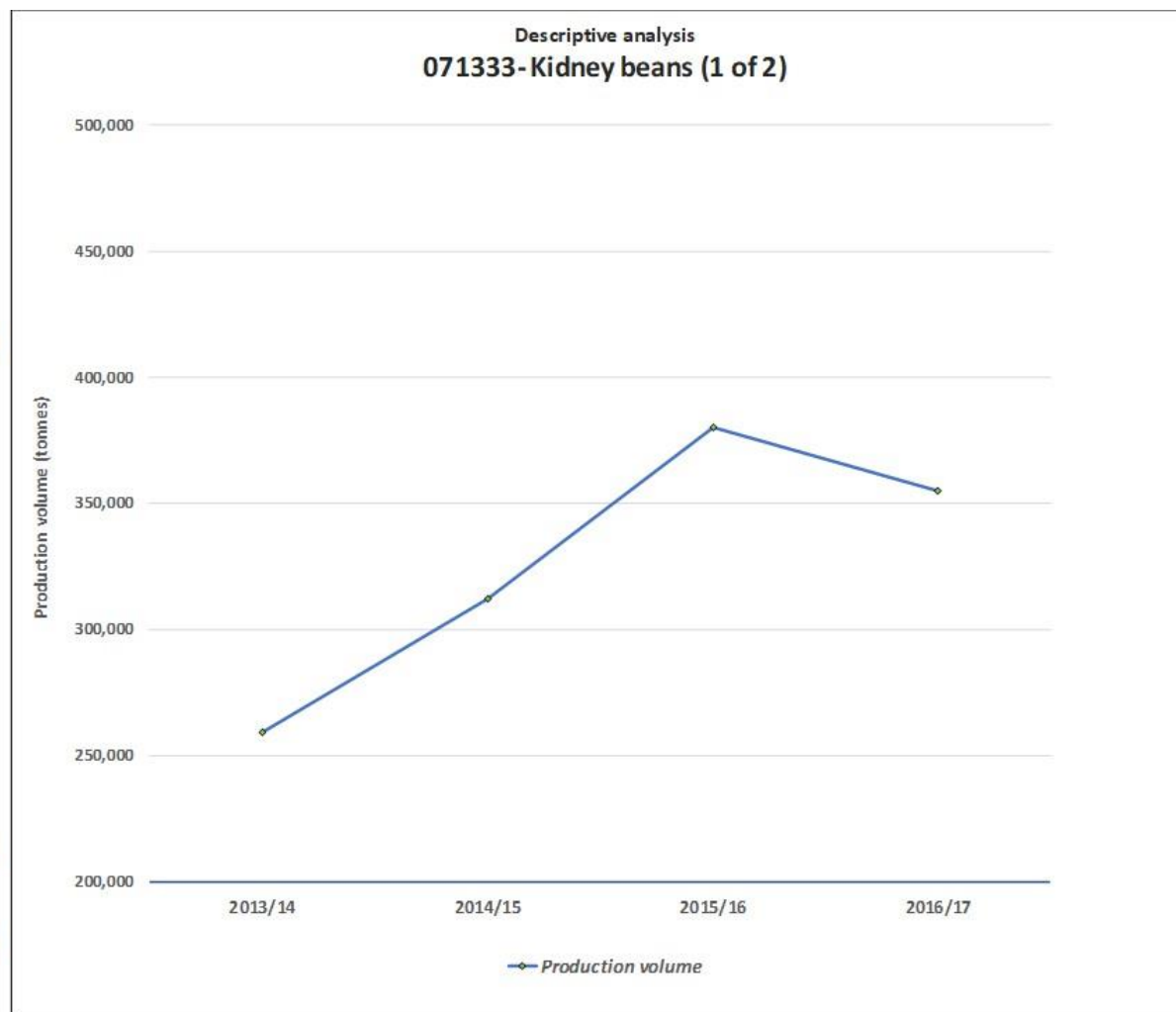
Production capacity	N/D
Expected production developments	High (government focused on doubling agricultural
Potential for certified production	N/D
Exports volume	\$32,739,031
Exports (to world)	Volatile
Exports (to Europe)	Declining
Main European partners	
1- UK (47%), 2- Italy (30%), 3- Greece (8%), 4- Spain (6%), 5- Netherlands (4%), 6- Czech Republic (4%)	
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets Moderate	
Healthy food, natural-organic markets, vegetarian, food convenience, ethnic, social responsibility	
Import volume	\$7,192,662
Competition	No presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- UK (44%), 2- Netherlands (12%), 3- Italy (9%), 4- Spain (8%), 5- France (6%), 6- Germany (4%)	
Main exporters to EU	
1- India (25%), 2- Uganda (11%), 3- Malaysia (11%), 4- China (7%), 5- Sri Lanka (5%), 6- Pakistan (5%)	



Main use: Health food, ethnic food

11.2.4 Kidney beans

Production capacity	Volatile
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	N/D
Exports volume	\$142,578,986
Exports (to world)	Volatile
Exports (to Europe)	Declining
Main European partners	
1- Portugal (16%), 2- Bulgaria (13%), 3- Belgium (11%), 4- UK (10%), 5- Italy (10%), 6- Netherlands (9%)	
Export potential to EU & EFTA	High
Current export potential US\$ thousand / % of unused potential	\$31,517 / 37%
Projected export potential US\$ thousand / % of unused potential	\$65,123 / 60%
Trend opportunities - special markets	
High Healthy food, organic markets (can be an opportunity because the availability is often not sufficient to meet the growing demand), vegetarian, food convenience, ethnic, social responsibility	
Import volume	\$509,920,651
Competition	Some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- Italy (28%), 2- UK (18%), 3- Spain (11%), 4- France (7%), 5- Portugal (6%), 6- Belgium (4%)	
Main exporters to EU	
1- Canada (25%), 2- China (24%), 3- USA (20%), 4- Argentina (14%), 5- Ethiopia (5%), 6- Egypt (5%)	

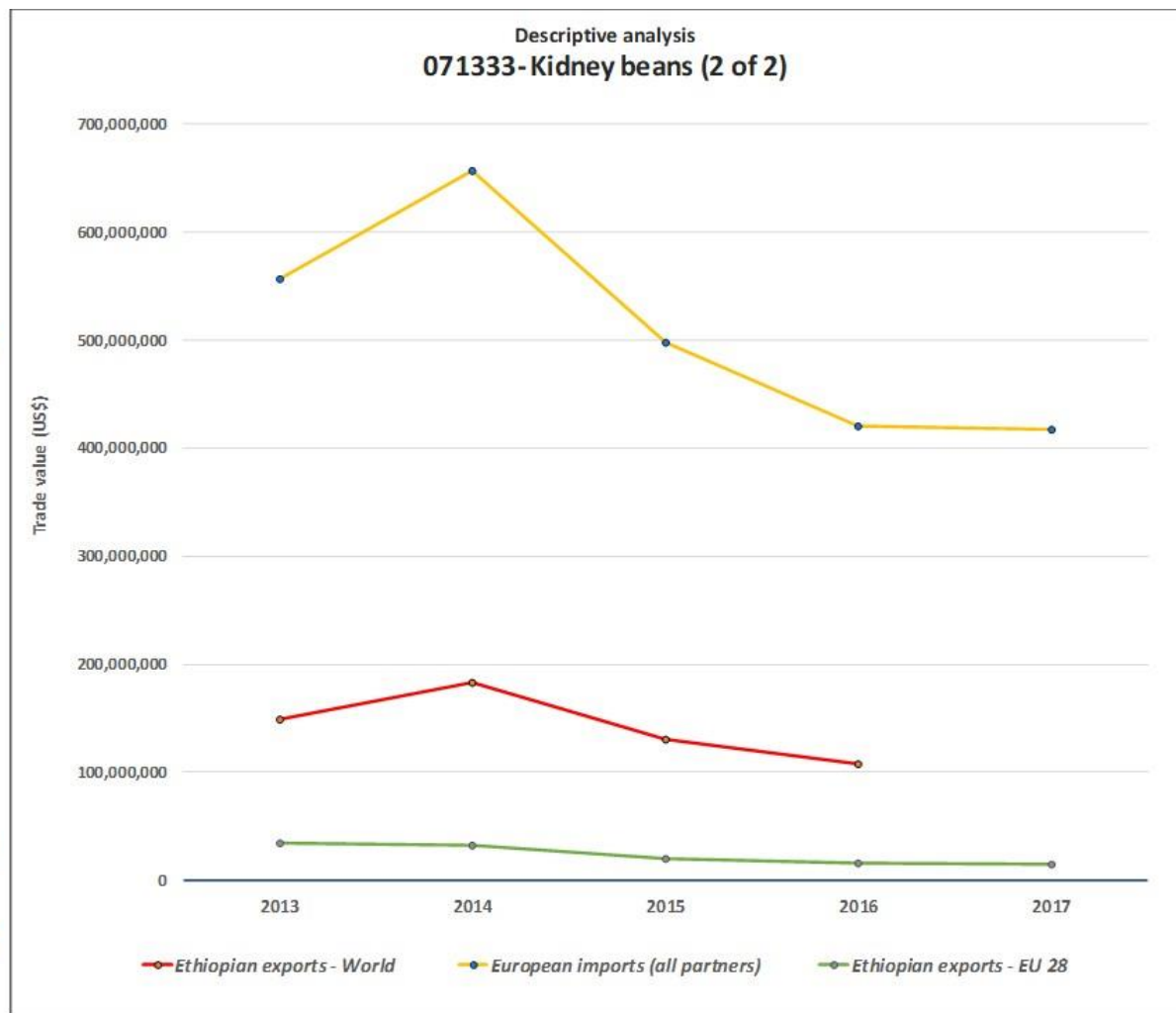


Production capacity	Volatile
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	N/D

Exports volume	\$142,578,986
Exports (to world)	Volatile
Exports (to Europe)	Declining
Main European partners	
1- Portugal (16%), 2- Bulgaria (13%), 3- Belgium (11%), 4- UK (10%), 5- Italy (10%), 6- Netherlands (9%)	
Export potential to EU & EFTA	High
Current export potential US\$ thousand / % of unused potential	\$31,517 / 37%
Projected export potential US\$ thousand / % of unused potential	\$65,123 / 60%

Trend opportunities - special markets	High
Healthy food, organic markets (can be an opportunity because the availability is often not sufficient to meet the growing demand), vegetarian, food convenience, ethnic, social responsibility	

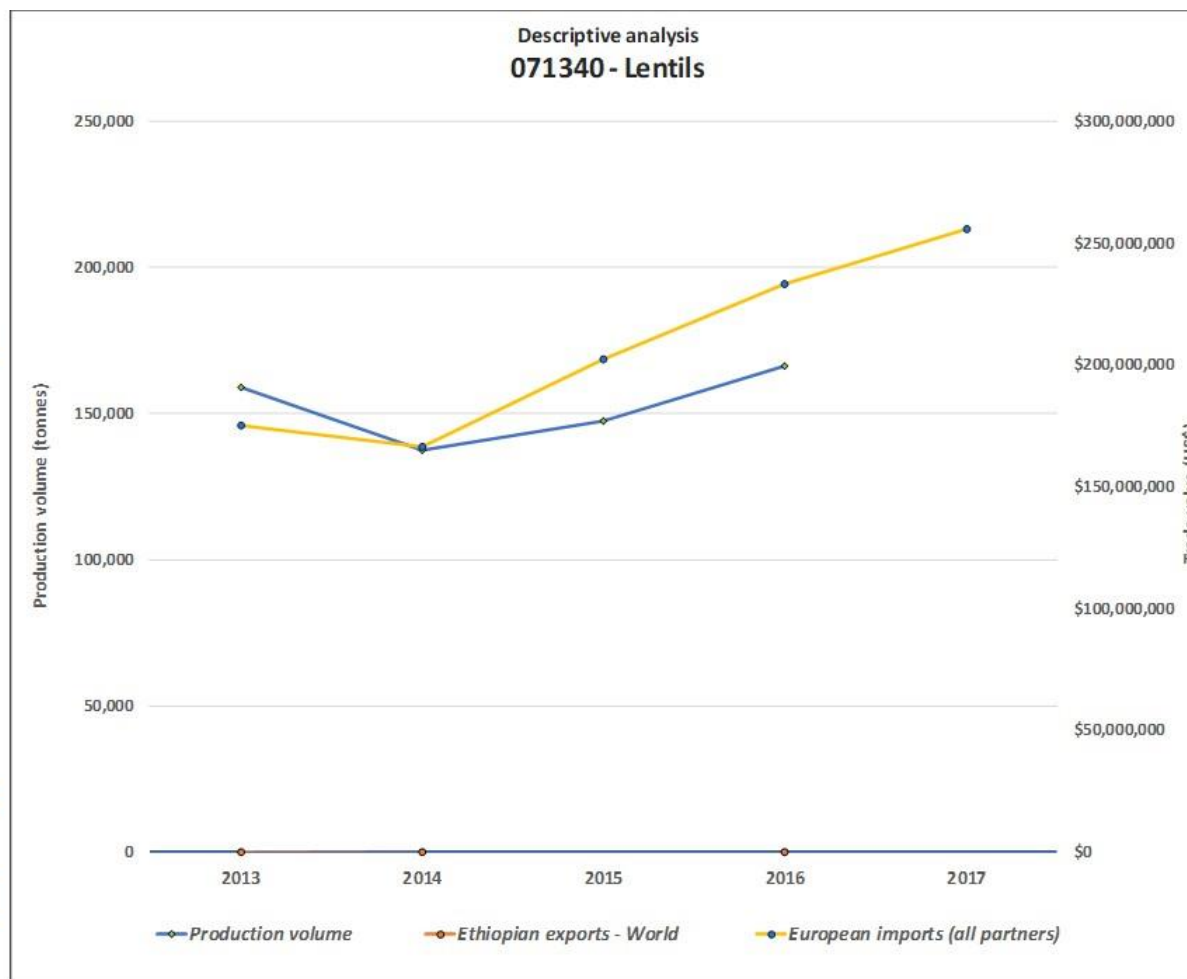
Import volume	\$509,920,651
Competition	Some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- Italy (28%), 2- UK (18%), 3- Spain (11%), 4- France (7%), 5- Portugal (6%), 6- Belgium (4%)	
Main exporters to EU	
1- Canada (25%), 2- China (24%), 3- USA (20%), 4- Argentina (14%), 5- Ethiopia (5%), 6- Egypt (5%)	



Main use: Food processing, canning and preparation

11.2.5 Lentils

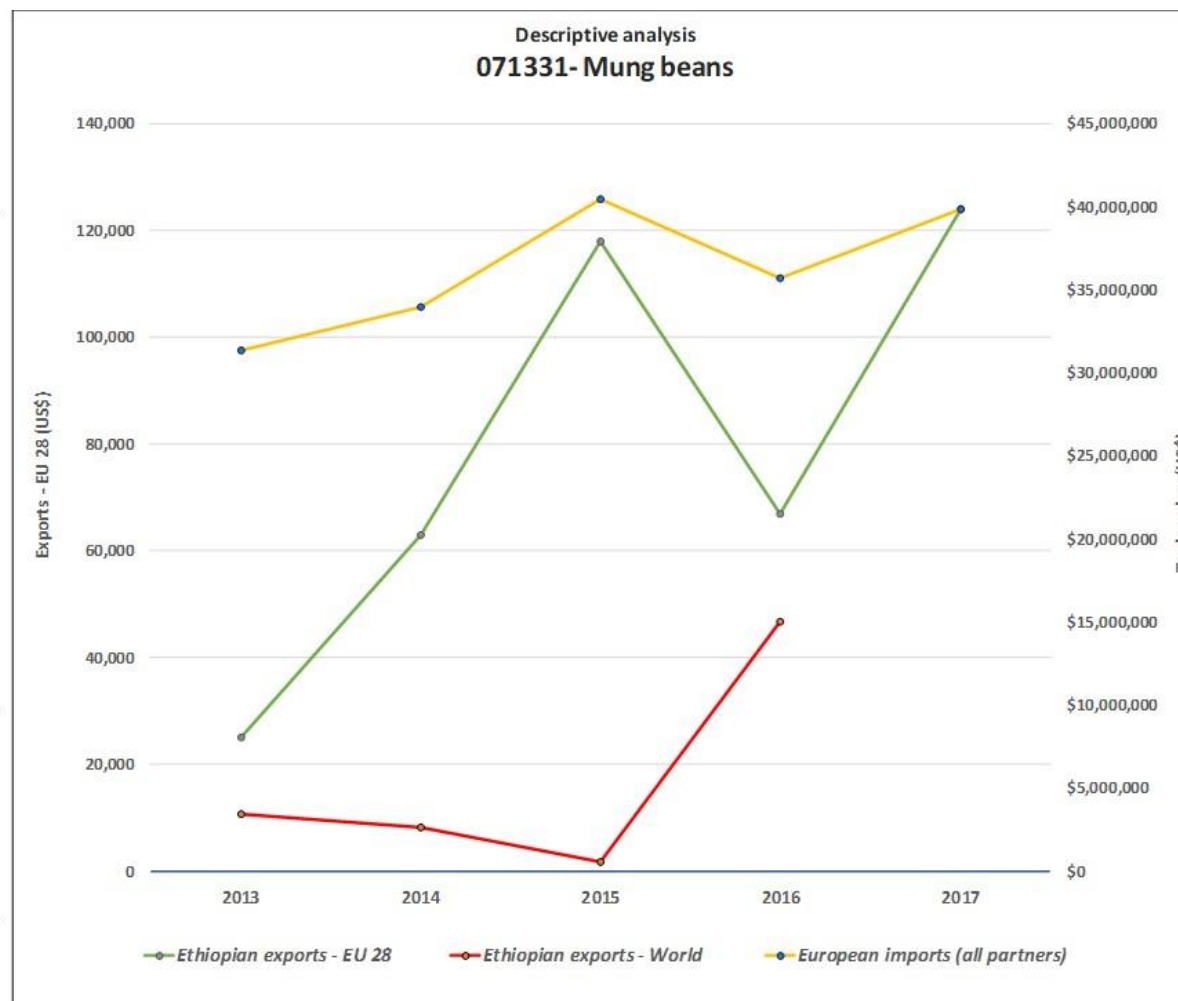
Production capacity	Stable
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	N/D
Exports volume	\$7,457
Exports (to world)	Volatile
Exports (to Europe)	N/D
Main European partners	
N/D	
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	
High Healthy food, very interesting possibilities in the organic market, vegetarian, food convenience, ethnic, social responsibility	
Import volume	\$206,550,057
Competition	Mainly DN
European market demand (imports)	Growing
Main European importers (from all partners)	
1- Spain (27%), 2- Italy (14%), 3- Germany (14%), 4- UK (10%), 5- France (9%), 6- Belgium (5%)	
Main exporters to EU	
1- Canada (49%), 2- USA (22%), 3- Turkey (17%), 4- China (7%), 5- Russian Federation (1%), 6- India (1%)	



Main use: Food processing, Health food, Ethnic food

11.2.6 Mung beans

Production capacity	N/D
Expected production developments	High (government focused on doubling agricultural production)
Potential for certified production	N/D
Exports volume	\$5,436,582
Exports (to world)	Volatile
Exports (to Europe)	Volatile
Main European partners	
1- Portugal (21%), 2- Czech Republic (19%), 3- France (17%), 4- Belgium (17%), 5- Italy (16%), 6- Germany (10%)	
Export potential to EU & EFTA	High
Current export potential US\$ thousand / % of unused potential	\$400 / 90%
Projected export potential US\$ thousand / % of unused potential	\$768 / 94%
Trend opportunities - special markets	
High Healthy food, natural-organic markets, food convenience, ethnic foods, social responsibility, vegetarian, potential as "package of pulses"	
Import volume	\$36,252,283
Competition	Some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- UK (41%), 2- Netherlands (15%), 3- Germany (11%), 4- Belgium (7%), 5- Spain (6%), France (6%)	
Main exporters to EU	
1- Myanmar (37%), 2- China (30%), 3- Australia (8%), 4- Thailand (4%), 5- Argentina (3%), 6- India (3%)	



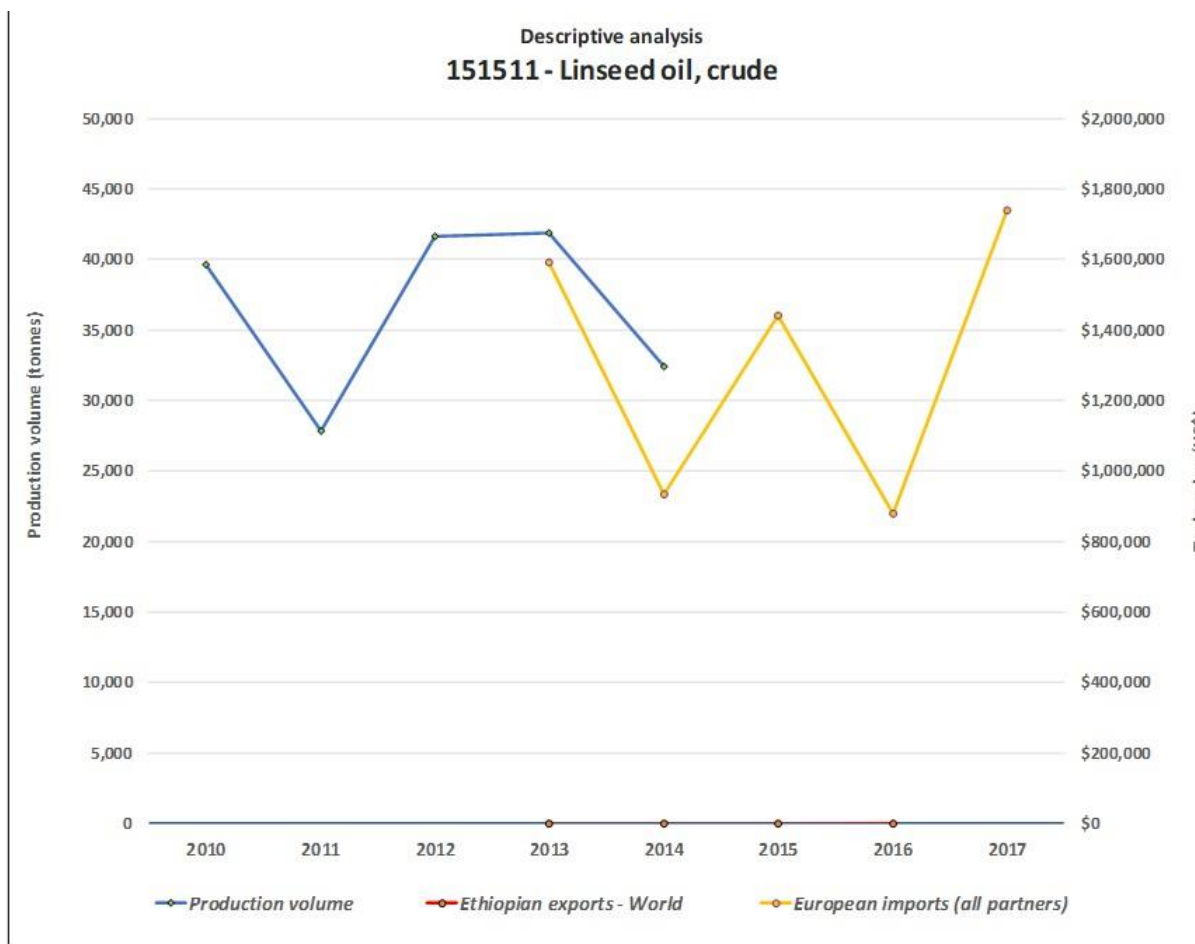
Main use: Food processing, canning and preparation, Ethnic foods

11.3 Value-added products (oils and flours)

Criteria/subcriteria	Sesame oil		Linseed oil, crude		Linseed oil, other than crude		Safflower oil		Niger oil		Mustard flour and meal and prepared mustard		Mustard oil		Soybean oil		Soybean flours and meals	
	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight	%	Weight
1 Production capacity		2.5		2.9		2.9		2.9		2.5		2.5		2.5		2.5		2.5
1.1 Developments over the 5 last years	N/D	N/D	33	1.65	33	1.65	33	1.65	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
1.2 Expected developments in production for the short and long term	25	2.5	25	1.25	25	1.25	25	1.25	25	2.5	25	2.5	25	2.5	25	2.5	25	2.5
1.3 Potential for certified production	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
2 Export capacity of Ethiopia		0.5		0.7		5.0		0.5		5.0		0.7		0.7		0.7		0.7
2.1 Export volume	0	0.0	0	0.0	N/D	N/D	0	0.0	N/D	N/D	0	0.0	0	0.0	0	0.0	0	0.0
2.2 Worldwide exports over the 5 last years	33	0.5	33	0.7	N/D	N/D	0	0.0	N/D	N/D	33	0.7	33	0.7	33	0.7	33	0.7
2.3 Exports to Europe over the 5 last years	0	0.0	N/D	N/D	N/D	N/D	33	0.5	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
2.4 Export potential to EU&EFTA	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
3 Trends on the European market		20.0		15.0		15.0		10.0		20.0		0.0		10.0		10.0		0.0
3.1 Trend opportunities - special markets	100	20.0	75	15.0	75	15.0	50	10.0	100	20.0	N/D	N/D	50	10.0	50	10.0	N/D	N/D
4 Market demand		12.4		7.5		7.5		16.7		10.0		9.9		12.5		12.5		7.5
4.1 Import volume	66	6.6	33	3.3	33	3.3	100	10.0	N/D	N/D	66	6.6	100	10.0	100	10.0	33	3.3
4.2 Competition	50	2.5	50	2.5	50	2.5	100	5.0	N/D	N/D	0	0.0	50	2.5	50	2.5	50	2.5
4.3 Demand on the European market over the last 5 years (imports)	66	3.3	33	1.7	33	1.7	33	1.7	N/D	N/D	66	3.3	0	0.0	0	0.0	33	1.7
5 European requirements																		
5.1 Barriers/limitants																		
Total		35.4		26.0		30.4		30.0		37.5		13.1		25.7		25.7		10.6

11.3.1 Linseed oil, crude

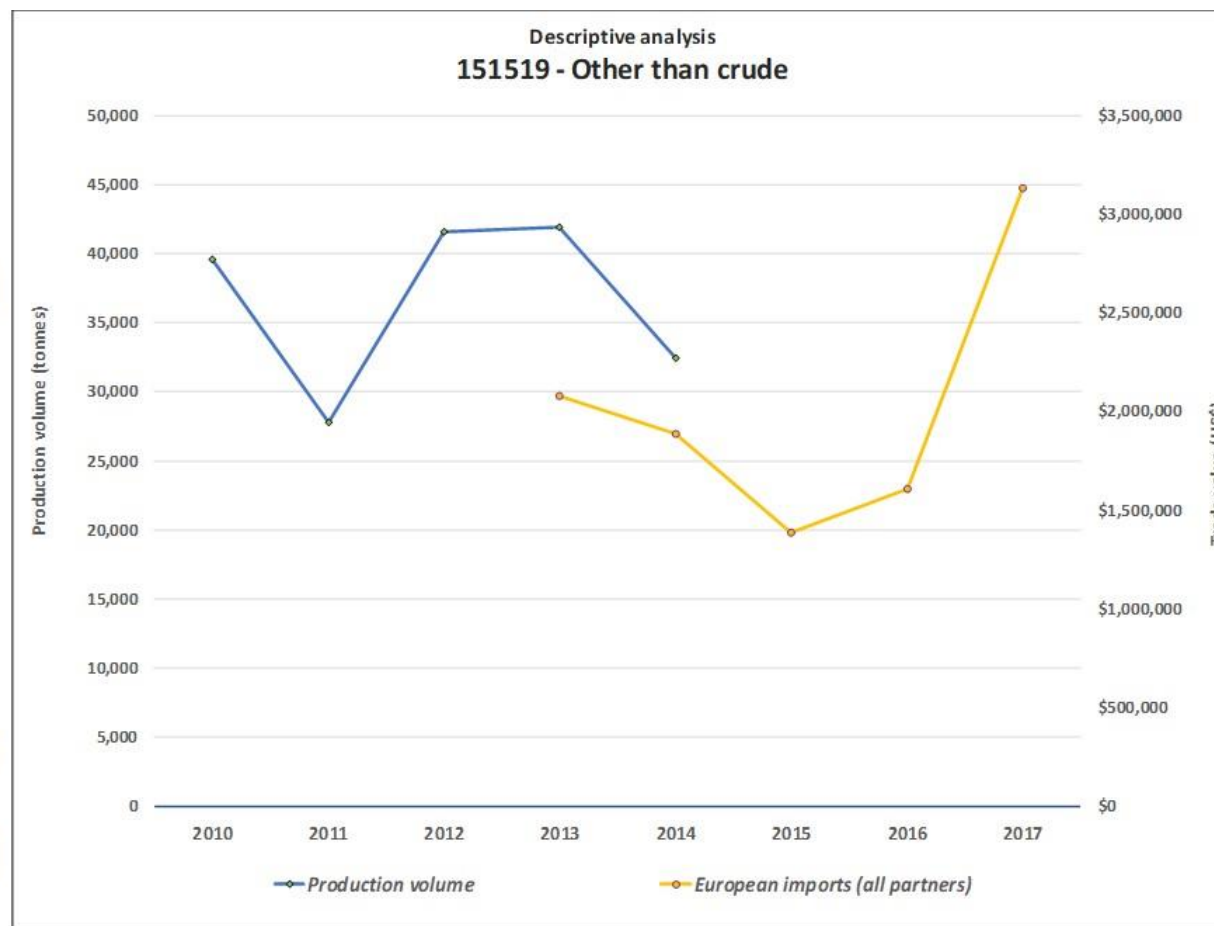
Production capacity	Volatile (crude and other than crude)
Expected production developments	Low
Potential for certified production	N/D
Exports volume	\$193
Exports (to world)	Volatile
Exports (to Europe)	N/D
Main European partners	
N/D	
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	
Moderate	
General markets for linseed: Healthy foods, organic, Industrial uses (varnishes, paints and other industrial manufacturing)	
Import volume	\$1,317,113
Competition	Some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- Germany (30%), 2- Netherlands (20%), 3- UK (15%), 4- Italy (9%), 5- Belgium (8%), 6- France (5%)	
Main exporters to EU	
1- USA (61%), 2- Ukraine (17%), 3- Canada (7%), 4- Switzerland (6%), 5- Russian Federation (3%), 6- Belarus (1%)	



Main use: Medicinal, Food service: cooking oil, Non-food applications: paints, soap and varnishes

11.3.2 Linseed oil, other than crude

Production capacity	Volatile (crude and other than crude)
Expected production developments	Low
Potential for certified production	N/D
Exports volume	N/D
Exports (to world)	N/D
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	Moderate
General markets for linseed: Healthy foods, organic, Industrial uses (varnishes, paints and other industrial manufacturing)	
Import volume	\$2,019,726
Competition	some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- Netherlands (34%), 2- Germany (22%), 3- UK (13%), 4- Italy (5%), 5- Belgium (3%), 6- Poland (3%)	
Main exporters to EU	
1- USA (54%), 2- Ukraine (27%), 3- Switzerland (6%), 4- China (4%), 5- Canada (2%), 6- Chile (2%)	



Main use: Medicinal, Food service: cooking oil, Non-food applications: paints, soap and varnishes

11.3.3 Mustard flour and meal and prepared mustard

Production capacity	N/D
Expected production developments	Low
Potential for certified production	N/D

Exports volume	\$2,428
Exports (to world)	Volatile
Exports (to Europe)	N/D

Main European partners	
N/D	

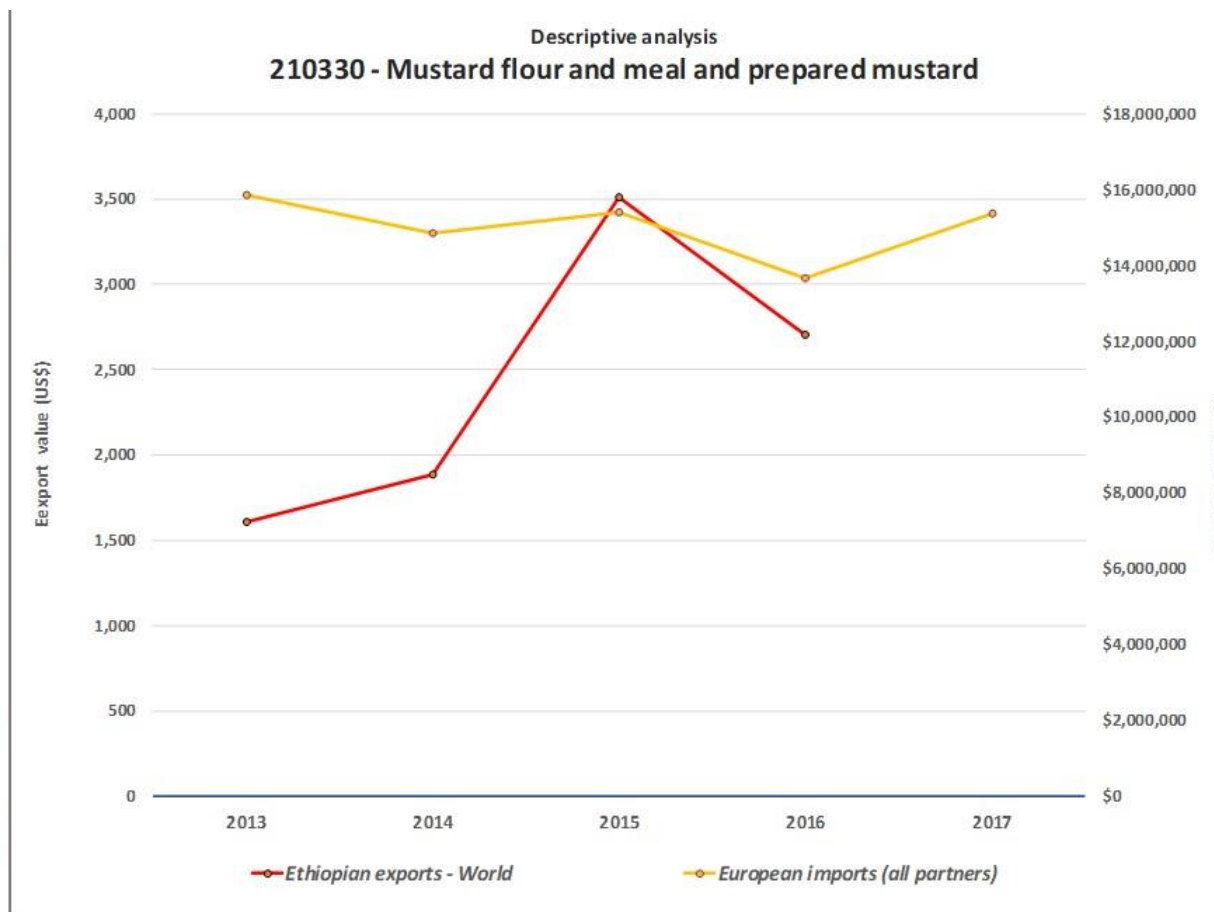
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D

Trend opportunities - special markets	N/D
N/D	

Import volume	\$15,026,808
Competition	Mainly DN
European market demand (imports)	Stable

Main European importers (from all partners)	
1- UK (17%), 2- Germany (15%), 3- Netherlands (8%), 4- Spain (8%), 5- Belgium (8%), 6- Ssweden (7%)	

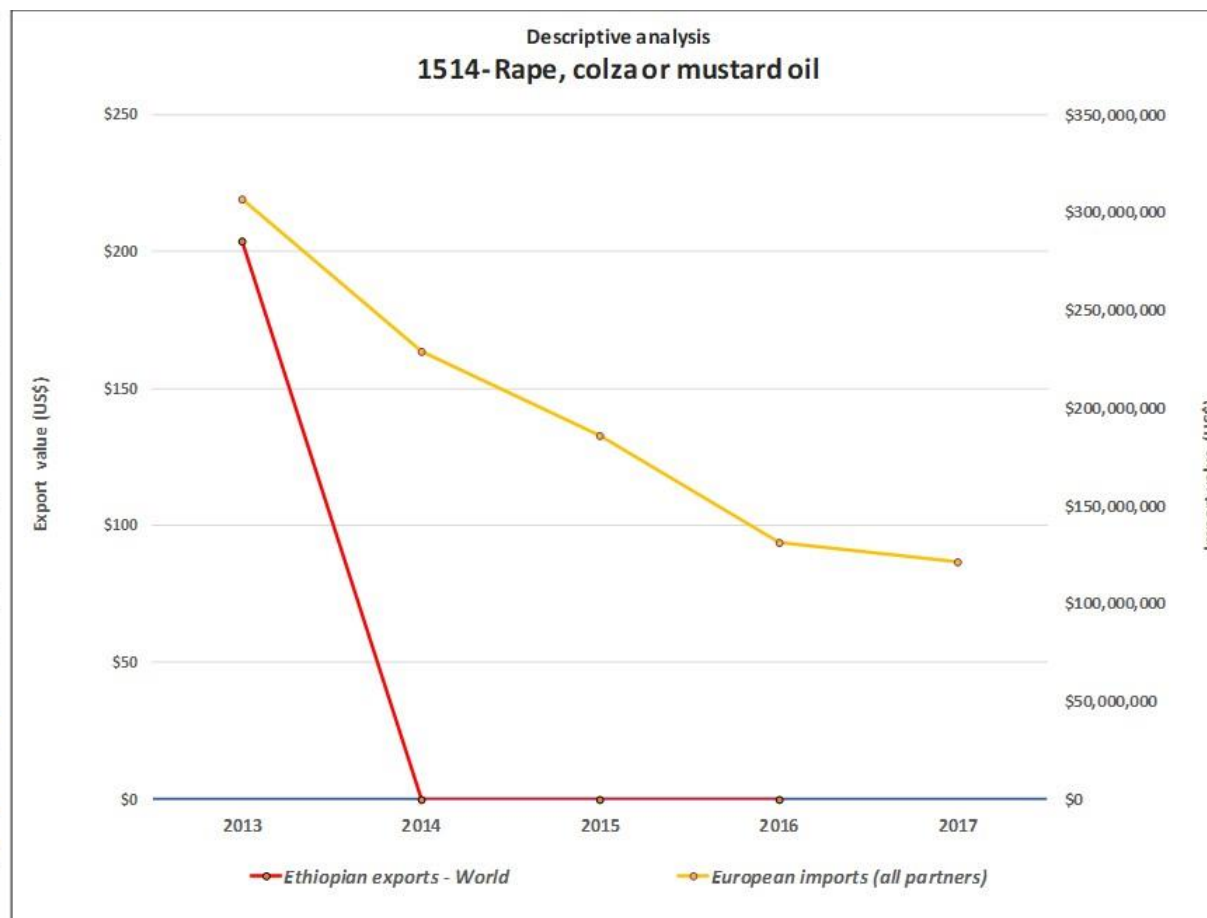
Main exporters to EU	
1- USA (59%), 2- Canada (24%), 3- Switzerland (6%), 4 -Ukraine (2%), 5- Thailand (2%), 6- Russian Federation (2%)	



Main use: Food processing and preparation

11.3.4 Mustard oil

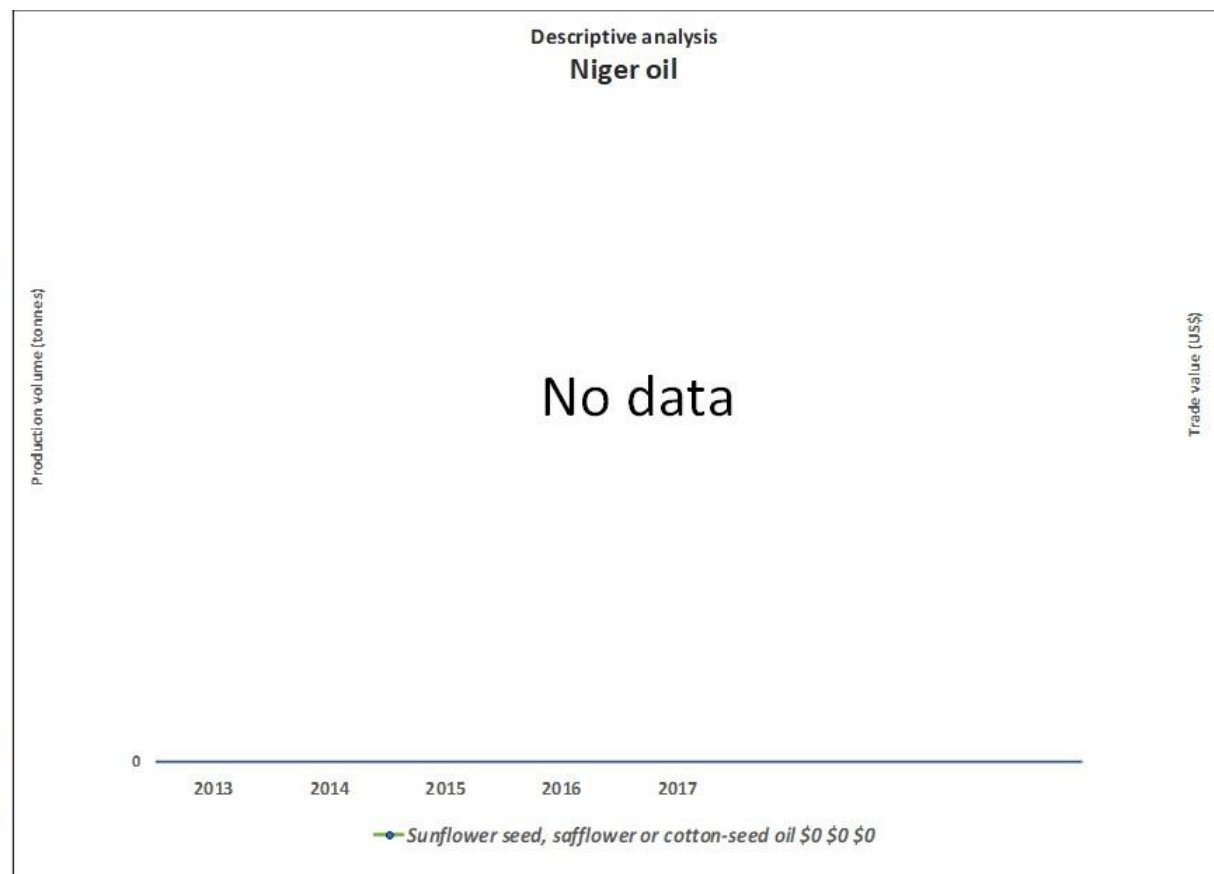
Production capacity	N/D
Expected production developments	Low
Potential for certified production	N/D
Exports volume	\$204
Exports (to world)	Volatile
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	Neutral
Trends for vegetable oils: Health and wellness	
Import volume	\$195,022,303
Competition	Some presence of DN
European market demand (imports)	Declining
Main European importers (from all partners)	
1- Netherlands (19%), 2- Belgium (13%), 3- Germany (10%), 4- Sweden (8%), 5- Czechia (7%), 6- France (6%)	
Main exporters to EU	
1-Russian Federation (44%), 2- Ukraine (27%), 3- Belarus (17%), 4- Canada (5%), 5- Serbia (5%), 6- Bosnia (1%)	



Main use: Cooking oil in some countries (Bangladesh, Pakistan)

11.3.5 Niger oil

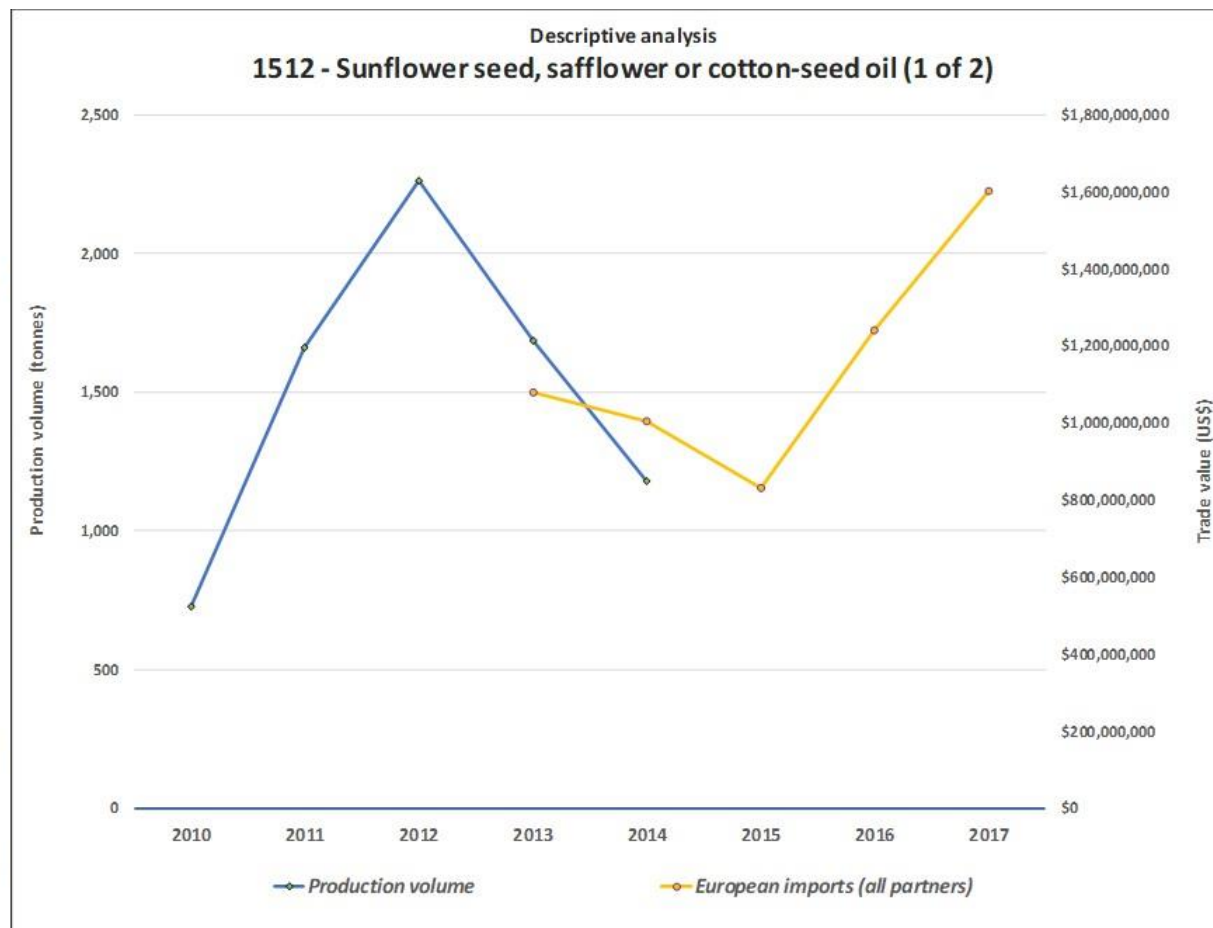
Production capacity	N/D
Expected production developments	Low
Potential for certified production	N/D
Exports volume	N/D
Exports (to world)	N/D
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	High
Health and wellness, novel, cold press (possible high value trendy product in years to come), organic	
Import volume	N/D
Competition	N/D
European market demand (imports)	N/D
Main European importers (from all partners)	N/D
Main exporters to EU	N/D



Main use: Nutraceutical (rheumatism, insomnia, immune system, blood circulation, skin care)

11.3.6 Safflower oil

Production capacity	Volatile
Expected production developments	Low
Potential for certified production	N/D
Exports volume	\$622
Exports (to world)	Declining
Exports (to Europe)	Volatile
Main European partners	
1- Germany (100%)	
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	
Neutral	
Trends for vegetable oils: Health and wellness	
Import volume	\$1,150,833,940
Competition	No presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- Netherlands (15%), 2- Spain (13%), 3- Belgium (13%), 4- Italy (12%), 5- Germany (11%), 6- UK (10%)	
Main exporters to EU	
1- Ukraine (77%), 2- Russian Federation (6%), 3- Argentina (6%), 4- Rep. of Moldova (5%), 5- Serbia (4%), 6- Bosnia (1%)	



Production capacity	Volatile
Expected production developments	Low
Potential for certified production	N/D

Exports volume	\$622
Exports (to world)	Declining
Exports (to Europe)	Volatile

Main European partners	
1- Germany (100%)	

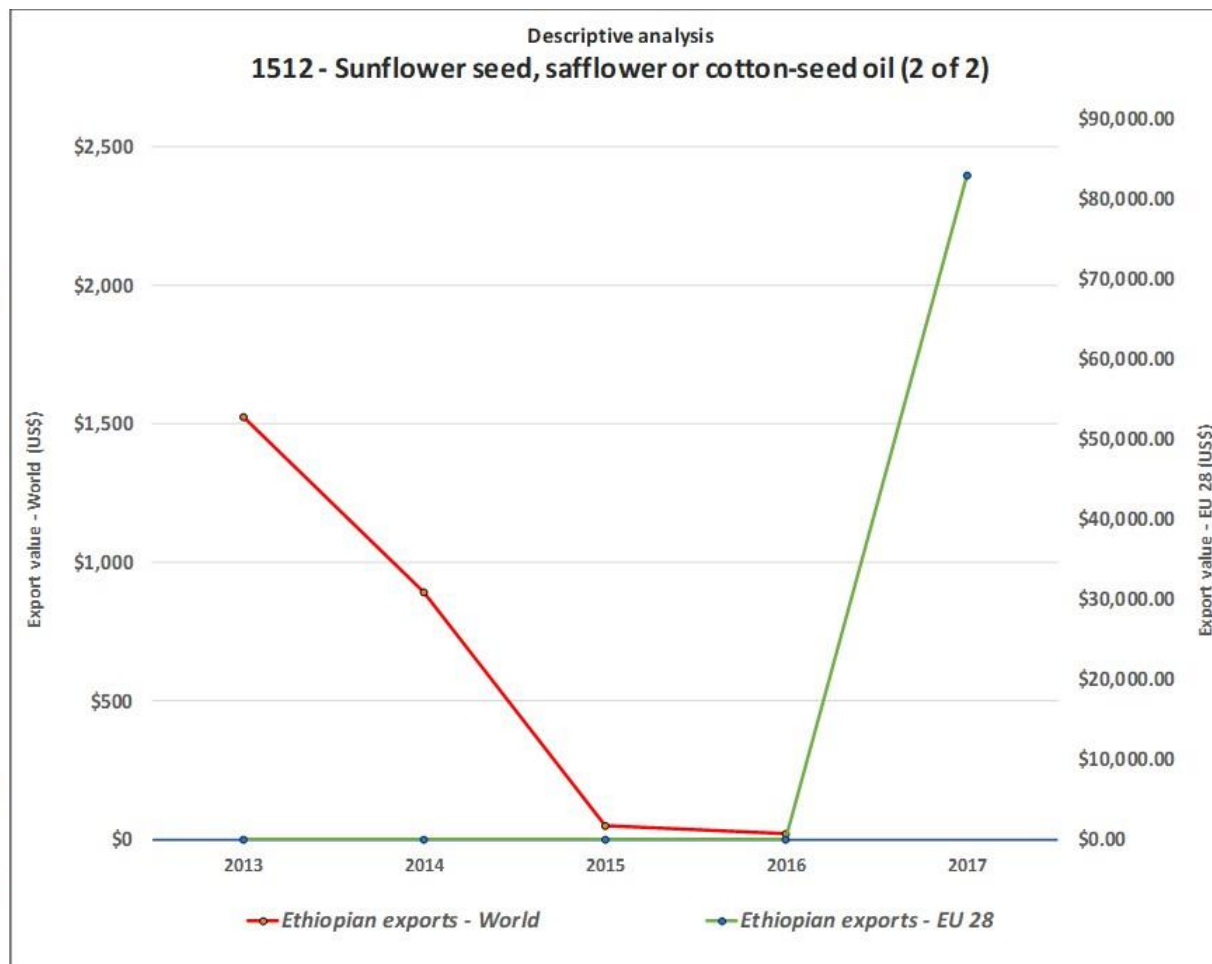
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D

Trend opportunities - special markets	Neutral
Trends for vegetable oils: Health and wellness	

Import volume	\$1,150,833,940
Competition	No presence of DN
European market demand (imports)	Volatile

Main European importers (from all partners)	
1- Netherlands (15%), 2- Spain (13%), 3- Belgium (13%), 4- Italy (12%), 5- Germany (11%), 6- UK (10%)	

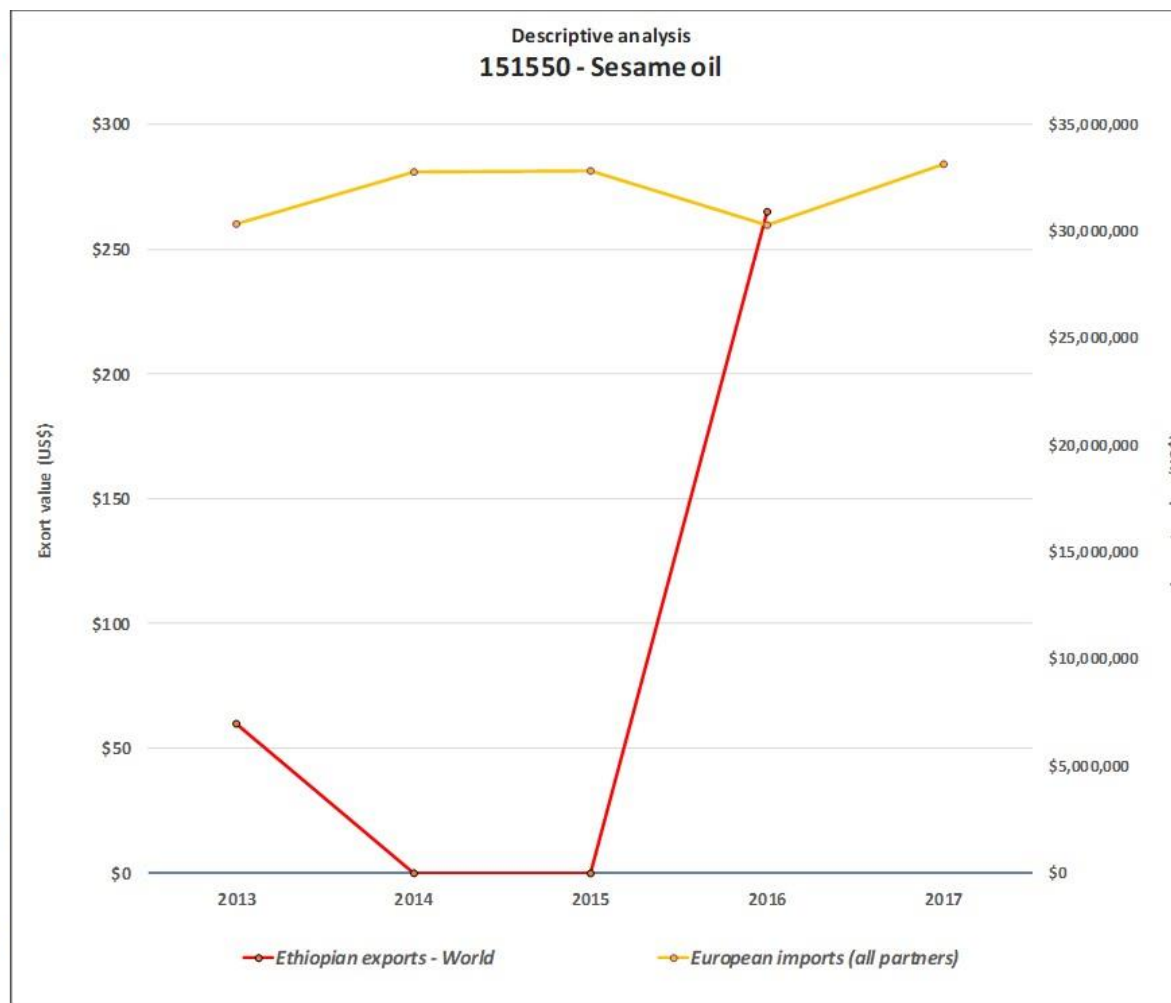
Main exporters to EU	
1- Ukraine (77%), 2- Russian Federation (6%), 3- Argentina (6%), 4- Rep. of Moldova (5%), 5- Serbia (4%), 6- Bosnia (1%)	



Main use: Medicinal, Food service: edible oil, Non-food applications: cosmetics

11.3.7 Sesame oil

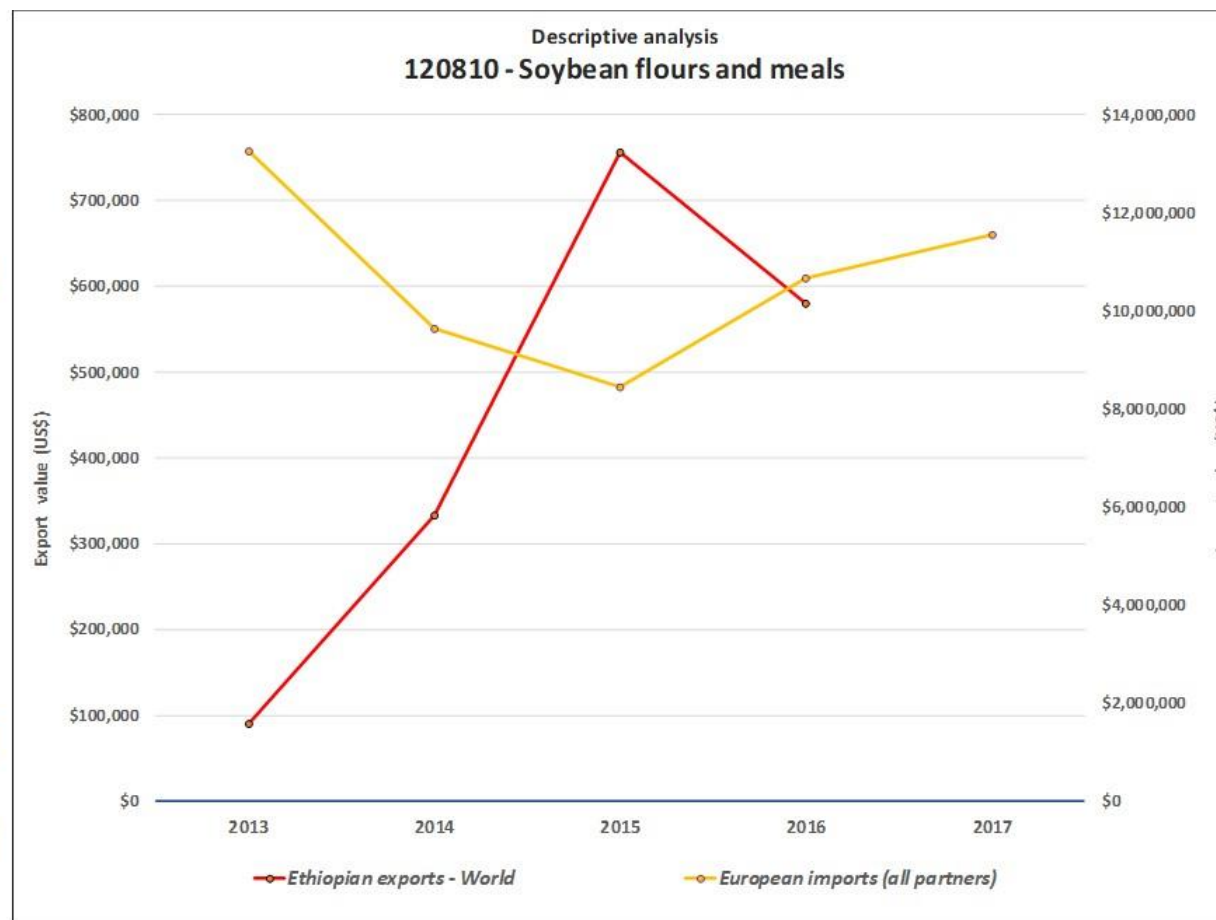
Production capacity	N/D
Expected production developments	Low Constrains on management and investment
Potential for certified production	N/D
Exports volume	\$163
Exports (to world)	Volatile
Exports (to Europe)	N/D
Main European partners	
N/D	
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	
High High quality products, natural foods, light oils, healthy oils, oils for dressings, ethnic foods, clean label, cold-pressed	
Import volume	\$31,870,097
Competition	Some presence of DN
European market demand (imports)	Stable
Main European importers (from all partners)	
1- UK (27%), 2- Germany (18%), 3- France (12%), 4- Netherlands (12%), 5- Belgium (9%), 6- Italy (3%)	
Main exporters to EU	
1- Mexico (44%), 2- Singapore (15%), 3- China (10%), 4- India (6%), 5- USA (4%), 6- Other Asia, nes (3%)	



Main use: Food service: premium, ethnic and health edible oil, Non-food applications: cosmetic, therapeutic, bio-industrial uses, medicinal purpose

11.3.8 Soybean flours and meals

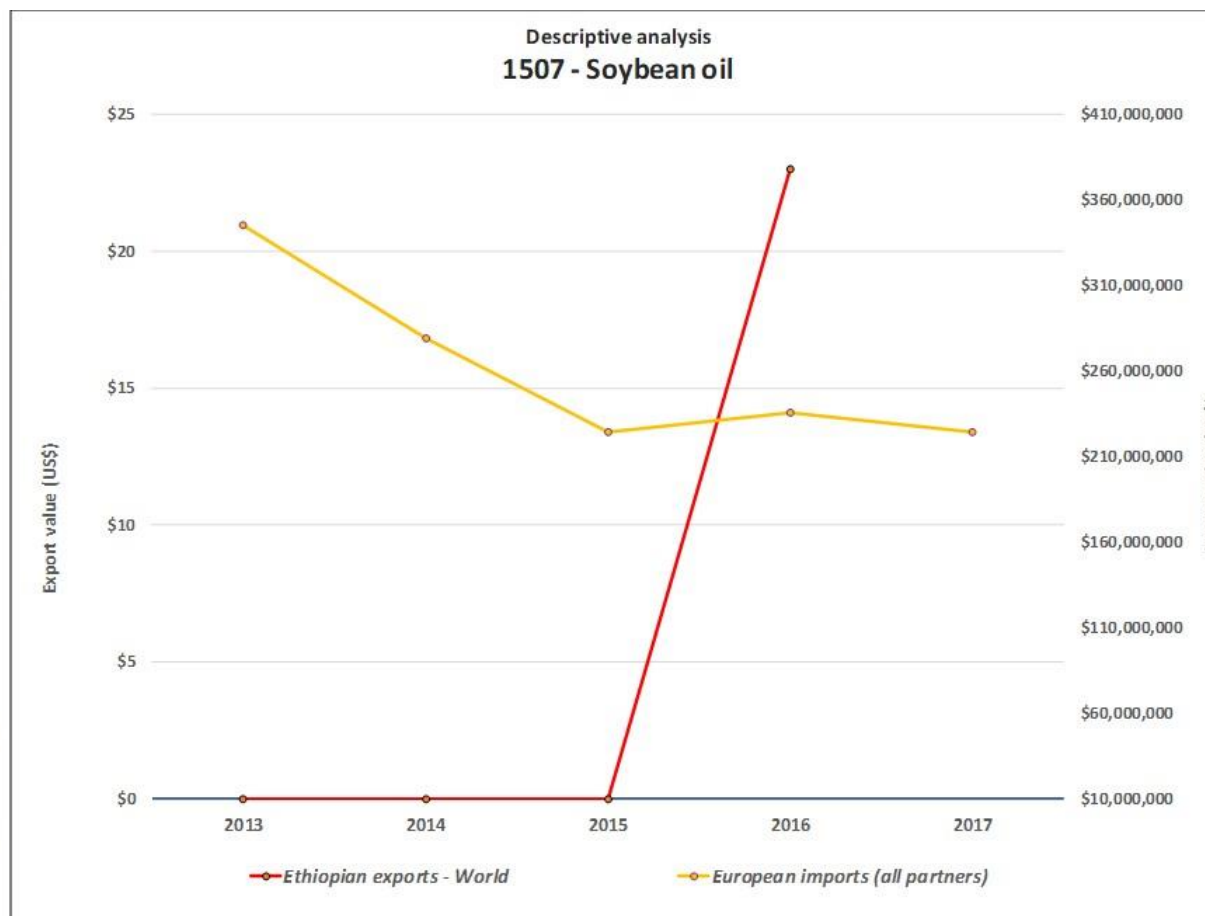
Production capacity	N/D
Expected production developments	Low
Potential for certified production	N/D
Exports volume	\$440,247
Exports (to world)	Volatile
Exports (to Europe)	N/D
Main European partners	N/D
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	N/D
N/D	
Import volume	\$10,713,051
Competition	Some presence of DN
European market demand (imports)	Volatile
Main European importers (from all partners)	
1- Belgium (23%), 2- Spain (13%), 3- Portugal (10%), 4- Germany (8%), 5- Ireland (7%), 6- Italy (6%)	
Main exporters to EU	
1- Serbia (68%), 2- USA (9%), 3- India (9%), 4- China (7%), 5- Israel (1%), 6- Sri Lanka (1%)	



Main use: Food processing and preparation, Animal feed (meal and cake)

11.3.9 Soybean oil

Production capacity	N/D
Expected production developments	Low
Potential for certified production	N/D
Exports volume	
Exports (to world)	Volatile
Exports (to Europe)	N/D
Main European partners	
N/D	
Export potential to EU & EFTA	N/D
Current export potential US\$ thousand / % of unused potential	N/D
Projected export potential US\$ thousand / % of unused potential	N/D
Trend opportunities - special markets	
Neutral	
Organic	
Import volume	
\$261,870,320	
Competition	Some presence of DN
European market demand (imports)	Declining
Main European importers (from all partners)	
1- UK (16%), 2- Belgium (12%), 3- Germany (11%), 4- Netherlands (11%), 5- Poland (9%), 6- France (6%)	
Main exporters to EU	
1- Norway (24%), 2- Russian Federation (21%), 3- Ukraine (19%), 4- Serbia (16%), 5- Paraguay (12%), 6- Brazil (2%)	



Main use: Food service: edible oil, Non-food applications: industrial use, bio-diesel production

12. Appendix III: List of in-depth interviews with oilseeds and pulses stakeholders in Ethiopia

Table 19 List of in-depth interviews with producers, processors and exporters of oilseeds and pulses in Ethiopia. X signifies continuous exports, whereas O signifies either small amounts or past export activities only (S=Sesame, N=Niger seeds, K=Kidney beans, C=Chickpeas, M=Sesame oil and O=Niger seed oil).

Company Name	Type of Organization	Producer						Processor						Exporter - world						Exporter - EU						
		S	N	K	C	M	O	S	N	K	C	M	O	S	N	K	C	M	O	S	N	K	C	M	O	
ACOS Ethiopia	Exporter-Pulses															X	X						X	O		
Bale Green	Producer chickpeas				X																					
EPOSPEA	Association													X												
Fair & Sustainable Ethiopia/SBN Network	Sesame Consultant	X																								
South Federation	Exporter-Pulses and Oilseed	X		X		X								X		X		X								
MIN2 Investment Group	Exporter-Pulses and Oilseed													X	X		X						O			
Wedera Union	Exporter-Pulses and Oilseed				X																					
Kihedam Trading PLC	Organic Sesame and Soybean farmer	X					X							X					X	X						
SELET Hulling	Exporters-Oilseed																				X					
Tsehay Union	Exporter-Pulses and Oilseed																									
Mehari Yohannes General Import Export	Exporter-Pulses																									
Wereta International Business PLC	Exporter-Pulses, Oilseeds, spices													X												
NN	Oil processor						X							X												
TSEHAY FELEKE AND FAMILY TRADING PLC	Exporter - Oilseeds and spices													X	X					O	X			O		
AMBASEL	Tahini processor, exporter						X							X												
TOTALS		3	0	1	2	1	1	2	0	0	0	0	0	8	2	2	2	1	1	2	1	0	0	0		

13. requirements

Appendix IV: European

13.1 General requirements

Exporters of oilseeds and pulses must comply with strict requirements to be allowed on the European market. In both groups of products, food safety (including mechanisms to prevent contamination) is a major concern and is an important focus in legislative and additional requirements.

In terms of niche requirements, the growing importance of organic and fair trade schemes follows the European trend towards ethical consumption (CBI Ministry of Foreign Affairs 2016i).

The following requirements apply in general to oilseeds, as well as grains and pulses. Specific requirements by product (sesame seeds, mung beans, soya beans and sesame oil, and tahini) are detailed in sections below.

Food safety: traceability, hygiene and control

Food safety is a key issue in European food legislation. All food products in Europe must comply with the General Food Law (Regulation (EC) No 178/2002), which regulates food safety in the EU. It also includes provisions on the traceability of food.

For exporters to Europe, the buyers (minimally) expect to know and document the exporter's suppliers and the products used during the production process. Labelling final products for traceability must be done in case a food safety problem would occur.

In short, it is important to ensure genuine traceability 'from field to fork'. But the current actual legal requirement for primary processors or exporters is one step back and one step forward

An important aspect involved in controlling food-safety hazards is defining critical control points (HACCP) by implementing food-management principles (CBI Ministry of Foreign Affairs 2016i).

Another important aspect involves subjecting food products to official controls. Products that are not considered safe will be denied access to the EU. Products that are new in the European food market (e.g. those not widely consumed prior to 1997) are considered 'novel foods' and have specific legislation.

I. Food control:

To ensure food safety and avoid environmental damage, the EU has restricted the use of certain chemicals (MRLs) in several Regulations and Directives. Products are subjected to official controls, which are conducted in order to ensure that all food marketed in the EU is safe (i.e. in compliance with the requirements applicable to particular products). There are three types of checks:

- a) Documentary checks
- b) Identity checks
- c) Physical checks

In the event of repeated non-compliance of specific products originating from countries, the EU can decide to conduct more intensive controls or impose emergency measures. Although controls can be carried out at all stages of import and marketing in the EU, most take place at the points of entry into the EU (CBI Ministry of Foreign Affairs 2016j).

II. Contaminants

To avoid negative impact on the quality of food and risks to human health, the EU has set limits for several contaminants as heavy metals and mycotoxins, which are natural by-products of mould and very common on grains and pulses cultivated in humid climates (CBI Ministry of Foreign Affairs 2016j).

In this context, the *Commission Regulation (EC) No 1881/2006*, sets the legal limits of relevant contaminants by product or product group.

III. Labelling

Food placed on the EU market must conform to the following legislation with regards to food labelling:

- Generic name and, if applicable, its treatment;
- List of ingredients, including allergens;
- Net quantity;
- Date of minimum durability;
- Special conditions for keeping or use;
- Name and address of the manufacturer, packager or importer;
- Place of origin;
- Lot marking on pre-packaged foodstuffs.

Novel food and genetically modified foods require additional labelling (e.g. with regard to composition, nutritional value, intended use and materials that may have health implications and/or raise ethical concerns) (CBI Ministry of Foreign Affairs 2016j).

Additional requirements

I. Food safety certification:

In addition to the minimum and mandatory food safety standards, European buyers increasingly demand compliance with even more comprehensive standards. Certifications of general quality and food safety management systems from recognised and trustworthy sources demonstrate the supplier's commitment to high and consistent quality and safety. This also applies to products processing.

Some buyers, including supermarkets and private-label packers, will require standards which go beyond HACCP such as (CBI Ministry of Foreign Affairs 2016i; CBI Ministry of Foreign Affairs 2016j):

- British Retail Consortium (BRC): contains more extensive rules on Good Manufacturing Practices (GMP) than HACCP, e.g. regarding organisation and communication.
- International Food Standard (IFS): corresponds to ISO 9001, but with a focus on food safety, HACCP, hygiene, the manufacturing process and business surroundings.
- ISO 22000: combines the HACCP plan with prerequisite programmes (PRPs). It specifies the requirements for a food safety management system along the food chain, up to the point of final consumption.
- FSSC22000: based on existing international standards ISO 22000 and ISO/TS 22002-1.
- GLOBALG.A.P.: a pre-farm-gate standard covering the process from farm input to non-processed product.
- GMP+: International standard for feed safety and responsibility throughout the supply chain for animal feed.

All the above-mentioned management systems are recognised by the Global Food Safety Initiative (GFSI), which means that any of them should be accepted by several major retailers in Europe.

In addition, the SEDEX Members Ethical Trade Audit (SMETA) is an important tool to some of the main European/international companies. This could be used as a tool to streamline exporters information to multiple customers around four pillars: Labour Standards, Health & Safety, Environment and Business Ethics.

II. Social compliance and sustainability

European buyers may expect from exporters to comply with their supplier codes of conduct regarding social responsibility, which are often based on the International Labour Organisation (ILO) labour standards. This can be the importer's own code of conduct or a code of conduct as a part of an initiative in which the importer is participating. Meaning that the exporter and its suppliers respect local environmental and labour laws. The adoption of those standards is most common among large-scale importers, food manufacturers and retailers (CBI Ministry of Foreign Affairs 2016i).

Social compliance is supported by several important initiatives, including the following (CBI Ministry of Foreign Affairs 2016j):

- *Business Social Compliance Initiative (BSCI)*: leading business-driven initiative for companies committed to improving working conditions in the global supply chain by adopting a common code of conduct. It is particularly prominent in Western mainland Europe. The initiative of BSCI is in the hands of European companies that share a common code of conduct, improving working conditions of supplying factories and farms.
- *Ethical Trading Initiative (ETI)*: alliance of companies, trade unions and NGOs promoting respect for workers' rights around the globe.
- *Global Social Compliance Programme (GSCP)*: business-driven programme for the continuous improvement of working and environmental conditions in global supply chains.

Requirements for niche markets

I. Organic:

Organic certification is a non-legislative requirement for oilseeds, but in order to market a product as 'organic' on the European market, exporters must comply with the European Regulation for organic production and labelling – which is in itself a legal requirement (CBI Ministry of Foreign Affairs 2016i)

The EU through the Regulation (EC) 834/2007 on organic agriculture has established requirements on the production and labelling requirements with which an organic product of agricultural origin must comply in the EU (CBI Ministry of Foreign Affairs 2016a). This regulation covers not only production and processing, but also the control and labelling of organic food (European Commission 2018b).

In the *Organic farming* quality scheme, farmers, processors and traders, must comply with strict EU requirements if they want to use the EU organic logo or label their products as organic.

The EU requires an equally strict control system with checks carried out at every stage of the organic chain. Every operator (farmer, processor, trader, importer or exporter) is checked at least once a year, or more often on the basis of risk assessment.

Regarding to labelling of organic produce, as well as the standard list of ingredients and nutritional value figures, organic product labels should bear the name of the producer, processor or distributor who last handled the item. The code number of the national certification authority should also be on the label. The Regulation (EU) No 1169/2011 on the provision of food information to consumers gives the minimum requirements on nutrition in its section 3 (Nutrition declaration) (European Commission 2018b).

In order to market organic products in the EU, exporters must use organic production methods and must have used these production methods for at least two years before they can market grains and pulses as organic. In addition, the exporter (or the EU importer) must apply for import authorization from an EU organic control body. After being audited by an accredited certifier, the exporter may affix the EU organic logo on their products, along with the logo of the standard holder (CBI Ministry of Foreign Affairs 2016j).

II. Fair trade:

Fair trade products are produced with an extra focus on the social conditions in the producing areas.

Fairtrade Labelling Organisations International (FLO) is the leading standard-setting and certification organisation for Fairtrade. Products which carry the Fairtrade label indicate that producers are paid a Fairtrade minimum price.

Other fair-trade standards available on the European market are Fair Trade Ecocert and Fair for Life.

Fair Trade Ecocert provides for guaranteed minimum prices, producer support and good agricultural practices; this standard requires an organic certification.

Fair for Life has a similar proposition and is a standard for companies which demonstrate decent working conditions and commit to fair sourcing and responsibilities towards their primary producers. Organic certification is not compulsory for Fair for Life holders (CBI Ministry of Foreign Affairs 2016i).

These certification labels are consumer-focussed and best applicable to products from smallholder farms (CBI Ministry of Foreign Affairs 2016j). Smaller suppliers can anticipate on the future growth of fair trade by preparing their company with regard to the certification requirements (CBI Ministry of Foreign Affairs 2016b).

13.2 Sesame seeds

European buyers have strict requirements for food ingredients. Exporters must comply with these requirements to export sesame seeds to Europe (CBI Ministry of Foreign Affairs 2017).

Legal requirements

The legal requirements for sesame seeds in Europe mainly deal with food safety. Traceability and hygiene are the most important themes covered by legislation.

Special attention should be given to specific contamination sources that sesame seeds are exposed to:

- Salmonella contamination is one of the main risks. The 2001 salmonella outbreak in Germany caused by contaminated sesame seeds found in halva caused European

authorities to tighten food safety provisions. But contamination cases still occur, and greatly affect the image of supplying countries. Recently, a new type of Salmonella serotype was found in sesame products, reaffirming the need for further health controls.

- Contamination by fungus (example: Aflatoxin) is also possible, but less common than Salmonella.
- Pesticide residues are also a possible problem to suppliers, who will need to conform to the maximum levels established by the European Union's legislation (Regulation (EC) No 396/2005). For **organic sesame seeds**, pesticide residues are not tolerated.
- The maximum residue limits for pesticides that might be used on sesame seeds can be found in the EU Pesticide Database (European Commission 2018c) under the code number 0401040.
- Insect infestation should have attention, excrement residues and other external sources such as metal and plastic pieces (CBI Ministry of Foreign Affairs 2017).
- Additives, enzymes and flavourings in food, for this aspect the EU has set a list of permitted flavourings and requirements for their use in foodstuffs intended for human consumption, which includes sesame seed. This is particularly relevant to food manufacturers.
- Hygiene of foodstuffs, food business operators shall put in place, implement and maintain a permanent procedure, or procedures, based on the HACCP principles (CBI Ministry of Foreign Affairs 2016a).

Additional buyer requirements

I. Food safety:

Extra food safety guarantees from exporters could be requested by European buyers, such as the implementation of good agricultural practices and Quality Management Systems (QMS) regarding the production and handling processes.

Suppliers can apply the basic HACCP system mentioned before. However, for supplying food manufacturers, it is necessary to have a certified recognised food safety management system such as ISO 22000, British Retail Consortium (BRC) or International Featured Standards (IFS) (CBI Ministry of Foreign Affairs 2017).

II. Quality requirements

Some of the most important quality factors concerning sesame seeds are:

- Colour
- Odour
- Flavour
- Oil content
- Moisture content
- Size
- Uniformity of seeds
- Purity and damaged/mouldy

- seeds.

Sesame seeds should also be free from mycotoxins and harmful microbiological activity. Salmonella and Aflatoxin contamination are known to be a problem for many producers, and buyers closely monitor these aspects.

The minimum quality requirements for sesame seeds will depend greatly on the end-product the seed will be used for. For example: Tahini needs a sweet taste and aroma, and sesame seeds from some origins are not suitable for this use. For bakery purposes, very high purity levels are required, and some suppliers might not be able to reach these levels. The use of either natural or hulled sesame seeds will also depend on the end-product (CBI Ministry of Foreign Affairs 2017).

The oil level is mainly important when selling the sesame to the oil industry. The level of free fatty acids (FFA) should not be more than two percent, however, many purchasers demand percentages lower than that. The moisture level of the sesame seeds should be 8%. The purity of the sesame seed is specified in terms such as 99-1. It means that each 100 grams of sesame seed contains no more than 1% impurities such as dirt, branches, stones etc. The 1 indicates that no more than 1% is black seeds (Wijnands, Biersteker, and Van Loo 2009).

III. Labelling requirements

Labelling should ensure traceability of individual batches, containing:

- Product name
- Manufacturer's lot or batch code
- Indication if the product is destined for use in food products
- Name and address of exporter
- Product's country of origin
- Shelf life: best before date/use by date
- Net weight/volume in metric units
- Recommended storage conditions
- Organic (if relevant): Name/code of the certifying body and certification number

English language for labelling must be used unless the buyer has indicated otherwise (CBI Ministry of Foreign Affairs 2017).

IV. Packaging requirements

Sesame seeds for the European market are transported in containers in multi-wall paper sacks, bags of woven natural materials (example: jute) or woven plastic polypropylene / polyethylene (PP/PE) bags. Buyers may have specific additional packaging requirements. They are usually shipped in containers with a capacity of between 16 and 19 tonnes, and in 25kg or 50kg bags.

Organic sesame seeds should remain physically separated from conventional sesame seeds (CBI Ministry of Foreign Affairs 2017).

V. Corporate social responsibility and sustainability

Corporate responsibility and sustainability (CSR) are growing in importance in the oilseeds sector and this is also reflected onto companies handling sesame seeds.

Some leading companies on the oilseed market have sustainability policies emphasizing the contact with producers, transparency in their operations, as well their social and environmental impact. However, aspects related to sustainability, social and environmental impact for sesame seeds are less developed than for other products (CBI Ministry of Foreign Affairs 2017).

More information on CSR can be consulted in the *General requirements* section for oilseeds and pulses.

Requirements for niche markets

In general, the market for organic sesame seed is still a niche segment. It could be especially interesting in countries which have a large organic bakery sector. Bread and bakery products have market shares of up to 10% in the organic ranges of Switzerland, the Netherlands, France, Sweden, Finland, and Germany.

Fairtrade Labelling Organisations International (FLO) as the leading standard-setting and certification organisation for Fairtrade has a minimum price for sesame seed (CBI Ministry of Foreign Affairs 2017).

Buyer requirements for sesame seeds in the EU

According to a group of European buyers, the most important quality standards that exporters must comply for sesame seeds are listed in Table 20.

Table 20 Buyer requirements for sesame seeds. See also (Lehr 2016a)

Buyer	Variety	Purity (min %)	Other varieties (max %)	Oil content (min %)	Moisture (max %)	Admixture (max %)	Foreign matter (max %)	FFA (max %)	Mesh size 12 (min %)	Acid value	Mass (min in 1000 grains/g)	Protein (min %)
Louis Dreyfus Kenya Ltd	White	99	1	50	7	1		2				
Shakumbhri Expo Impo Ltd	White	99	1	48		2		1				
Yme Kuiper BV	Roasted natural white	99.95										
	Natural white	99.95										
	Hulled white	99.95										
	Organic	99.95										
Ting Li Dev. Co Ltd	White, black				5-6	1-2		2	60	4		
	Brown			50	5-6	1-2		2	60	4		
GB/T 11761-2006 (Oke and Akintunde 2011)	Grade 1			51	8.0	2.0					2.2	19
	Grade 2			50	8.0	2.0					2.2	19
	Grade 3			49	8.0	2.0					2.2	19
	Grade 4			48	8.0	2.0					2.2	19
	Grade 5			47	8.0	2.0					2.2	19

Aflatoxins need to be acceptable for human consumption in Europe (B1 2 µg/kg, sum B1, B2 and G2 4 µg/kg, Commission Regulation 1881/2006). For general requirements for import into the EU, please see (CBI Ministry of Foreign Affairs 2016i).

Standard contracts under FOSFA Contract 13²⁷ may also apply for Cost, Insurance and Freight (CIF) Incoterms²⁸.

13.3 Mung beans

Food safety

To export mung beans to Europe, exporters have to deal with strict rules and obligations regarding food safety, in this context the General Food Law applies to mung beans (CBI Ministry of Foreign Affairs 2016b). Food management procedures must be implemented based on the HACCP principles as mentioned in the *General requirements* section.

According to the Commission Regulation (EC) No 1881/2006, the maximum level of metals, in particular “lead” for mung beans is 0.20 mg/kg wet weight (European Commission 2006).

Maximum residue limits

Exporters must take maximum residue limits (MRLs) into account for exporting to Europe. The maximum residue limits for pesticides that might be used on mung beans can be found in the EU Pesticide Database (European Commission 2018c) under the term ‘beans’ (code number 0300010).

MRL requirements for organic mung beans are much more stringent (CBI Ministry of Foreign Affairs 2016k).

Extra regulation for mung beans meant for sprouting

Since 2011, the European Commission took extra measures on regulation for sprouts and beans that are meant for sprouting. These extra measures mean that as a supplier you are obliged to provide more detailed information that ensures traceability. You also have to perform extensive testing, pay extra attention to processing, and gain extra certification.

Extra measures on regulation involve the following aspects (CBI Ministry of Foreign Affairs 2016b):

I. Traceability requirements:

According to the *Commission Implementing Regulation (EU) No 208/2013* (European Commission 2013a), traceability requirements for sprouts and seeds are:

- 1) Food business operators, at all stages of production processing and distribution, shall ensure that the following information concerning the batches of seeds intended for the production of sprouts, or the batches of sprouts is kept on records. The food business operator shall also ensure that the information needed to comply with these provisions is transmitted to the food business operator to whom the seeds or sprouts are supplied:
 - a) An accurate description of the seeds or sprouts, including the taxonomic name of the plant;
 - b) the volume or quantity of the seeds or sprouts supplied;

²⁷ <http://www.fosfa.org/contracts/>

²⁸ <http://www.iccwbo.org/products-and-services/trade-facilitation/incoterms-2010/the-incoterms-rules/>

- c) where the seeds or sprouts had been dispatched from another food business operator, the name and address of:
 - a. the food business operator from which the seeds or sprouts have been dispatched;
 - b. the consignor (owner) if different from the food business operator from which the seeds or sprouts have been dispatched;
 - d) the name and address of the food business operator to whom the seeds or sprouts are dispatched;
 - e) the name and address of the consignee (owner), if different from the food business operator to whom the seeds or sprouts are dispatched;
 - f) a reference identifying the batch, as appropriate;
 - g) the date of dispatch.
- 2) The information referred to in paragraph 1 may be kept on records and transmitted in any appropriate form, provided that it is easily retrievable by the food business operator to whom the seeds or sprouts are supplied.
 - 3) The food business operators must transmit the relevant information referred to in paragraph 1 on a daily basis. The records referred to in paragraph 1 shall be updated on a daily basis and kept available for a sufficient time after the sprouts can be assumed to have been consumed.
 - 4) The food business operator shall provide the information referred to in paragraph 1 to the competent authority, upon request, without undue delay.

II. Microbiological criteria

The *Commission Regulation (EU) No 209/2013* (European Commission 2013b) amends the *Regulation (EC) No 2073/2005* regards to microbiological criteria for sprouts, as a several control option in food safety (European Commission 2005).

Microbiological requirements for food safety are listed in Table 21.

Table 21 Microbiological requirements for sprouts

Aspect	Sprouted seeds (ready-to-eat) ¹		Sprouts ¹	
Micro-organisms/their toxins, metabolites	Salmonella		Shiga toxin producing E. coli (STEC) O157, O26, O111, O103, O145 and O104:H4	
Sampling-plan	n=5	c=0	n=5	c=0
Limits	Absence in 25 g		Absence in 25 grams	
Analytical reference method	EN/ISO 6579		CEN/ISO TS 13136 ²	
Stage where the criterion applies	Products placed on the market during their shelf-life		Products placed on the market during their shelf-life	

- (1) Excluding sprouts that have received a treatment effective to eliminate *Salmonella* spp. and STEC
- (2) Taking into account the most recent adaptation by the European Union reference laboratory for *Escherichia coli*, including Verotoxigenic *E. coli* (VTEC), for the detection of STEC O104:H4.

III. Approval of establishments producing sprouts

- 1) The design and layout of establishments shall permit good food hygiene practices, including protection against contamination between and during operations. In particular, surfaces (including surfaces of equipment) in areas where foods are handled and those in contact with food shall be maintained in a sound condition and be easy to clean and, where necessary, to disinfect.
- 2) Adequate facilities shall be provided for the cleaning, disinfecting and storage of working utensils and equipment. These facilities shall be easy to clean and have an adequate supply of hot and cold water.
- 3) Adequate provision shall be made, where necessary, for washing food. Every sink or other such facility provided for the washing of food shall have an adequate supply of potable water and be kept clean and, where necessary, disinfected.
- 4) All equipment with which seeds and sprouts come into contact shall be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination, and to enable it to be kept clean and, where necessary, to be disinfected.
- 5) Appropriate procedures shall be in place to ensure that:
 - a) the establishment producing sprouts is kept clean and, where necessary, disinfected;
 - b) all equipment with which seeds and sprouts come into contact is effectively cleaned and, where necessary, disinfected. The cleaning and disinfection of such equipment shall take place at a frequency sufficient to avoid any risk of contamination (European Commission 2013c).

IV. Certification requirements for imports into the European Union

The *Commission Regulation (EU) No 211/2013 of 11 March 2013* shall apply to consignments of sprouts or seeds intended for the production of sprouts imported into the Union excluding sprouts which have undergone a treatment which eliminates microbiological hazards compatible with European Union legislation.

This regulation establishes the following certification requirements (European Commission 2013d):

- 1) Consignments of sprouts or seeds intended for the production of sprouts imported into the Union and originating in or dispatched from third countries shall be accompanied by a certificate in accordance with the model set out in the Annex of this regulation, attesting that the sprouts or seeds were produced under conditions which comply with the general hygiene provisions for primary production and associated operations set out in Part A of Annex I to Regulation (EC) No 852/2004 and the sprouts were produced under conditions which comply with the traceability requirements laid down in Implementing Regulation (EU) No 208/2013, have been produced in establishments approved in accordance with the requirements laid down in Article 2 of Commission Regulation (EU) No 210/2013 (1) and respect the microbiological criteria laid down in Annex I to Regulation (EC) No 2073/2005.

The certificate must be drawn up in the official language or languages of the third country of dispatch and the Member State in which the import into the EU takes place or be accompanied by a certified translation into that language or languages. If the Member State of destination so requests, certificates must also be accompanied by a certified translation into the official language or languages of that Member State. However, a Member State may consent to the use of an official Union language other than its own.

- 2) The original of the certificate shall accompany the consignment until it reaches its destination as indicated in the certificate.
- 3) In the case of splitting of the consignment, a copy of the certificate shall accompany each part of the consignment

Additional requirements

I. Quality requirements

Exporters must meet the European quality standards.

Normally quality standards are set by the:

- » European Commission (EC)
- » United Nations Economic Commission for Europe (UNECE)
- » Codex Alimentarius of the Food and Agriculture Organization.

For mung beans there are no specific European standards. As a reference, standards of producing countries like Myanmar or Australia could be used (CBI Ministry of Foreign Affairs 2016k).

The **Standard Specifications for Australian mung beans** are listed as follows (Pulse Australia 2015):

1. All Mung bean covered by these Standards are to be Machine Dressed.
2. Appearance: Based on visual assessment against the standard sample at the time of testing. Appearance is determined on uniformity of colour, shades of colour, insect damage, lustre, brightness of colour, condition of skin coat and any other characteristics that effect appearance. In conjunction with appearance test a photographic chart and parameters are used to determine overall grade. The four parameters of seed coat, stained, pod scale and wrinkled are outlined by photographs to determine sound and defective seeds. The test is conducted on 300 seeds and tested as presented.
3. Purity: By the International Seed Testing Association rules. Prohibited Seeds (nil tolerance) NSW & QLD lists. Nil Fungal bodies allowed
 - a) AQIS standard for soil/stone states that soil should not be superficially obvious
 - b) Manufacturing Grade will be 97% by ISTA but it must have a total purity of 99% of mung bean material.
4. Size Grading: 98% must be within a 2mm range based on slotted sieves and within this range 75% must be within 0.8mm. (Seed size will be recorded on the certificate).
5. Moisture: By International Seed Testing Association rules.

6. Defect Type; Photo graphic charts are to be used in conjunction with appearance and parameter tests to determine overall grade. The four defect types of pod scale, seed coat, stained, and wrinkled are outlined by the photograph charts to determine sound and defective seeds. The test is conducted on 300 seeds and tested as presented.
7. Objectionable Material; Refers to objectionable foreign matter which has the ability to degrade the hygiene, become a food safety issue of concern or has a commercially unacceptable odour.
8. Germination; By the International Seed Testing Association rules. Hard seed to be reported. Hard seeds not to be counted as germinable seed (excluded) for varieties Berken, Delta Emerald and Satin. There is no hard seed limit for Regur, Celera or Green diamond.
9. Over-soaks; Percentage of Mung beans which imbibe after submerging in water at 32 degrees for one hour.
10. Charcoal Rot; Presence of Charcoal Rot tested at 28 degrees for 4 days.
11. Microbiological Standards;
 - a) E. coli < 10/g
 - b) Coli forms < 10³/g
 - c) Salmonella Nil/25g
 - d) If less than tolerance 'Not Detected' is to be reported
12. Sprout Test; As per AMA approved procedures.
13. Lowest grade of any one of the above tests will be the overall grade given.
14. Below manufacturing grade is "Sale by Sample".

According to the **Standard Specifications for Myanmar Mung Beans**, the quality requirements are listed:

Table 22 Quality standards for Myanmar mung beans, by type. FAQ (Fair Average Quality)

Requirement	Green Mung Beans (Pedesein)	Green Mung Beans (Pedeshwewar)	Green Mung Beans (Anyarshwewar)
a. Foreign Matters	1% Max	1% Max	1% Max
b. Weevilled Seeds	2% Max	2% Max	2% Max
c. Damaged Otherwise	4% Max	4% Max	4% Max
d. Foreign Beans	1 % Max	1% Max	1% Max
e. Sister Beans	2 % Max	2% Max	2% Max
f. Moisture Content	14 % Max	14% Max	15% Max

Source: (Ministry of Commerce of Myanmar 2013).

II. Labelling requirements

Exporters to Europe must label their products, and these labels must comply with European regulation.

The following items should be on the label of pre-packed mung beans:

- Official product name
- Physical condition or treatment
- List of ingredients and allergens
- Class, size (code), number of batches, net weight in metric units
- Statement that the product is destined for human consumption
- Best-before date or use-by date
- Instructions or special conditions for storage or use
- Place of origin or provenance
- Name and address of the importer established in the European Union
- Name and address of exporter
- Lot marking on pre-packaged foodstuffs (to ensure traceability of individual batches)

In addition, the label should include any certification logo (if applicable) and/or retailer logo (in the case of products marketed under a private label).

English on labels should be used, unless the buyer indicates otherwise.

Multilingual labels are usually used on consumer packaging, but the language of the destination country must be included in any case (CBI Ministry of Foreign Affairs 2016b).

Additional information about consumers labels can be consulted in the *Regulation (EU) No 1169/2011* (European Parliament 2011), including the obligation of providing nutrition information.

III. Packaging and handling requirements

Polypropylene or multilayer paper bags with a capacity of 25 kg are commonly used as packaging for mung beans. Sometimes 1000 kg bags are used.

Different European buyers may have different preferences.

In case of other forms of packaging, the *EU legislation for food contact materials* should be considered.

Mung beans should be kept dry, dark, cool and well-ventilated during storage, loading and shipment.

Mung beans from different harvest periods should not be mixed, as the older seeds will downgrade the entire lot.

Containers should be clean and the cargo must be protected from moisture, pests and cross-contamination (especially with organic produce) (CBI Ministry of Foreign Affairs 2016b).

IV. Food safety certification

Food safety is a top priority in all European food sectors. Exporters can therefore expect most buyers to request extra guarantees in the form of certification. For mung beans in both the production and the processing (cleaning and packing) it is necessary to comply with recognised food management systems (CBI Ministry of Foreign Affairs 2016b).

The most important food safety management systems and certifications accepted in Europe are presented in the *General requirements* section.

Requirements for niche markets

I. Organic

Although certified organic mung beans are still a niche, the growing organic market has the focus of several specialised European buyers.

To supply organic mung beans in the European Union exporters need to use production methods as laid down in European Union legislation (CBI Ministry of Foreign Affairs 2016b).

II. Fair-trade and environmental certification

Fair-trade and sustainable certification is still an insignificant requirement for mung beans by European buyers. However, certification can help the products to stand out and can help attract consumers who are more aware of these issues.

13.4 Soya beans

General requirements for food safety (traceability, hygiene and control)

To export mung beans to Europe, exporters have to deal with strict rules and obligations regarding food safety, in this context the General Food Law applies to mung beans

Regarding to contaminants and according to the Commission Regulation (EC) No 1881/2006, the maximum level of metals, in particular “cadmium” for soybeans is 0.20 mg/kg wet weight (European Commission 2006).

Exporters must take maximum residue limits (MRLs) into account for exporting to Europe. The maximum residue limits for pesticides that might be used on mung beans can be found in the EU Pesticide Database (European Commission 2018c) under the code 0401070 and term ‘Soyabeans’.

No GMOs

The European Union adopts a very cautious stance towards genetically modified organisms (GMOs). Only a few genetically modified grain varieties have been authorized for soybeans and they are used primarily in the animal feed sector. For human consumption, most food businesses choose not to sell GM food at all.

In general, genetically modified crops are not accepted (CBI Ministry of Foreign Affairs 2016j).

The EU establishes a threshold of (Fuentes Espinoza and Giraud-Héraud 2012):

- 0.1% of maximum tolerance of unauthorized GMOs for import (only to animal feed).
- Zero tolerance for human consumption

Regulation (EC) No 1829/2003 on genetically modified food and feed lays down a procedure for issuing decisions granting or rejecting authorisations for the placing on the market of genetically modified food and feed as well as for cultivation for the production of food and feed.

Besides cultivation, the placing on the EU market of GMOs and the use of their derived products in the food and feed chain is subject to an EU authorisation, conditional upon the demonstration of an absence of risk for human and animal health and for the environment,

following a thorough assessment by the European Food Safety Authority in collaboration with Member States' scientific bodies (European Commission 2015).

Fairtrade standards prohibit Fairtrade certified producer organisations from using genetically modified organisms (GMOs), including GM seeds and planting stock. Therefore, being Fairtrade certified will provide an incentive for small farmers to continue their commitment to produce GMO-free soybean (UNCTAD 2016).

Environmental and social certification for the mainstream market

In recent years, the sustainable sourcing of commodities such as soya has become a particularly important issue for buyers. Severe problems related to deforestation and other environmental and social effects have taken the news and affected public opinion.

In the case of soy, extensive publicity and concerns about sustainability of production and trade have led to the Roundtable on Responsible Soy (RTRS), which has led to related product standards and has been endorsed by large-scale mainstream players such as AHOLD, Jumbo, Arla Foods and ADM (CBI Ministry of Foreign Affairs 2016i).

Quality requirements by European buyers

Based on information of European buyers, the average quality standards for soya beans are listed in Table 23.

Table 23 Buyer requirements for soya beans

Standard	Value
Protein content	Min 34% - BR 37 to 38%
Moisture	Max 13.5%
Standard clauses admixture, impurities	1 - 2%
Oil content	18%
Pesticides, dioxins	0%
Aflatoxin	Max 50 PPB
Arsenic Compound	1 PPM
Mercuric Compound	Not Found, Zero
Phosphides	Max 0.05 PPM
Cyanides	Max 5 PPM
Debromide EDB	Less Than 3 PPM
Salmonella	Finland not allowed, try to find supplier salmonella-free supplier
Certifications	- Proterra (non-GMO) - RTRS (GMO) - USDA National Organic Program Certified or Equivalent

13.5 Sesame oil

Buyers in the European Union have strict requirements for sesame oil. They deal with the following topics:

Legal requirements

The following legal requirements are applied to food ingredients and vegetable oils specifically:

- Food safety: Traceability, hygiene and control.
- Contamination of food: Contamination with Polycyclic aromatic hydrocarbon, especially benzo(a)pyrene, is common for sesame oil which can occur during drying and roasting of the sesame seeds. The maximum limit of benzo(a)pyrene allowed is 2.0 µg/kg. Other contamination sources can be salmonella and aflatoxins, which deserve special attention for oils which are not refined (CBI Ministry of Foreign Affairs 2016c). Other contamination sources to focus are microbes, dioxins and polychlorinated biphenyls (PCBs), heavy metals, pesticides and foreign matter (anything that does not belong in the oil) (CBI Ministry of Foreign Affairs 2016l).
- Erucic acid content in oils and fats: (maximum level of 5% of the total level of fatty acids in the fat component of the product (CBI Ministry of Foreign Affairs 2016l)) Not very relevant for sesame oil (CBI Ministry of Foreign Affairs 2016c).
- Extraction solvents: maximum residue limits for extraction solvents such as Ethylmethylketone (5 mg/kg, fractionation of oils) and hexane (1 mg/kg, production and fractionation of oils) (CBI Ministry of Foreign Affairs 2016l).
- Product composition.
- Labelling, including nutrition and allergens: Sesame seeds must be listed as an allergen in the list of ingredients if the sesame oil is sold under a less common name like gingelly oil (CBI Ministry of Foreign Affairs 2016c).
- Food contact materials: Common restricted substances are: vinyl chloride monomer N-nitrosamines, N-nitrosatable BADGE, NOGE, BFDGE and heavy metals (CBI Ministry of Foreign Affairs 2016l).
- General requirements on packaging and liability (CBI Ministry of Foreign Affairs 2016c).

Additional requirements

Exporters are advised to follow these additional requirements applicable to food ingredients and vegetable oils specifically:

- **Food Safety Certification:** In addition to HACCP as a legal requirement, certificates such as IFS or BRC might be required by some buyers.
- **Corporate responsibility and sustainable sourcing certification:** Sesame oil is not criticised in Europe as much as commodity oils such as palm and soy. However, exporters can still implement sustainability policies to stand out from your competitors. Exporters could, for example, focus on good environmental practices in the production of sesame seeds and oil and/or try to create a positive social impact on sesame-producing communities (CBI Ministry of Foreign Affairs 2016c).

Quality requirements

Sesame oil is produced in different qualities, varying according to the extraction method. Manually-intensive methods include hot water flotation, bridge presses, ram presses, and small-scale expeller. Mechanical extraction methods are also possible, with the use of an expeller press, larger-scale oil extraction machines or pressing followed by chemical solvent extraction.

Sesame oil can also be extracted in low-temperature conditions, using an expeller press, in a process called cold pressing. This process avoids exposure to chemical solvents or high temperatures, thus preserving the original properties of the oil.

The main quality problems associated with sesame oil are oxidation (rancidity) and contamination:

- While sesame oil has a relatively high oxidative stability, it is important to store sesame oil at low temperatures (lower than 300C) to avoid oxidation.

- Some of the main contamination sources for sesame oil are salmonella and aflatoxins (contamination from sesame seeds) and benzo(a)pyrene (mostly occurring during the drying and roasting of sesame seeds).

As sesame oil is a relatively expensive vegetable oil, producers often mix it with cheaper vegetable oils. To prevent adulteration, buyers will ask to provide the right documentation and to provide samples that correspond to the delivered batches (CBI Ministry of Foreign Affairs 2016c).

In sesame oil, clarity is important, also requiring sesame seeds with the appropriate characteristics (CBI Ministry of Foreign Affairs 2017).

Labelling requirements

Traceability of individual batches and use of the English language for labelling is required, unless the buyer has indicated otherwise. The labels should include:

- Product name
- Manufacturers lot or batch code
- If the product is destined for use in food products
- Declaration of allergenic substances
- Name and address of exporter
- Products country of origin
- Shelf life: Best before date / use by date
- Net weight/volume in metric units
- Recommended storage conditions
- For organic (if relevant): Name/code of the inspection body and certification number (CBI Ministry of Foreign Affairs 2016c).

Packaging requirements

Sesame oil is transported in different types of bulk packaging (for example an intermediate bulk container – 1,040 litres or a metal tin – 9 litres), depending on the volumes transported. Larger volumes are mainly transported in intermediate bulk containers (IBCs) or flex tanks. Smaller volumes are transported in metal tins or high-density polyethylene drums.

Sesame oil for direct retail sales is mainly packaged in glass bottles, usually ranging between 250 and 500 ml (CBI Ministry of Foreign Affairs 2016c).

Requirements for niche markets

Organic certification is on the rise for vegetable oils. To access specific market segments in Europe, organic might be an actual buyer requirement.

Organic certification requires compliance with the European Regulation for organic production and labelling. The regulation also contains specific provisions for processed foods (including labelling), a category which includes vegetable oils. Only certified products can carry the European Union's organic logo, as well as the logo of the standard holder (e.g. Soil Association in the UK, Naturland in Germany) (CBI Ministry of Foreign Affairs 2016l).

Fair trade certification is not expected to grow significantly for sesame oil in the near future. (CBI Ministry of Foreign Affairs 2016c).

Additional information related to organic certification and Fair trade can be consulted in the *General requirements* section.

Quality requirements by European buyers

Table 24 Buyer requirements for sesame oils

Buyer	Product	Purity (min %)	Iodine value (I) (g/ 100g)	Saponification value (KOH) (mg/g)	Unsatifiable matter max g/kg	Moisture and volatile substance (max %)	FFA (max %)	Stearic acid content (max %)	Peroxide value (max mmol/kg)	Trans-fatty acid (max %)
SIO ADM	Pure	100	104-166	188-195	1.8	0.2	0.1	6.0	2.0	0.5

Material for SIO ADM needs to be winterised, which is measured by a positive cold test (Jones 1990).

MVO members were mainly interested in certified organic sesame oil and were looking for an internationally recognised certificate to that extent. Bayin tests mainly for microbiologically safe (E. coli <10 cfu/g, Listeria 0/25g, Salmonella 0/25g, Moulds <10 cfu/g, Yeasts <10cfu/g) and relies on the Irish laboratory (Eurofins) to test. For general requirements for import into the EU, please see (CBI Ministry of Foreign Affairs 2016m). For general requirements for import into China, please see GB/T 8233-2008.

13.6 Tahini

Tahini is a final product for which there is no common specification.

Tahini in Ethiopia for export is currently produced against customised recipes of clients.

In general, producers must have HACCP implemented to export to the European Union; ideally, they would have certification in particular ISO22000.

14. potential project impact

Appendix V: Calculation of

The following summarises the intent to calculate the impact of a potential CBI project on export value and jobs created in the chosen value chains. The basis for the calculation are the following parameters:

Table 25 Parameters for an economic model of the possible impact of a CBI intervention

Parameters	Value	Unit	Comment
Farms			
Commercial farmers in project	5		Assumed
Avg outgrower scheme size	400		Assumed
Avg field size (smallholder)	2	ha	From study
Avg field size (commercial farmer)	2,000	ha	From study
Harvests per year	1		of each
Yield (sesame)	1,200.00	kg/ha	after training in GAP
Yield (mung beans)	800.00	kg/ha	From study
Yield (soya beans)	2,000.00	kg/ha	From study
Price (sesame, conventional)	1.63	€/kg	From study
Price (sesame, organic)	2.04	€/kg	From study
Price (mung beans, conventional)	1.33	€/kg	From study
Price (mung beans, organic)	2.21	€/kg	From study
Price (soya beans)	0.40	€/kg	From study
Ratio organic/conventional	50%		Assumed
Processing			
Capacity oil plant	1,000	mt/month	Tsehay plant
Directly employed	100	persons	Assumed
Indirectly employed	200	persons	Assumed
Extraction rate (cold pressed)	43%		Std extraction rate
Price sesame oil (conventional)	3.64	€/kg	From study
Price sesame oil (luxury)	9.10	€/kg	Assumed
Dedicated to luxury	5%		Assumed
Capacity tahini plant	100	mt/month	Assumed
Directly employed	20	persons	Assumed
Indirectly employed	40	persons	Assumed
Price tahini (conventional)	2.62	€/kg	From study
Price tahini (luxury)	6.55	€/kg	2.5 times conventional
Dedicated to luxury	30%		Assumed

The above parameters have been taken where possible from the analysis performed in this report. However, some parameters were difficult to assess from existing data or are unknown, because they depend on details of a potential project that at this stage are not known, such as the average size of the outgrower schemes and the percentage of production dedicated to production of high-end sesame oil and tahini for the European market. For those ad-hoc assumptions were made that need to be considered model parameters. In all cases, an attempt was made to use reasonable values of such parameters.

Table 26 Calculated project impact for most likely scenario

Farming	Number	Area (ha)	Amount produced (mt/a)				Soya	Export revenue
			Sesame	Org sesame	Mung	Org Mung		
Commercial farmers	5	10,000			4,000		10,000	4,005,320 €
Smallholders	2,000	4,000	2,400	2,400	800	800	4,000	13,232,240 €
Processing	Employees	Capacity (mt/a)	Dedicated to product		Total quantity (mt/a)		Revenue	
Sesame oil	15	5,160	5%		258		2,347,800 €	
Tahini	60	1,200	30%		360		2,358,000 €	
TOTAL	2,080						21,943,360 €	

On the basis of the above parameters, the following project impact can be calculated; see Table 26. However, the above model is highly sensitive to the number of commercial farmers and the average size of the outgrower scheme. In such cases, estimates are often calculated using the PERT technique or three-point estimation²⁹ with a pessimistic (*P*), an optimistic (*O*) and a likely (*L*) scenario. Averages are then calculated as $\frac{P+4L+O}{6}$.

Table 27 Impact for pessimistic, likely and optimistic scenarios and resulting average impact based on PERT technique

Scenario	Commercial farmers	Avg outgrower scheme size	% oil prod dedicated to luxury	% tahini prod dedicated to luxury	Jobs created	Export revenue
Pessimistic	3	200	3%	10%	672	9,506,664
Likely	5	400	5%	30%	2,080	21,943,360
Optimistic	10	500	10%	50%	5,100	47,369,040
PERT Average (rounded)					2,300	24,000,000

²⁹ https://en.wikipedia.org/wiki/Three-point_estimation