Socioeconomics
Discussion Paper Series

Series Paper Number 38

Scoping Study on Current Situation and Future Market Outlook of Groundnut in Ethiopia

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11/24/2015

International Crops Research Institute for the Semi-Arid Tropics

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This work has been undertaken as part of the CGIAR RESEARCH PROGRAM ON GrainLegumes

Abstract

Groundnuts are becoming increasingly important in Ethiopian agriculture and domestic demand has been on a steady increase. Starting from a literature review of the limited material available a survey of value chain actors was conducted and potential areas of groundnut expansion have been identified using GIS. Giving a comprehensive overview of the sector and the past trends in area and production across the country, this paper highlights current challenges and future prospects of the Ethiopian groundnut sector and identifies entry points for interventions to increase its competitiveness.

Keywords: Ethiopia, groundnuts, Challenges and opportunities

JEL classification: O55, O13, Q13

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1 Introduction

Groundnuts (*Arachis hypogaea*), also known as peanuts are the edible seeds of a legume plant that grow to maturity in the ground. Cultivated in nearly 100 countries, over 90% of which are developing countries, the groundnut is a food staple and valuable cash crop for millions of households (CGIAR, 2004-2005, cited in Pazderka and Emmott, 2010). They can be consumed directly (roasted and salted), processed into oil or cake/meal, or further processed into confectionary products or snack food.

As a legume, groundnut fixes atmospheric nitrogen in soils and thus improves soil fertility and saves fertilizer costs in subsequent crops. This is particularly important when considered in the context of the rising prices of chemical fertilizers which makes it difficult for small scale farmers to purchase them. In livestock farming communities, groundnut can be used as fodder for livestock and increases productivity as the groundnut haulm and seed cake are rich in digestible crude protein content (Simtowe et al., nd).

Future global demand for groundnuts appears to be secure due to snack food markets in North America and the EU as well as in countries where groundnuts are a key ingredient in food preparation, such as Mediterranean, Indian and Asian cuisines (ARD, 2008). Further, there is also high demand from local and regional markets in countries of production as groundnuts are a staple food and key source of protein for a number of SSA and Asian countries. In fact, within recent years, Ready to Use Therapeutic Food (RUTFs) have been made with a groundnut base and used to treat severe malnutrition in young children in many countries including in Ethiopia. This offers yet another opportunity for groundnut producers to sell their product and also have a positive impact on the life and development of the domestic population (Pazderka and Emmott, 2010)

In Ethiopia, groundnut is the second important lowland oilseed of warm climate next to sesame (Dawit and Samuel, nd). The lowland areas of Ethiopia have considerable potential for increased oil crop production including groundnut. After its first introduction to Eriteria in the 1920 and then to Harer (EARO, 2000 cited in Dawit and Samuel, nd), groundnut is grown in many lowland areas of Ethiopia. It is mainly grown in eastern Harerghe, with immense potential in Gamogofa, Illubabor, West Gojam, North Shoa, North and South Wello, East and West Wellega, and Western Tigray (CSA 2010, cited in Dawit and Samuel, nd). According to the CSA report on area and production of crops, more than 352,077 private peasant holding households have grown groundnut in close to 80,000 hectares of land in the 2013/14 cropping season leading to a total production of well over 0.11 million tons (CSA, 2014). According to the same report, Oromia region constitutes the largest proportion of groundnut production areas accounting for 66% (52, 921.26 ha), out of which more than one half (28,909.44 ha) is found in East Harerghe. Benishangul Gumz is the second largest contributor in terms of ground nut production areas (18,592.72 ha) followed by Harari (2874.09), Amhara (2,380.15 ha) and SNNP (376.66 ha).

Groundnut production in Ethiopia, although still limited to some lowlands of the country, is playing an increasing role in terms of serving as an alternative oil crop to an increasing number of small holder farmers. However, it has been indicated that the sector is limited by wide range of problems related to marketing, production and distribution. Ethiopian Institute of Agricultural Research (EIAR) has conducted a value chain analysis on the marketing

channels of groundnut in Ethiopia. This report, which benefits significantly from the marketing chain analysis, along with other previous and ongoing studies will form a basis for developing future research agenda that contributes to improved production and marketing of groundnut in Ethiopia.

Objectives:

The main objective of this report is to map suitable potential areas for production of groundnut in Ethiopia and synthesize views of wholesalers, retailers and processors about the current demand and future prospect of groundnut in Ethiopia.

Scope of the study

The findings of the study are based on analysis of secondary sources and primary information collected from a sample of processors, wholesalers, and retailers engaged in buying, processing and selling of groundnuts. Therefore, the findings of the study presented in this report should be interpreted judiciously and cannot be generalised for other oilseed crops markets in Ethiopia.

2 Methodology and data source

The study uses both primary and secondary data sources for analysis. The primary data source is obtained from a sample of wholesalers, retailers and processors both in Addis Ababa and Eastern Harerghe, the leading groundnut producing area in Ethiopia. A total of 66 retailers, 42 wholesalers, 6 village collectors and 7 processors were sampled for the study. A structured survey questionnaire was used to gather primary information mainly focusing on the current demand and future prospects of groundnut in Ethiopia. A descriptive statistics was used to analyse the primary information.

The secondary source is based on an analysis of existing literature – including published and unpublished materials – and secondary data obtained from Central Statistics Agency (CSA) of Ethiopia, Ministry of Trade of Ethiopia and other sources. Graphical and descriptive statistical techniques were used to analyse, summarize and present the data.

3 Groundnut cultivation in Ethiopia

3.1 Trends of groundnut production

Groundnut in Ethiopia is produced mainly by small holder farmers in the lowlands of the country. It is concentrated in some areas of Oromia, Benishangul Gumuz, Amhara, SNNP, Harari and Gambela, the major producer being Eastern Harerghe in Oromia region. Table 1 shows trends in production, area cultivated and productivity of groundnut in Ethiopia.

Table 1: Trends in area, production and productivity of groundnut in Ethiopia

Year	Area (ha)	Production (tons)	Yield (ton/ha)
2013/14	79947	112089	1.40
2012/13	90156	124419	1.38
2011/12	64477	103479	1.60
2010/11	49603	71607	1.44
2009/10	41579	46425	1.12
2008/09	41761	46887	1.12
2007/08	40198	44685	1.11
2006/07	37126	51080	1.38
2005/06	35462	34150	0.96
2004/05	27084	29053	1.07
Growth[1]	12.8%	16.2%	3%

Source: CSA (2004 – 2014)

One of the significant features emerged from the data presented in the table is the increasing trend in area and productivity of groundnut. The compound annual average growth rate of productivity over the period 2004/05 to 2013/14 showed positive growth (3%) though at a slower pace. The growth in production is contributed more by area expansion (79%) than by yield (21%) enhancement.

The following figures indicate the trends in growth of area cultivated in hectares and production in tons. Both figures indicate a continuous rise in area cultivation and production over the period 2004/05 to 2013/2014 except for the 2013/14 production season in which both total area used to grow groundnut and total yield of groundnuts has declined compared to the previous production season.

[1] Cumulative Average Growth Rate (CAGR) in percent over the period 2004/05 – 2013/14

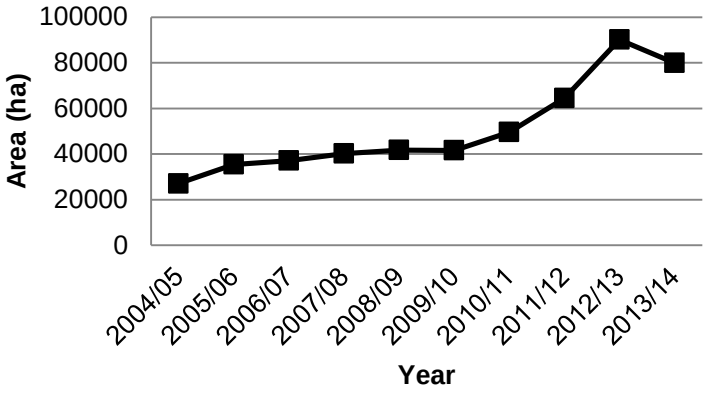


Figure 1: Trends in Groundnut Cultivation Area in hectars (2004/05 - 2013/14)

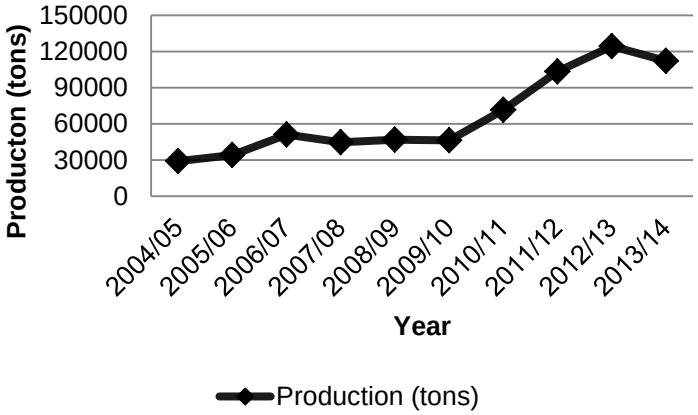


Figure 2: Trends of Groundnut production in tons (2004/05 – 2013/14).

In terms of area distribution of groundnut production in Ethiopia, groundnut is produced in Oromia, Benishangul-Gumuz, Amhara, SNNP, Harari and Gambela regions. The following table indicates the regions and major producing zones within the regions.

Table 2: Major groundnut producing regions

Region	Major producing zones
Oromia	East and West Welega, Illubabo, East and West Hararghe
Benishangul-Gumuz	Metekel, Assosa, Kemashi, Pawe, Mao Komo
Amhara	Awi, Oromia zone
SNNP	South Omo, Gamo Gofa
Harari	Harari
Gambela	Agnuwak

Source: Alemu and Samuel

However, Oromia and Genishangul-Gumuz regions are the major producing regions which account for most of groundnut production in Ethiopia. The following table shows the trends in share of groundnut production and area cultivation by major groundnut growing regions.

Table 3: Share of area and production of groundnut in major groundnut growing regions

Region	2014/13		2013/12		2012/11		2011/2010	
	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.
Oromia	66.2	60.9	63.2	60.8	65.7	61.2	66.5	59.0
B/Gumuz	23.3	27.4	25.7	30.6	24.1	25.9	20.1	22.1
Harari	3.6	3.5	3.3	2.1	2.6	2.2	3.4	2.3
Amhara	3.0	2.4	4.2	3.6	3.4	*	*	*
SNNP	0.5	*	0.6	0.4	1.4	0.7	1.3	*
Gambele	*	0.4	0.0	0.0	*	0.0	*	*

*not reported because of high coefficient of variation (not reliable)
Source: CSA (2010/11 – 2013/14)

It is clear from the table that Oromia region is the leading region in both area cultivation and production of groundnut in Ethiopia. It accounts for more than 60 percent of area cultivation and groundnut production. Next to Oromia, groundnut is widely cultivated in Benishangul-Gumuz. The two regions account for almost 90% of groundnut production in Ethiopia.

3.2 Productivity and use of improved varieties

Groundnut production in Ethiopia is found to be constrained by several biotic and abiotic factors, i.e., critical moisture stress especially during flowering and after, lack of improved varieties, appropriate production and post harvest practices, and diseases affecting both above- and underground parts of the plant (Alemayehu et al., 2014). The disease problem was quite widespread in almost all groundnut producing regions and the fungi Aspergillus and associated mycotoxins were found to be very critical both in terms of occurrence, geographic distribution and intensity. This and other factors contribute to a low level of productivity of groundnuts in Ethiopia. The figure below shows trends in productivity of groundnut per hectare over the period 2004/05 to 2013/14.

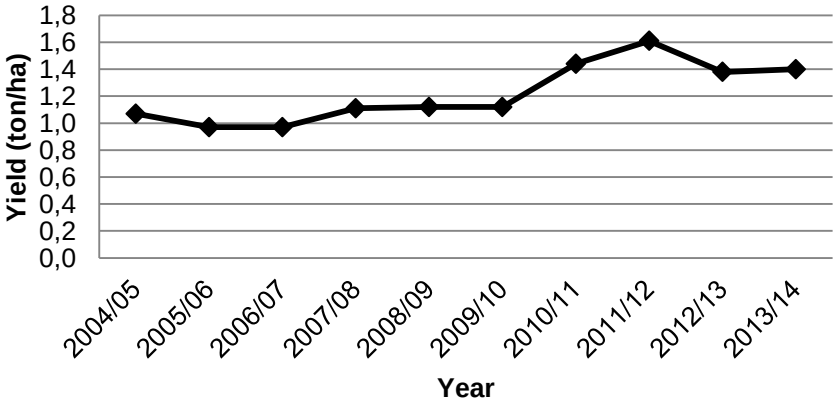


Figure 3: Trends of productivity of groundnut (tons/ha).

The figure indicates that yield per hectare ranges from 1.1 to 1.6 tons averaging at 1.2 tons per hectare. This level of productivity is not only low but also remains static with no or very little changes overtime. Among the many factors that contribute to the low level of yield is lack of use of improved seeds. Reports indicate that the yield level at research centres is

much higher than the yield level farmers get. For example, improved varieties released by Melkawerer Agricultural Research Center give 1.2 – 3.5 and 3.2 – 8.0 ton/ha under rain fed and irrigation conditions respectively (Alemayehu et al, 2014).

Groundnut research

Agricultural research is an essential factor for improving crop productivity and quality. Currently in Ethiopia, public sector research institutions are actively involved in the development of improved seed varieties. The evaluation of exotic materials together with some local cultivators started in mid 1960's and continued till 1971 and ultimately national variety trials were initiated at Werer, Gambella, Tendaho, Humera, Didessa and Gode. In 1980s, the program was organised on the basis of multi-disciplinary team approach and was promoted to a commodity level and named National Lowland Oil Crops Research program (EARO, 2000 cited in Dawit and Samuel, nd).

Research trials under the national research program are undertaken at Werer in Afar; Pawe and Assosa in Benishngul-Gumuz; Babile, Miesso, and Gursum in Oromia; Goffa, Dwro and Arbaminch in SNNP; Abobo in Gambella; and Kobo in Amhara. The research program, however, is nationally coordinated by Werer Research Center of EIAR and the research disciplines covered are crop improvement, agronomy and crop protection (Dawit and Samuel, nd).

Since 1976, a total of 19 different varieties of groundnuts seed were released (Table 3.4). The development of new varieties is mostly centered on four attributes: *yield, days to maturity, disease resistance, and oil content*. *Fetene* (ICGV-93370), the latest varieties released by the Worer Agricultural Research Center (WARC) in 2009 has higher yields compared to most previously introduced varieties and shorter days to maturity, thereby making it suitable for medium rainfall areas (569-740 mm rainfall).

As presented in Table 4, most varieties have potential to yield above 0.3 tons/ha , yet the average yield for groundnuts in Ethiopia is around 0.1 tons/ha. This clearly indicates that there is big difference between the mean level of productivity of farmers and the yield per hectare of the different varieties of groundnut released at different times. Other findings also indicate similar differences in yield per hectare between farmer's fields and research centers, (see for example Tameru and Melega, 2014; Berhanu et al., 2011 (unpublished) cited in Tameru and melega, 2014).

Table 4. Average productivity of ground nut varieties released in Ethiopia (1996 – 2004)

Variety	Year of release	Maturity days	Yield (ton/ha)	Oil content (%)
Shulamit	1976	140-160	5 – 6	44
NC4X	1986	140-160	5 – 6	46
NC-343	1986	140-160	4 – 6	48
Roba	1989	140-160	7.0	44
Bobe	1989	140-160	3.3	49
Batisedi	1993	100-105	3.0	52
Sedi	1993	137	6.5	53
Bulki-0l	2001	150	2.8	
Lote-01	2002			
Lotte	2002	137	3.0	53
Bulgi	2002	137	6.5	53
Werer-961	2004		3.6	47
Were-962	2004	130	2.9 – 3.9	48
Were-963	2004	129	2.2	46
Were-964	2004	128	5.2	46
ICGV-93164	2008			
ICGV-94222	2008			
ICGV-94205	2008			
Fetene (ICGV-93370)	2009	115.96	6.1	52

Source: MoARD, 2009 and EARO, 2004

Although a number of factors could contribute to the existing yield gap between farmer's fields and research centers, one strong reason is attributed to the low level of adoption of improved varieties of groundnuts by small holder farmers in Ethiopia. A recent study in Babile area by Mergia (2010) cited by Dawit and Samuel (nd) found out that from randomly selected 85 groundnut growers, about 48% of the farmers have used own saved, 25% purchased seed and the remaining 27% of the farmers sold seed to other farmers. About 18% of the farmers use seed of local varieties bought from the local market. In general, the farmers in Babile area use only local varieties.

4 Groundnut marketing system

Marketing of groundnut in general refers to marketing of groundnut, groundnut oil, oil cake, etc. Although groundnut in Ethiopia is produced for domestic consumption, a small part of it is also exported.

4.1 Trade in groundnut

Trade performs the functions of assembly, transportation, broking and storage (in some cases) in moving the produce to the consumers. Assembling/trading is the most competitive stage of the value chain, where key players intensively compete in terms of price and the timing of purchasing from the farmers. These key players include village collectors/traders, cooperatives, wholesalers, retailers and processors.

According to Dawit and Samuel (nd), the following channels are believed to be in operation in trading of groundnuts in Ethiopia:

a) Producers - primary cooperatives – unions – secondary wholesalers – retailers
b) Producers – village collectors – primary wholesalers – secondary wholesalers – retailers
c) Producers – village collectors – secondary wholesalers – retailers
d) Producers – primary wholesalers – secondary wholesalers – retailers
e) Producers – primary wholesalers – secondary wholesalers – processors

Village collector/trader

Village traders procure groundnuts from farmers at farms. They act in one of two ways. They either use their own finance to buy the produce from farmers to sale to the next level or they could work on a commission bases so that they collect groundnuts from farmers on behalf of wholesalers or processors and are paid their commission.

Since groundnut production in Ethiopia is dominated by small scale farmers who cultivate on fragmented plots of land, collection of produce from large number of small farmers widespread in different areas is a challenge. The village collectors play an important role in bridging the gap between producers and the next level of actors in the groundnut marketing – wholesalers and processors. Most of the collection from farmers is made via the village collectors. According to the estimate by Dawit and Samuel (nd), one-half of the collection from farmers in Eastern Harerghe is done by village collectors.

Cooperatives:

Cooperatives in Ethiopia are a means for both distribution of inputs to farmers and collection of farm produces for the market. In a similar fashion, cooperatives in the major groundnut producing regions supply inputs to groundnut small scale farmers and collect their produce and supply to the market mainly to wholesalers and processors. However, the role of cooperatives in this regard is limited. They account for only 1% of groundnut produce collected and supplied to the market in East Harerghe (Dawit and Samuel, nd).

Wholesalers

Wholesalers are engaged in selling both unshelled and shelled groundnuts mainly to retailers and in some cases to processors. Depending on whether wholesalers directly buy from producers and whether or not they sale to other wholesalers, they can be grouped into primary wholesalers and secondary wholesalers. Primary wholesalers buy groundnut from producers and village collectors, and sale to secondary wholesalers. The secondary wholesalers on the other hand buy from village collectors and primary wholesalers and sale to retailers and processors.

Retailers

These are the last unit in the market chain analysis who finally distribute the commodity to end users. They buy and sale both shelled and unshelled groundnuts. These include hyper markets, super markets, ordinary shops and street vendors. Retailers buy groundnut from wholesalers and directly from producers.

Processors

Although not large in number, few establishments are engaged in processing groundnut into oil and other forms of final products in Ethiopia. Hamaresa Edible Oil Extraction is the first state owned groundnut oil extraction factor established in Harar. There are also other establishments such as Hilina Enriched Foods Processing Centre Plc and Moon Packed Foods Plc, which produce peanut butter, plump peanut and peanut split in case of the former, and moon peanut butter for the latter, engaged in processing of groundnut.

The following figure shows the gross margin share of the various entities or actors in the value chain of groundnut. The highest share of gross margin created goes to primary wholesalers followed by producers

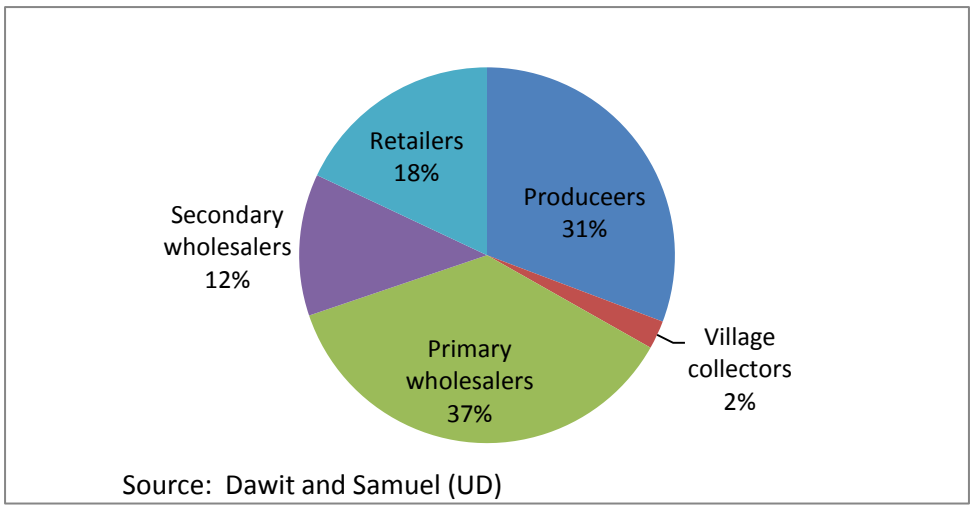


Figure 4: Share of various entities.

4.1 Groundnut export market

Groundnut crushed into oil and meal dominates the volume of groundnut trade worldwide (Minde et al., 2008 cited in Simtowe et al., ND). However, there has been a substantial

increase in the trade volumes for confectionery groundnuts during the last decade while groundnut oil trade has fallen because of loss of competitiveness in relation to substitutes and concerns over aflatoxin contamination in groundnut products (Simtowe et al., UD).

Oilseeds are one of the major export commodities in Ethiopia. In 2012/13, oilseeds was the third largest export earner after coffee and gold accounting for 14% of total exports (NBE, 2013). However, export of oilseeds is significantly dominated by one commodity - Sesame. The figure below indicates the share of different types of oil seeds exported in 2012/13.

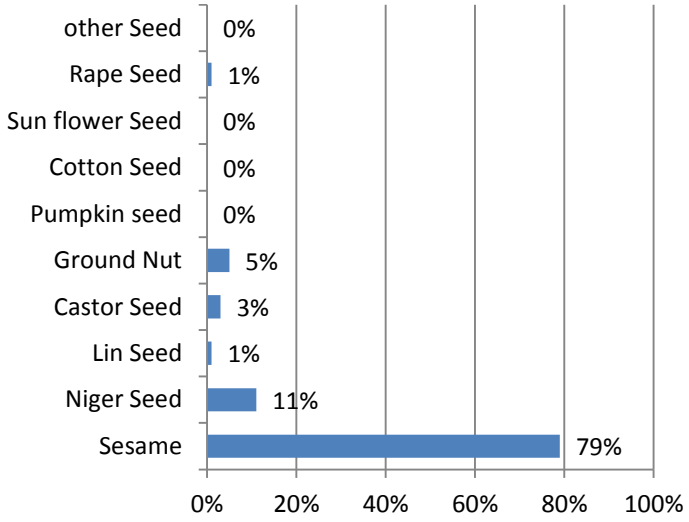


Figure 5: Types of oilseed export and share in 2012/13

It is evident from the figure that sesame dominates the export of oilseeds from Ethiopia. It contributes close to 80% of the total exports of oilseeds. Groundnut constitutes around 5% of the total export of oilseeds.

The contribution of groundnut to the Ethiopian export sector is thin in part because most of the groundnut produced is consumed locally. The figure below shows the trend of exports of groundnut as percentage of total groundnut production in Ethiopia over the period 2005/06 to 2013/14. Export of groundnut as a proportion of total domestic production is low and almost remains constant over time except over the last four years. It started to rise up in 2009/10 reaching a pick (close to 14% of domestic production) in 2012/13. However, the export momentum cannot be maintained in the following year (2013/14). Exports of groundnut sharply fell from close to 14% of domestic production in 2012/13 to almost half a percentage point in 2013/14. According to experts at the Ministry of Trade of Ethiopia, the sharp decline is contributed not because of a decline in world demand for groundnuts nor is it due to a sharp decline in domestic production, but it is mainly due to the high level of aflatoxin contamination which is well above the acceptable level.

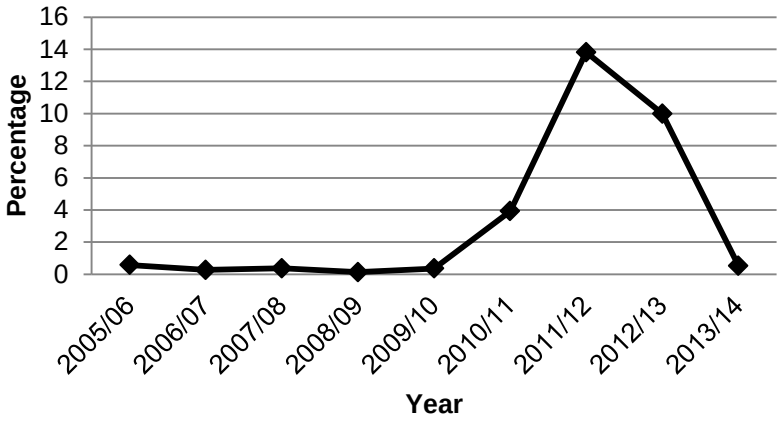


Figure 6: Export as percentage of production

A recent study by Eshetu confirms the presence of high level of aflatoxin contamination in groundnut produced in Ethiopia. From a total of 52 groundnut (*Arachis hypogaea*) samples analyzed, 38 (73 %) were positive for aflatoxin. The average levels of aflatoxins detected in the seed samples were between 0.57 (from Babile new harvest sample) to 447 ppb (from Babile three month stored in pp bag). The higher level of toxicity is more than twenty times greater than the acceptable dosage (20 ppb: US Standards) in groundnut of three month stored after wet shelling (Eshetu, 2010).

5 Market structure and future prospect – A traders and processors survey perspective

This part analyses the market structure and future prospect of groundnut from the perspective of traders and processors. It aims at defining the type and volume of groundnut traded and their flows, the constraints and capacities to respond to an increased demand, demand and supply prospects of groundnut, the type of groundnuts preferred in the market, and overall assessment of the challenges faced and opportunities for the future in the market for groundnut.

To answer the above questions, which are key to understand the current situation and future outlooks of groundnut in Ethiopia, two questionnaires (one for traders, while the other for processors) were prepared and data gathered from a sample of traders and processors in Addis Ababa and in Eastern Harergeh mainly Babile area.

The categorization of traders replicates an earlier market value chain assessment on groundnut conducted by EIAR in Eastern Harerghe (Alemu and Samuel, nd) and specifically:

- Retailers – this category includes all types of retailers who sale processed and unprocessed groundnut to end users. This includes super markets, mini markets, ordinary shops and street vendors.
- Village collectors – these are individuals who collect groundnut from producers (farmers) and sale to wholesalers.
- Primary wholesalers – these includes wholesalers who buy either directly from producers (farmers) or from village collectors or both and sale to other wholesalers.
- Secondary wholesalers – these are wholesalers who buy from village collectors or other wholesalers and sale to retailers.
- Processors – these are manufacturing establishments that process groundnut and produce different confectionary food including butter and oil.

5.1 Traders and processors profile

In total, 121 respondents were interviewed, as reported on Table 5. Among those, 66 were retailers of all types (hyper markets, super markets, mini markets, regular shops and street vendors), 42 were wholesalers (both primary and secondary wholesalers), 6 were village collectors and the remaining 7 were processors. The sample was overall balanced in terms of traders' category representation.

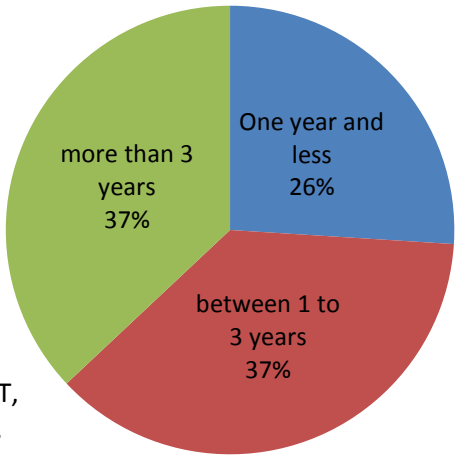
Table 5: Traders and processors sample

Sample type	Freq.	Percent
Hyper market	2	2
Mini market	18	15
Regular shop	12	10
Street vendor	12	10
Super market	22	18
Village collector	6	5
Wholesaler (1st degree)	10	8
Wholesaler (2nd degree)	32	26
Processors	7	6
Total	121	100

Source: ICRISAT, traders' survey, December 2014

Among the seven processors, one was oil producing factory (Hameresa oil factory – probably the single largest groundnut oil factory) and the remaining six are butter and other confectionary food processing establishments.

The different traders have been in the business of trading groundnut for different time periods. The following summarizes the experience of the traders. Close to 26% of the sample have been in the business for one year or less, 37% were in the business for one to three years and the remaining 37% of the sample have experience of trading or processing groundnut for more than three years. Thus the sample was also balanced in terms distribution by experience of traders and processors.



Source: ICRISAT, traders' survey,

Figure 7: Time in operation of sample traders and processors

5.2 Volumes and flows

The main types of groundnut traded are kernels, oil and butter. The quantity of groundnuts traded significantly differs from trader to trader. It ranges from a low of 2 kg per week (mainly the trading capacity of street vendors) to a high of 10,000 kg per week in the case of

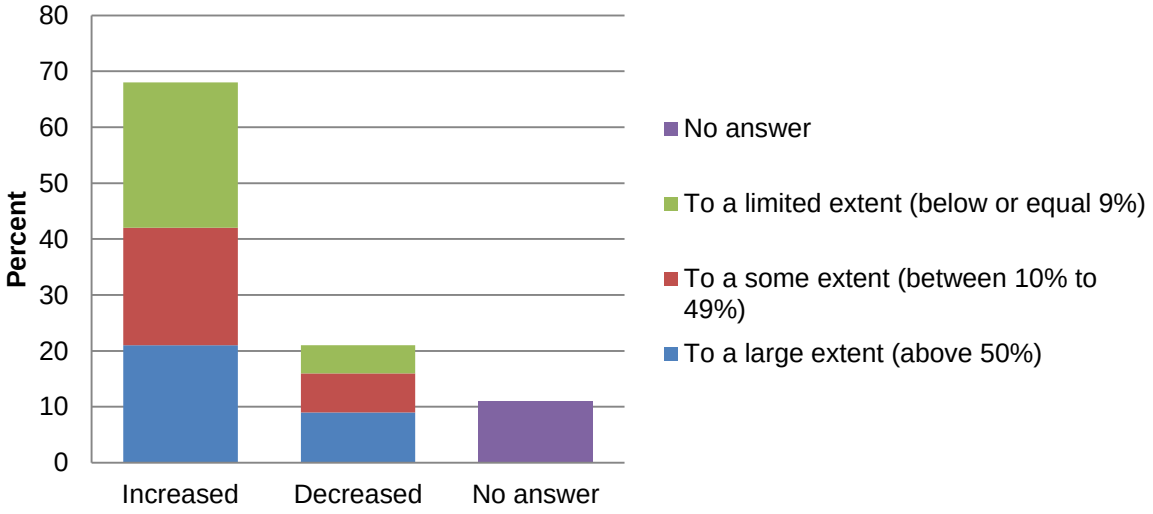
wholesalers. Similarly, the numbers of customers the traders sell to vary from a low of 2 customers per week to a high of 150 customers per week averaging at 32 customers per week. Compared to a year before of the same period, the current number of customers has increased for close to 58% of the traders in the sample, remained the same for 16% and only 18% reported a decrease in number of customers in the current period.

Traders and processors were asked if their current sales volume has been changed compared to similar period last year. Survey results indicate that 68% of the respondents have experienced a rise in their current volume of trade and only 21% percent reported a decrease in current volume of sales compared to similar period last year (Figure 6.2).

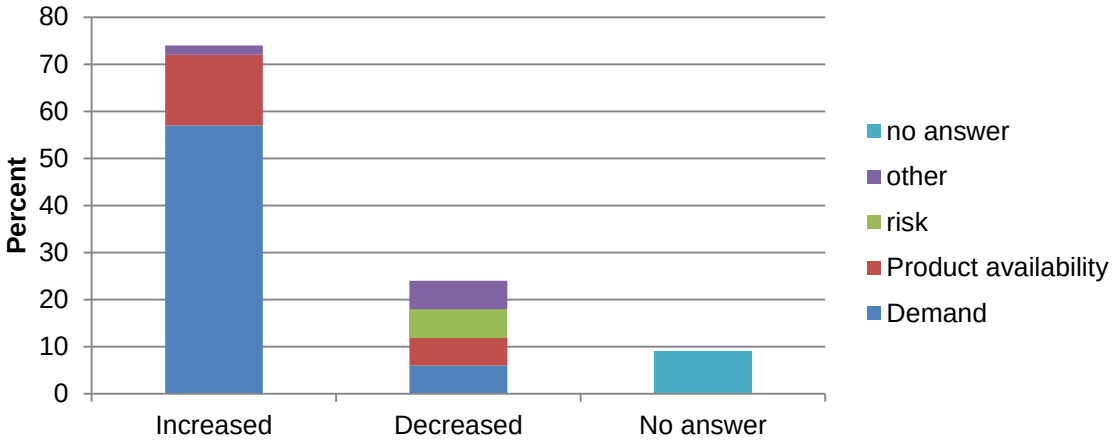
Most of the traders ascribe the increase in current level of sales to an increase in demand for groundnut products in the market (Fig. 6.3), therefore, pinpointing the fact that consumers in Ethiopia are increasingly getting used to groundnut consumption and hence an opportunity for future expansion of the market. Product availability is the second major factor for an increase in volume of trade of groundnut in the current period compared to similar period last year.

For the traders who reported a decrease in current level of sales volume compared to the volume of sales same period last year, demand, product availability, risk factor and other factors seem to contribute to the decline in trade in almost similar proportion.

According to the trader survey, the major source of groundnut is from traders followed by village collectors, farmers and finally processors. However, the main source is different for different types of traders. It is obvious that the major source of supply of groundnut for village collectors is from farmers. However, village collectors also get their supply from other village collectors pointing the fact that some smaller village collectors collect groundnut from farmers and supply it to other relatively bigger village collectors. In the case of wholesalers, the major source of supply is from traders indicating the fact that most secondary wholesalers obtain their supply from other wholesalers called primary wholesalers.



Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 8: Extent of sales change



Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 9: Reasons for sales change

Wholesalers, especially primary wholesalers, also obtain their supply of groundnuts directly from farmers and from village collectors. The major source of supply of groundnut for retailers is from traders mainly secondary wholesalers followed by processors especially for butter and oil. Retailers also source their groundnuts from village collectors and directly from farmers although only a few do so. Finally, processors obtain their supply of groundnuts mainly from traders, although a quarter of them also reported that they directly source from farmers (Figure 10).

The current source of groundnut, however, does not seem to persist in the future. Close to one-half of the traders and slightly more than 70% of the processors indicated their desire to change their current source of groundnut. Most have indicated to shift to directly sourcing groundnut from farmers and cooperatives.

Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 10: Source of supply of groundnut by type of trader

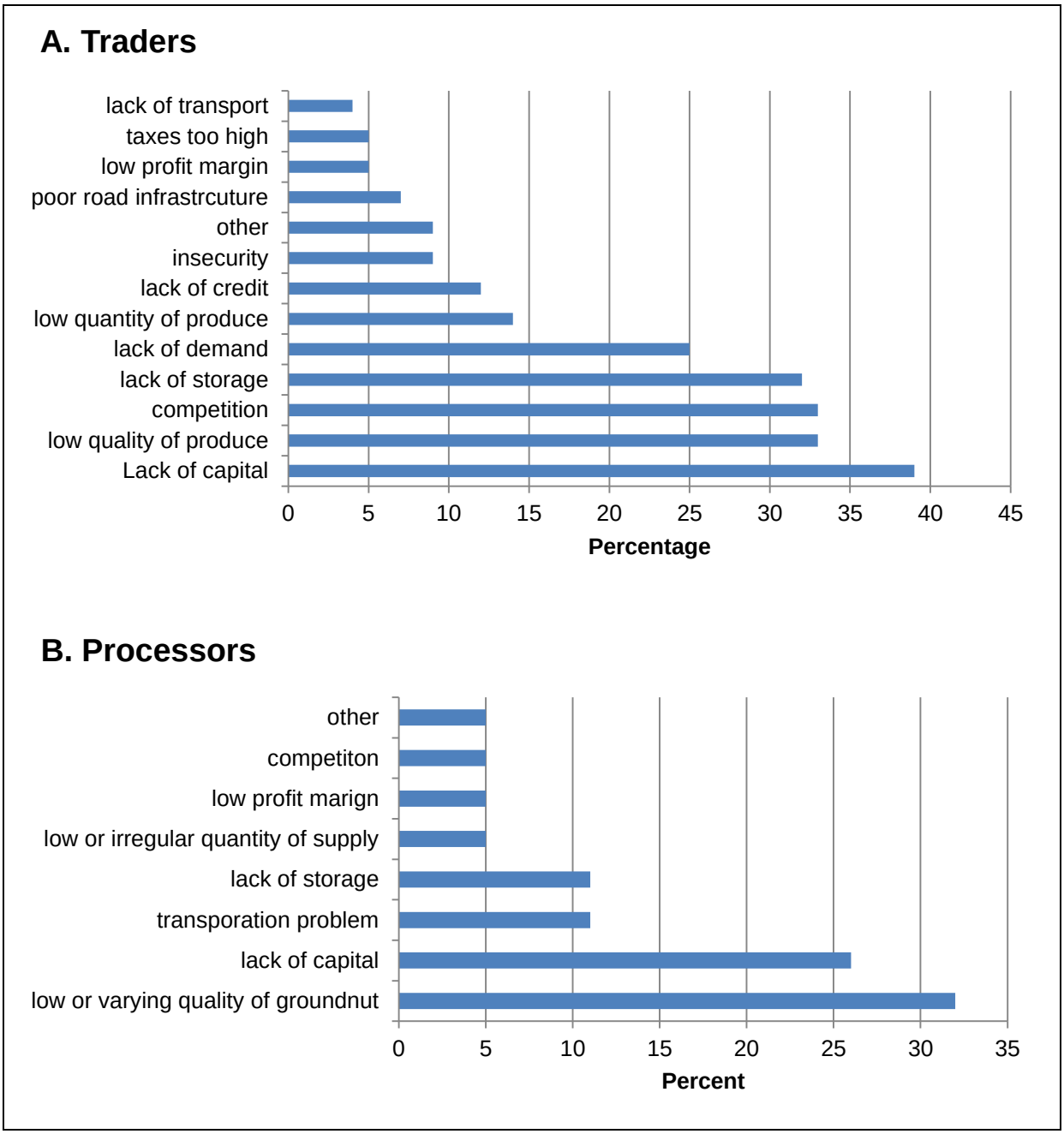
Processors were further asked if they operate at full capacity or not. All the seven processors said they do not operate at full capacity. The processors blamed low level of quality and quantity of supply of groundnut as the major reason for operating below full capacity. None have mentioned demand as a reason for not operating at full capacity.

5.3 Constraints and response capacity

Another key aspect linked to the analysis of volumes and flows is the understanding of the constraints traders have to face to implement their business. Eventually, this information would determine whether there is any response capacity to deal with market based interventions and meet the expected increase of demand, without further stressing an already weak trading environment.

5.3.1 Constraints

Close to 40% of the trader respondents blamed lack of capital as the major limitation in their activities. Given the fact that most traders involved in trading groundnut are small scale traders who mainly start their trading business with low capital generated from own and/or family saving, it is natural that capital poses major limitation for their trading business. For processors, on the other hand, the primary limitation that is mentioned by more than one third of the processors is low and varying quality of groundnut. Lack of capital is the second limiting factor in case of processors.

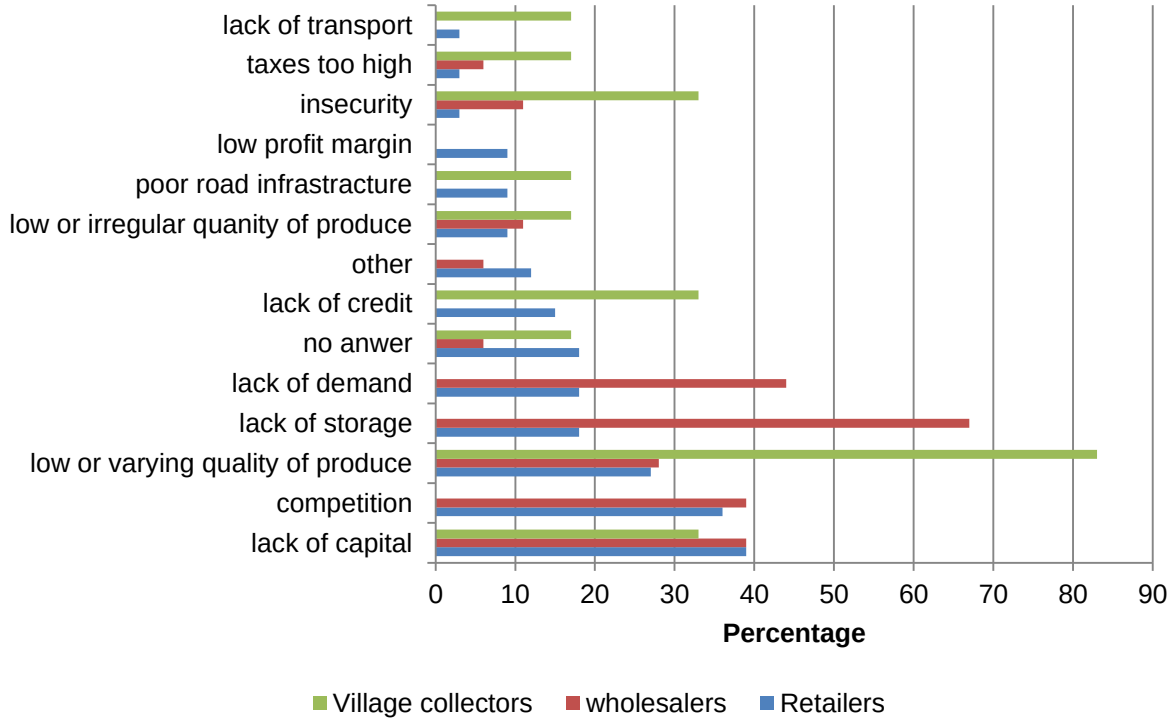


Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 11: Constraints preventing business expansion

Competition and low quality of groundnut are the next two major constraints identified by about a third of the traders. The other major constraints include lack of storage (32%), low demand (25%), low or irregular quantity of groundnut supply (14%) and lack of credit/credit is too expensive (12%). Other constraints of lower significance including security issues, poor road infrastructure, low profit margin, government restriction/high taxes and lack of transportation were cited by very low percentage of traders (4 – 9%).

Some limitations such as competition seem to be significant for traders than processors, on the other hand constraints such as transportation problem pose more limitations to processors than to traders.

Next, we want to see if the constraints limit capacities of traders differently. Figure 6.6 indicates that differences in perceptions between wholesalers, retailers and village collectors exist as far as the major constraints are concerned. For retailers, the major constraint is lack of capital followed by competition. It is obvious that many of the retailers are small scale retailers whose start up capital is usually small. For this, capital poses a significant limitation on the ability of retailers to expand their business. The fact that retailers are large in number could also entail that competition among this group of traders is stiff. For wholesalers, storage problem is the major constraint reported by more than 67% of the respondents. Wholesalers buy in large quantities from village collectors and farmers, and sale in smaller quantities to retailers. To do so, among other things, storage facility is required. Wholesalers especially those in Addis Ababa mentioned the problem or lack of sufficient storage space is placing a constraint in their trading activities. Besides storage problem, lack of capital, lack of demand, and competition are other significant constraints to wholesalers. Village collectors are the ones that are mainly engaged in collecting groundnuts from farmers. According to the village collectors, the biggest constraint in their business is to get proper quality of groundnut that can easily be purchased by wholesalers. More than 83% of the village collectors complained that groundnut collected from farmers are not only low quality but the quality varies significantly. Significant proportion of wholesalers and retailers have also reported low quality as a constraint.

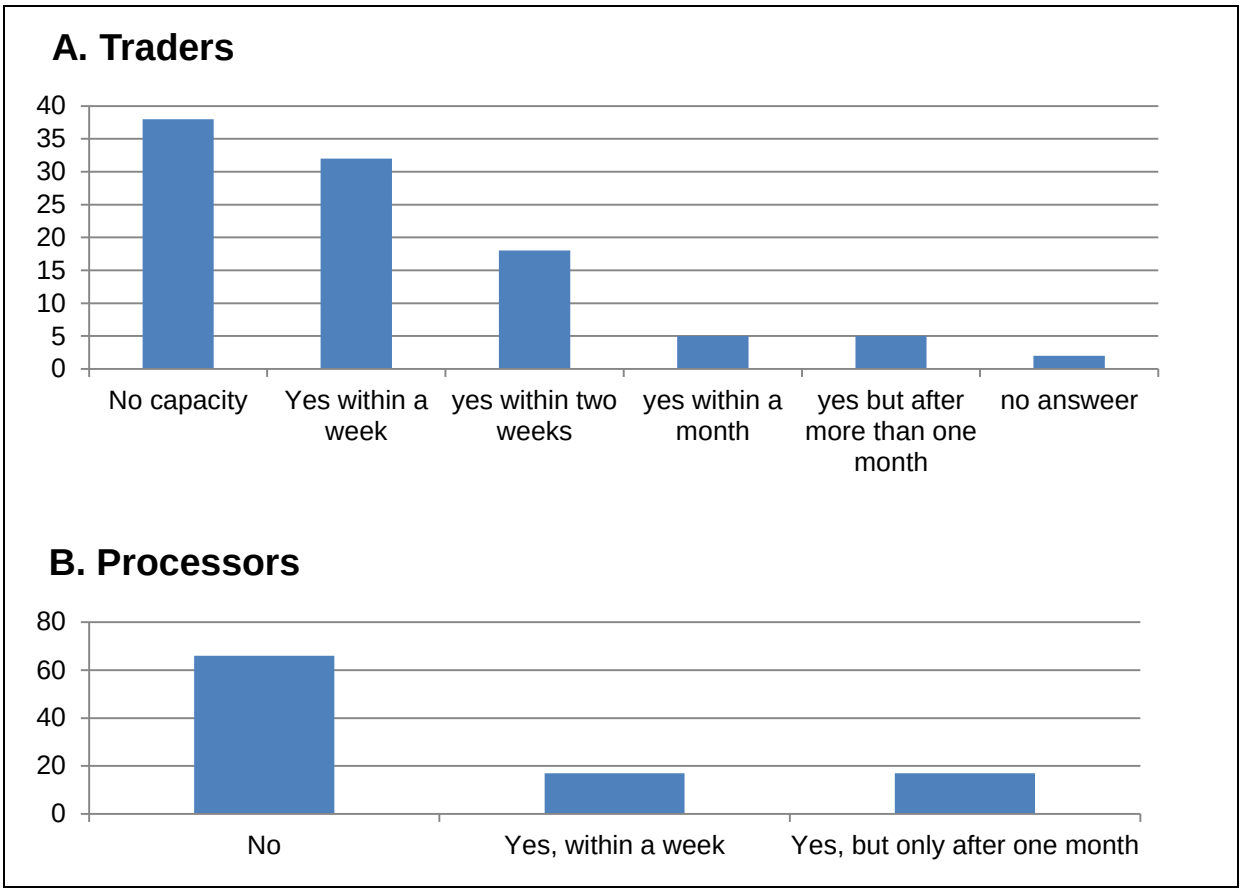


Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 12: Main constraint to increasing trader capacity by trader type.

5.3.2 Traders capacity to meet increased demand

A way of accessing traders' capacity to respond to increased demand is through direct questions on traders' perception on their ability to increase supplies under the existing cost structure and value chain. However, traders' answers may be biased by a number of factors such as the perception of potential business opportunities, or the fear that the information could be used by fiscal authorities or competitors. In view of this the figures need to be interpreted with caution.

Traders and processors were asked whether they are able to serve an increase in demand under the existing cost structure and value chain. More than 38% of the traders' were not comfortable at all with the idea of meeting additional demand. The figure is even more for processors - 67% of the processors said they cannot meet additional demand. Among those who said that they are able to supply if additional demand is created, most responded that they are able to meet additional demand within a week (32%). Around 18% of the traders said they can meet additional demand within two weeks and finally close to 5% of the traders said they are able to meet additional demand within a month and a similar proportion said they need more than one month to meet additional demand.

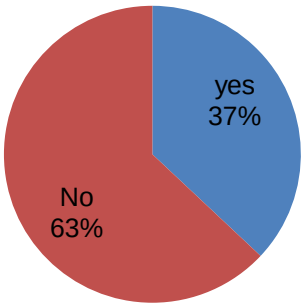


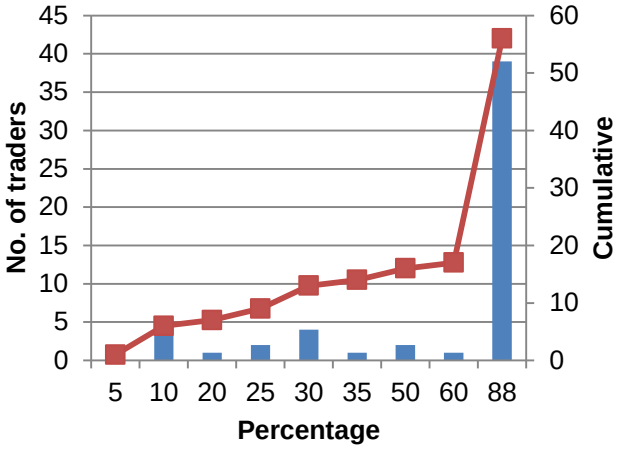
Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 13: Time frame to deliver in case of additional demand

5.4 Credit and stock

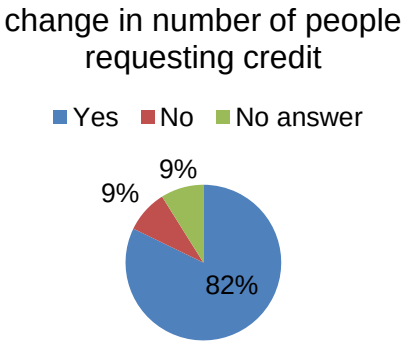
Access to credit can be one of the means traders may pursue in order to be able to meet increased demand. From a wholesaler perspective, assessing whether credit is provided or not is an indirect way of analysing to what extent smaller traders can go beyond their limited resources. For retailers, it means how far they can differ the revenue recognition to temporarily support households' limited purchasing power.

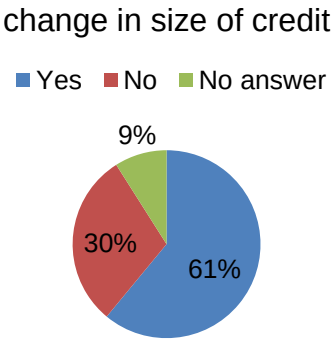
According to Figure 6.8, only 37% of the traders and processors do provide credit to their customers. The maximum amount of credit provided is 90% of their sales. By trader category, only 16% of retailers, 33% of village collectors, 56% of wholesalers and 86% of processors provide credit to their customers. Moreover, traders were asked if the current number of customers requesting credit and the size of credit they currently provide has changed compared to similar period last year.





Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 14: Traders providing credit and share out of total sales.



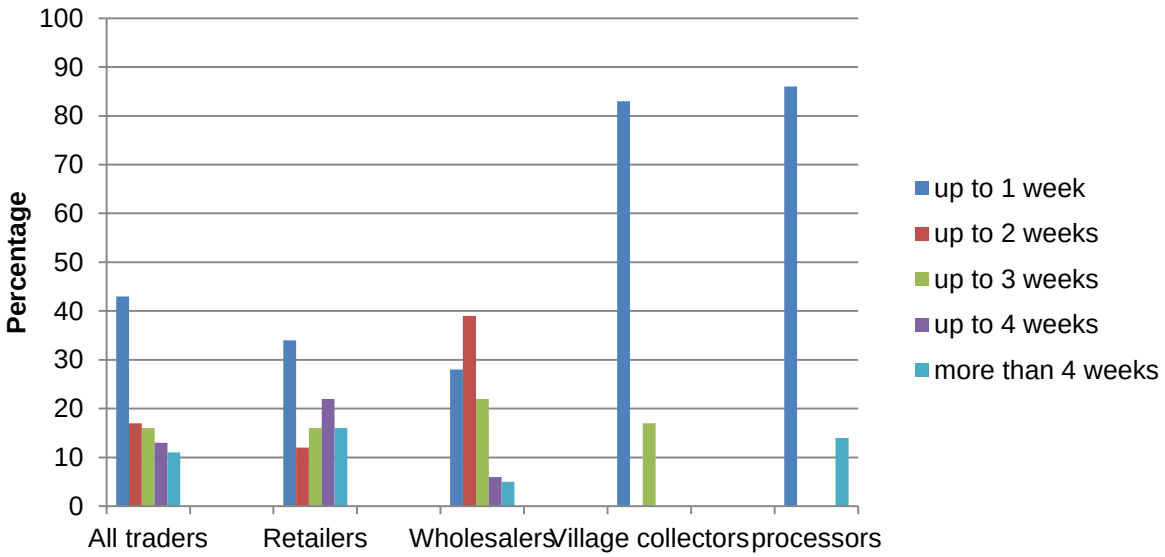


Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 15: Changes in number of customers requesting credit and size of credit compared to same period last year.

Figure 15 shows that out of the traders and processors who provide credit to their customers, 82% and 61% respectively confirmed that the number of customers requesting credit and size of credit traders provide has increased compared to the same period last year. Traders especially wholesalers and processors therefore have some room to expand their business, which can be conservatively estimated between 5 – 10% of their current sales and could be considered as an appropriate starting reference to assess traders' capacity to meet additional demand.

Beyond credit, stocks are another key element to control for response capacity evaluation. Limited stocks can hinder traders to meet increased demand, especially when the operational capacity of the market is so volatile that proper stock turnover is not always granted.

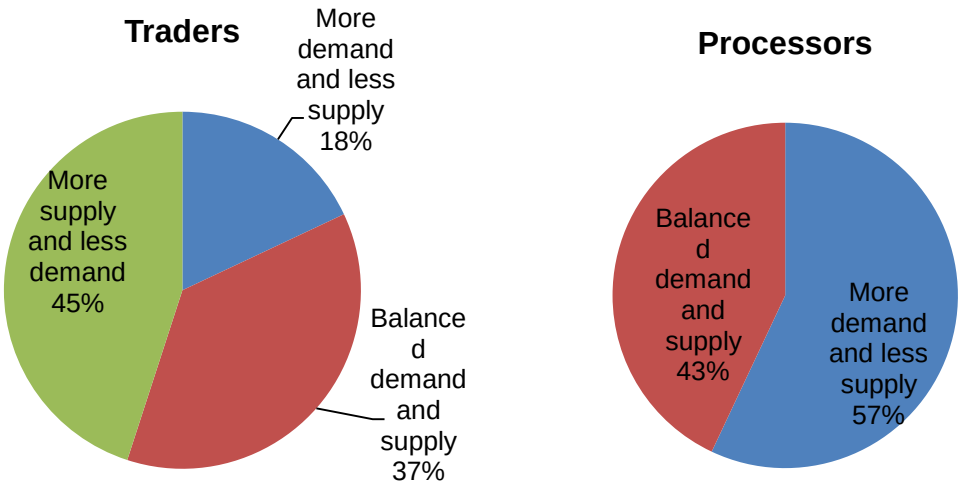
The majority of traders rotate their stocks in about one week except for wholesalers where the majority (39%) keep stocks for up to 2 weeks. On average, retailers keep for about 2.9 weeks followed by wholesalers (2.5 weeks), village collectors (1.3 weeks) and finally processors (1.02 weeks).



Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 16: Usual time gap between groundnut purchasing and selling.

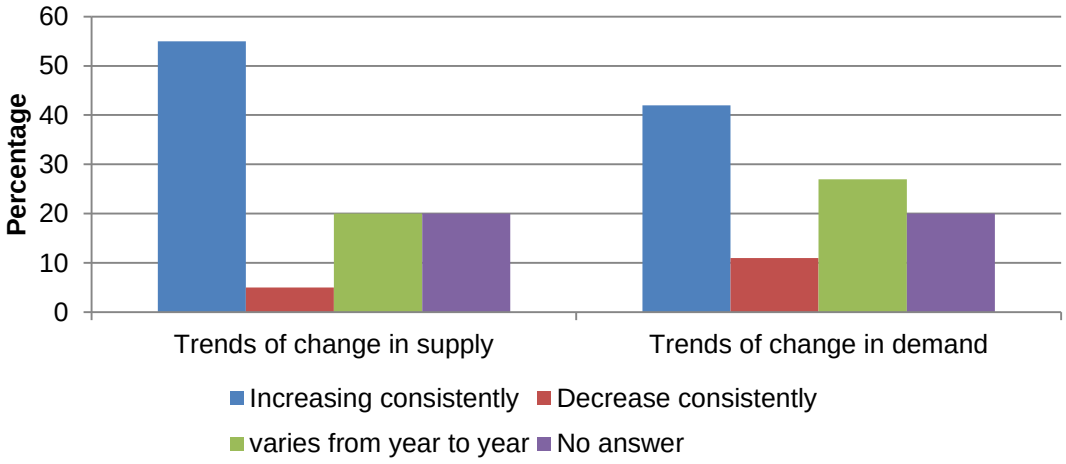
5.5 Demand and supply responses

Traders and processors were asked their assessment about the balance in demand and supply of groundnuts in the market. About 37% of the traders and 43% of processors said that demand and supply of groundnuts are balanced. Most (45%) said there is more supply than demand and the remaining 18% assessed that there is more demand than supply for groundnuts. On the other hand, most processors (57%) assessed that there is more demand for their product than supply. In fact, none of the processors indicated more supply than demand.

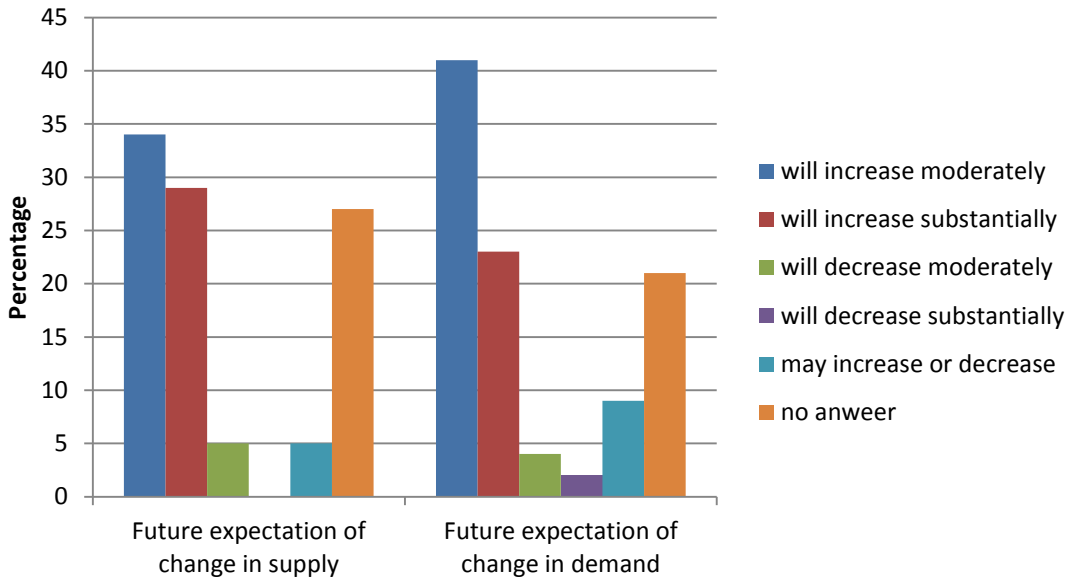


Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 17: Traders perception of the balance between demand and supply.

Similarly traders were asked their assessment about the trends, and their future expectations of changes in demand and supply. Most traders and processors have confirmed that demand and supply of groundnut have been consistently increasing over the last few years. Only a few have subscribed a consistent decrement in both demand and supply over the last few years (Figure 18). Similarly, traders and processors were asked about their perception of the future changes in demand and supply. Most are optimistic about the future market for groundnut. More than 60% of the traders and suppliers said that demand and supply of groundnuts will increase in the future. Only close to 5% of the traders and processors said that future demand and supply of groundnuts will decrease (Figure 19). This implies that there is a relatively growing potential for expansion of the market for groundnuts in Ethiopia.

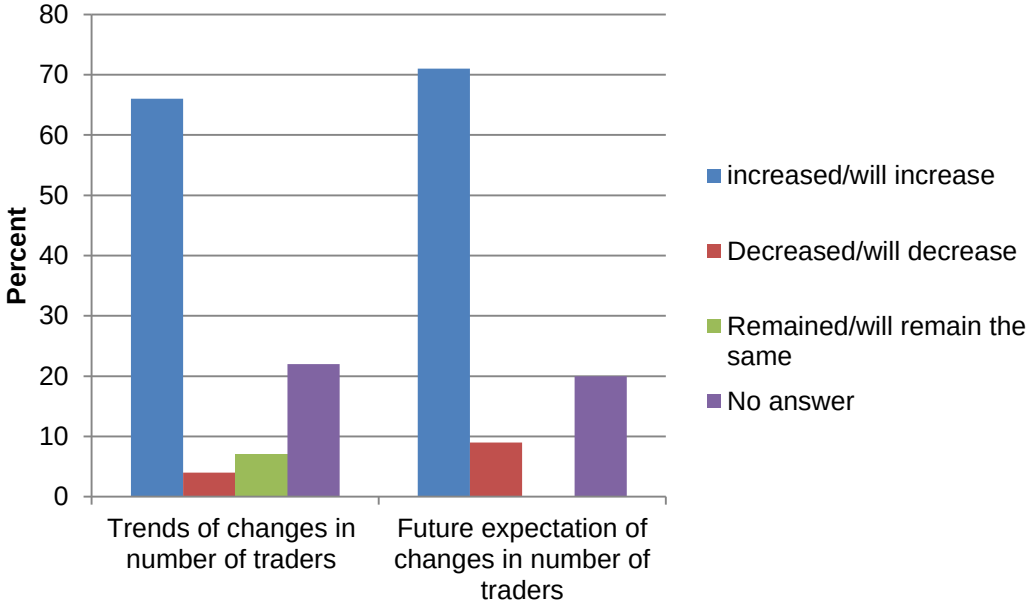


Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 18: Traders perception of trends of change in demand and supply of groundnut.

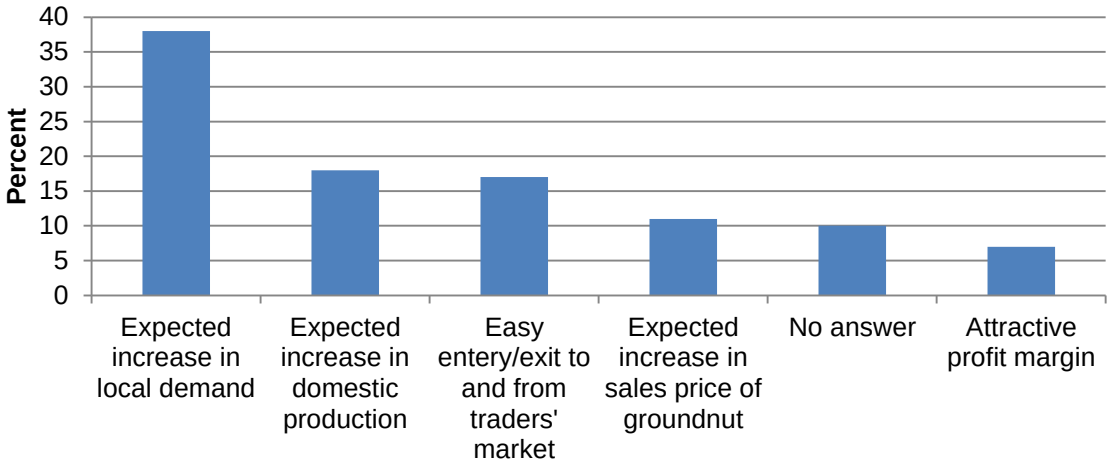


Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 19: Traders perception of future expectations of change in demand and supply.

Similarly, the questionnaire also included questions on the current trends of changes in number of wholesalers and retailers and what will happen to these number in the near future to understand traders' perception about the level of competition and participation of traders in the market. Most traders confirmed that the number of traders has been increasing so far and they expect that it will continue to do so in the foreseeable future (Figure 20).



Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 20: Traders' perception of current trends and future expectation of number of traders.



Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 21: Reasons for expected changes in number of traders.

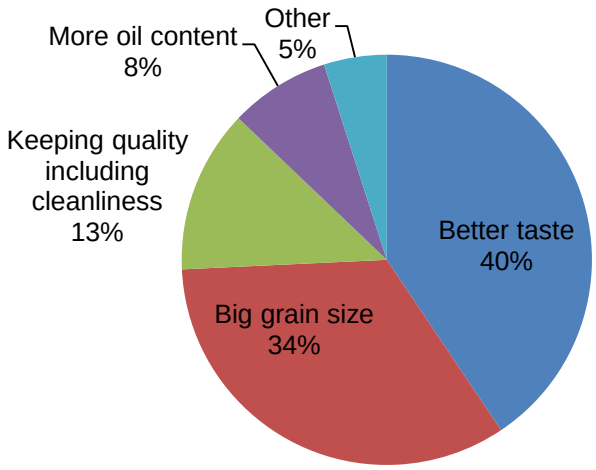
According to the traders' survey, the three major driving forces for their expectation of a rise in number of traders in the groundnut market in the future are expected expansion of local demand for groundnut followed by similar expansion expectation in domestic production, and finally easy entry and exit to and from the traders market. Other factors mentioned also include expected rise in price of groundnut and attractive profit margin (Figure 21).

5.6 Price determination and market preference

Traders' were asked how prices of groundnuts are determined in the market. More than 70% of the respondents said that individual traders determine the price of their own product and in many cases mark-up pricing policy is followed. Traders' at different levels consider the cost of purchase and add up their own mark-up to determine selling prices. Only a few (around 15%) have said that groups of wholesalers set prices in the market.

To further understand the factors considered in price determination, traders were asked about the key factors considered while fixing prices. Survey result indicate that the main factor considered while fixing price is taste (mentioned by 33% of the respondents) followed by cleanliness (23%), i.e., the seed is not infected by aflatoxine, source (21%) - mainly groundnut from eastern Harer fetches high price, and size (19%).

Similarly, traders were also asked to state the characteristics of groundnut that are most preferred in the market. Most traders have pointed out that among different qualities, taste is the attribute that is highly favoured in the market followed by grain size. Usually grains big in size are highly preferred in the market. The third important factor is quality of the grain including cleanliness (Fig. 6.15).



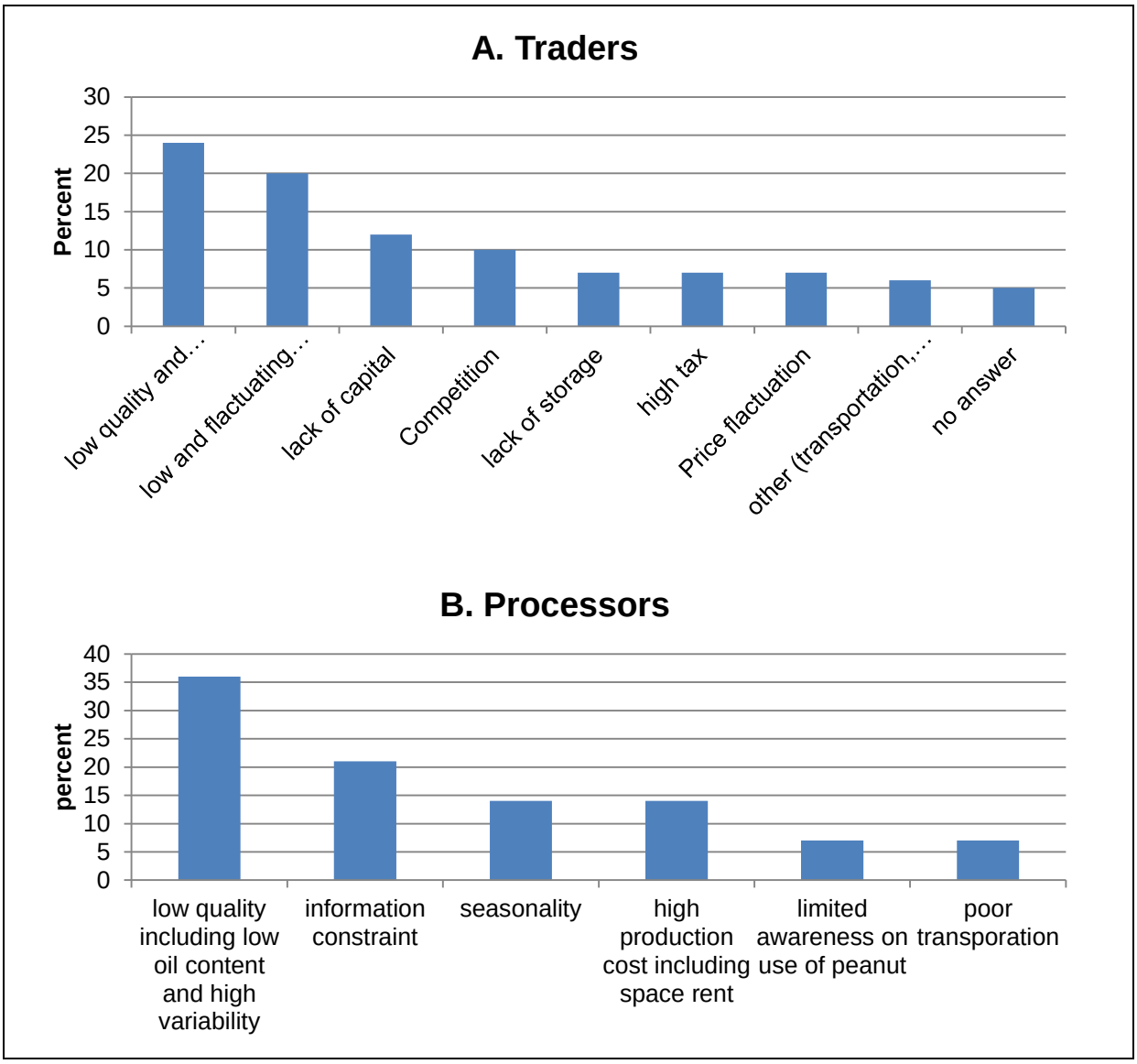
Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 22: Quality of groundnuts preferred in the market.

5.7 Traders' and processors' perception of challenges and opportunities in groundnut market

Finally traders' and processors' were asked about main challenges they face in operating in the market and their perception of the major opportunities for the future. Both the challenges and possible opportunities are summarized below separately for traders and processors.

Marketing Challenges

For both traders and processors, the main challenge is related to supply. The traders at the different levels and processors complained that the supply of groundnut is low in quality and it is highly variable. The quality problem starts from the farm level. When groundnut is collected from farmers, it is of low quality, i.e., it is highly infected by aflatoxin. Because of lack of proper storage facility and limited knowledge of traders about groundnut, the quality of the groundnut continues to deteriorate when stored for a relatively longer period of time in the hands of traders. For this, most traders argue they avoid buying in large quantities because of the fear of loss in quality of the groundnut when stored.



Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 23: Perception of traders about challenges faced in groundnut trading.

The second major challenge mentioned by traders is related to demand. Demand, although, increasing from time to time, is still low and varies significantly. Many traders argue that groundnut consumption particularly processed groundnut is considered by many consumers as luxury consumption, i.e., it is considered that only the haves can afford to consume. However, the same traders admitted that despite demand being currently a big constraint, it is changing slowly. They are optimistic that with a rise in income and awareness of consumers about groundnut, demand will continue to rise up in the future.

For processors, other constraints, next to quality problem of groundnuts, include lack of or limited information about the market and seasonality of supply of groundnuts. The processors in the study argued that market imperfection fuelled by limited information both in the input and output markets are putting limitations to their business. Moreover, seasonality of the supply of groundnuts is another issue blamed by processors as a limiting factor in the

processing industry of groundnuts. Availability of groundnuts is not uniformly distributed throughout the year. It is available in sufficient amount in the market during the period following the harvest season usually from November to March, and it is scarce for the remaining months of the year. This could be due to the fact that production of groundnut is highly dependent on rainfall. Production of groundnuts using irrigation either does not exist or it is extremely small. Besides production, lack of storage facilities and the fear on part of traders at different levels that its quality deteriorates when stored aggravates the smooth availability of groundnuts throughout the year.

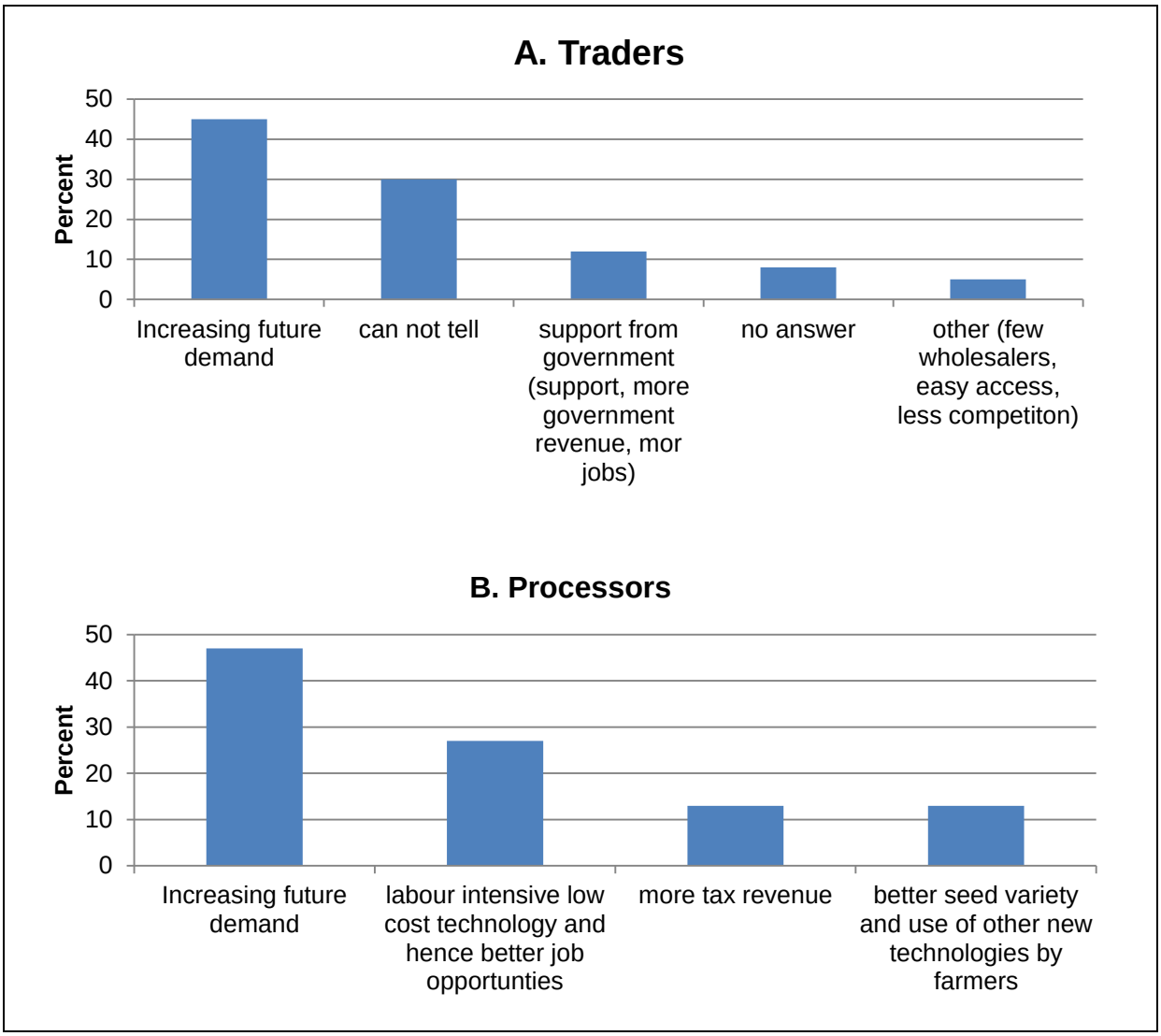
For traders, other challenges faced include lack of capital, high level of competition in the market, lack of storage, high government tax and price fluctuation. The fact that many traders in the survey use own or family savings to start their business coupled with limited access to finance along with problem of storage and the possibility of deterioration in quality when groundnut is stored for long period are posing serious limitations on the capacity of the traders. Because of these challenges, many traders are forced to operate at low capacity, i.e., to buy and sell small quantities in every transaction. The lack of capital and storage facilities not only limits the quantities they buy and sale but, also fuel competition among traders.

Market opportunities

As far as the future possible market opportunities are concerned, most traders and processors focused on one thing – they are optimistic about rises in future demand for groundnuts in Ethiopia. Some of the reasons for their strong assessment of a rise in future demand for groundnuts include a) consumers in Ethiopia are increasingly becoming familiar with consumption of groundnut. A typical case in point that many traders mentioned is the increasing use of groundnut butter and groundnut floor during fasting season, the latter being mainly used in making macchiato to replace milk, b) with the overall economic growth, the purchasing power of people in Ethiopia is increasing. This is increasingly diluting the understanding that groundnut consumption is only for the haves. An increasingly large number of people are getting the capability to afford purchase of groundnut, c) the traders are also optimistic that with measures taken to improve quality of groundnut, more and more of groundnut can be exported. This will help rise in demand for groundnut produced in Ethiopia.

Besides a possible future rise in demand, other opportunities mentioned by traders include a possible support from the government. The value chain of groundnut employs significantly large number of people especially small scale traders including street vendors. As part of the overall government policy that favours micro and small scale enterprises, the government could support the sector by easing its financial limitation and storage facilities.

Figure 6.18 also indicates that a large number of traders (about a quarter of them) were not in a position to tell about the future prospect of groundnuts in Ethiopia. They said that the future is the future, one cannot be certain about it. There may or may not be positive developments in the market for groundnut in the future.



Source: Source: ICRISAT, Traders' and processors' survey, December 2014
Figure 24: Traders' and processors' perception of opportunities in the future of groundnut trading.

For processors, other opportunities identified include the nature of the processing industry that best fits into the labour market conditions in Ethiopia. The technology required to process groundnut is not only simple but also labour intensive. This makes it a preferred establishment for the labour market conditions in Ethiopia given the relatively abundant low skilled labour available in the market. Moreover, agro-processing industry is one of the areas of investment that the government of Ethiopia is encouraging. For these and other reasons, the processors are highly optimistic that the sector will see significant expansion in the future. The final opportunity processors asserted is a possibility of expansion of production of groundnuts, both in quality and quantity, by small scale farmers and even commercial farmers supported by the use of new farming technologies including use of better quality seeds. This will ease the current constraints of availability of quality seeds in the market.

6 Mapping groundnut potential growing areas in Ethiopia

In Ethiopia, oil seeds are third important group of crops after cereals and pulses. Currently, oil seed crops are grown in about 855,750 hectares which is 6.8% of the total area under grain crops. The national production of oil crops is 760,100 tons which accounts for 2.8% of the national grain production. With a cultivated area of 64,643 ha, groundnut is the fourth important oilseed crop after Neug, sesame and linseed (CSA, 2015). The area under groundnut cultivation reached a maximum of 90,000 ha in 2012-2013 but started to decline there after due to various production and marketing problems. The area under groundnut during the 2014 crop season is estimated at 64,643 ha, recording a 28% decline over the two year period. However, the national Growth and Transformation Plan for the five year period from 2016 to 2020 (GTP II), set ambitious targets to achieve. The strategy targets to increase groundnut production from the current 100,000 tons to 165,000 tons by 2020. This will be achieved mainly by increasing the average productivity from 1.6 t/ha to 2.35 t/ha and by expanding the area under cultivation by 20%.

We examined the groundnut-production potential of Ethiopia by identifying all potential areas where climatic conditions allow groundnut production. The approach used to conduct the analysis was based entirely on bio-physical factors. It involved mapping of the current groundnut production areas, characterizing the environment in those areas, identifying suitable areas by defining critical thresholds for growing the crop and mapping the potential areas that meet the suitability criterion.

6.1 Groundnut production areas in Ethiopia

Though the crop is grown in five of the nine regions in Ethiopia, Oromia and Benishangul-Gumuz regions account for nearly 90% of the groundnut grown in the country. Within these regions, Eastern Hararghe zone in Oromia region and Metekel zone in Benishangul-Gumuz region are the main centres for groundnut production (Figure 5.1). Eastern Hararghe zone located in the Eastern Ethiopia is characterised by plateaus and rugged mountains. The altitude ranges from 500 to 3,400 metres above sea level. The lowlands (<1500 m above mean sea level) constitute 62.2% of the total area and is characterized as dry sub-humid tropics with an annual average rainfall of ranging between 400-820 mm and temperatures above 25^0C. Metekel zone in Benishangul-Gumuz region in the western Ethiopia is mainly a low altitude area with an altitudinal range of 550 to 2,500 meters above sea level. About 75% of the zone is low lands with less than 1500 meters above sea level. The climate is predominantly sub-humid to humid tropical. The average annual temperature ranges between 20 and 25^0C. January to May are the hottest months during which temperature reaches 28 - 34^0C. The annual rainfall amount ranges from 500 to1800 mm.

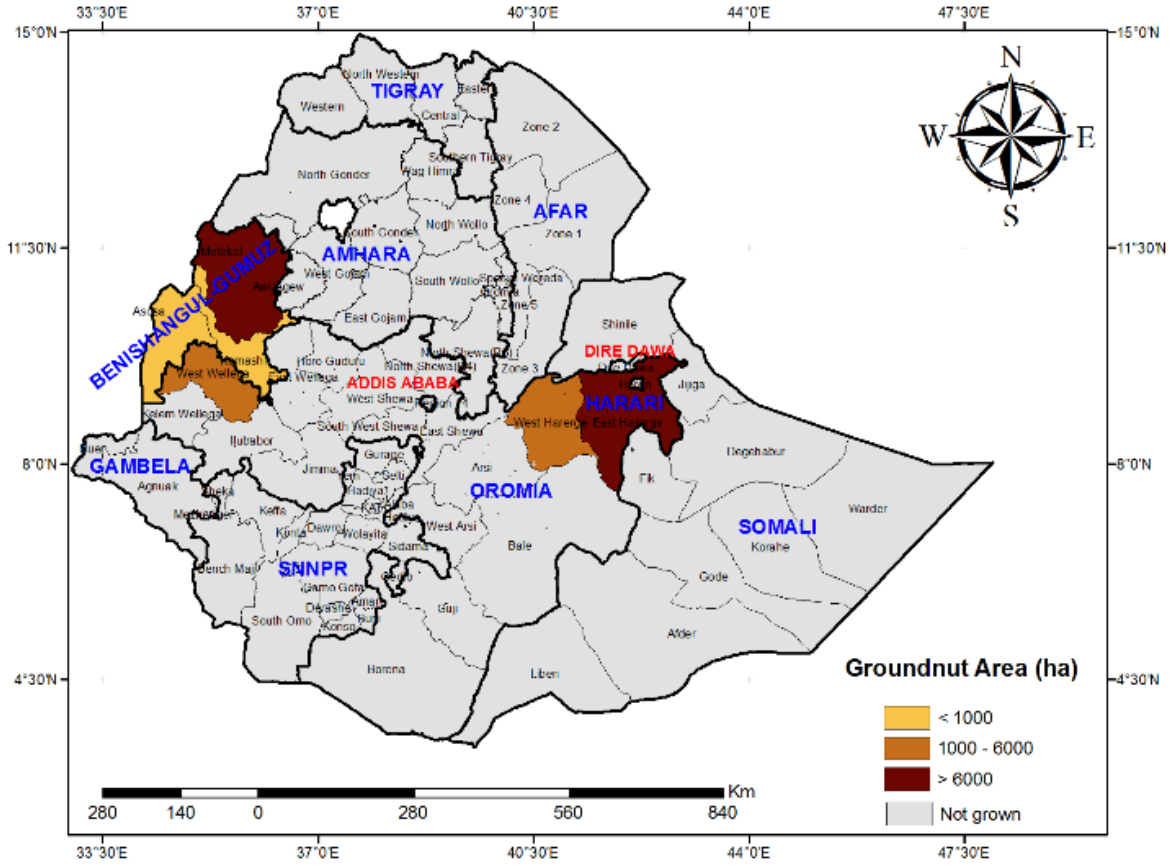


Figure 25: Groundnut producing areas in Ethiopia based on the data from CSA agricultural sample survey.

6.2 Identifying and mapping suitable areas

Although, groundnut is adaptable for a wide range of climatic conditions it requires a long and warm growing season. The optimum climatic conditions for groundnut include a well-distributed rainfall of at least 500 mm during the crop-growing season and temperatures in the range of 25 to 30ºC (Weiss 2000). Groundnut is fairly tolerant to drought and can be produced with as little as 300-400 mm rainfall during the season. However, for commercial production a rainfall of 500 to 1000 mm would be optimal. It grows well in well-drained light textures soils as it helps in easy penetration of pegs and their harvesting. The optimum temperatures for growing groundnut ranges between 29 and 36.5^{0}C with 8-11.5ºC base temperature and 41-47^{0}C as maximum temperatures. Based on these general characteristics of the groundnut growing environments and considering the environmental conditions of groundnut growing areas in Ethiopia, the following limits (Table 6) were identified to define the potential areas for growing groundnut in Ethiopia.

Table 6. Criteria for mapping potential groundnut growing areas in Ethiopia

Parameters	Unsuitable range	Suitable range	Unsuitable range
Rainfall(mm)	<500	500-1500	>1500
Tmax(^{o}C)	<25	25-36.5	>36.5
Tmin(^{o}C)	<12.4	12.5-20.5	>20.6
Altitude (m)	< 367	367 - 2300	>2300

Using ArcGIS, groundnut suitability map was produced as per the criteria in Table 6. The spatial rainfall and temperatures (maximum and minimum) layers obtained from WorldClim-Global climate data website (http://www.worldclim.org) and altitude was derived from digital elevation model (DEM) data for Ethiopia. Using spatial analyst tool of ArcGIS, the monthly seasonal rainfall amounts were calculated from the monthly values. Though there are two seasons, we considered the main rainy season from June to September which is locally referred to as Kirempt season. Average maximum and minimum temperatures for the season were also computed using the same approach. The 4 layers (rainfall, maximum temperature, minimum temperature and altitude) were reclassified into Boolean images using the criteria in Table 5.1, which displayed only suitable and unsuitable areas. The Boolean images were combined using weighted overly analysis tool and the resulting map displayed areas that are suitable for growing groundnut (Figure 26). All the four variables are given equal weightage. The areas that unsuitable for groundnut production are the very dry and hot pastoral areas in Eastern and cool and wet highland areas in the central Ethiopia.

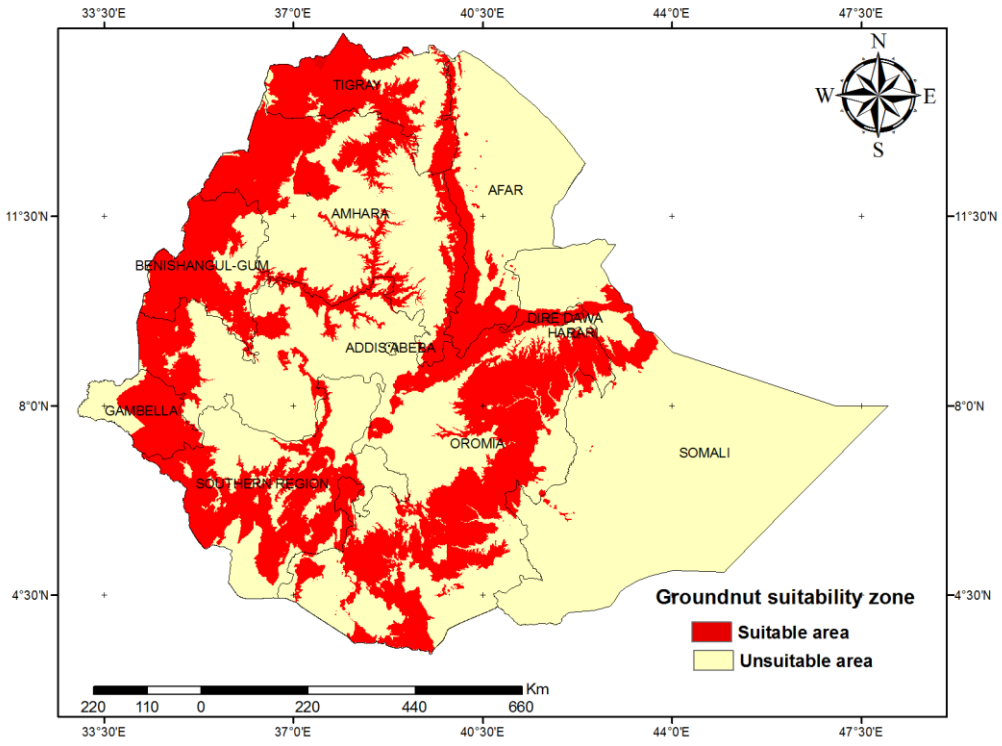


Figure 26: Map showing potential areas suitable for groundnut production

Total area covered by the climatic conditions that are suitable for groundnut cultivation was computed by adding the area in the grids that are identified as suitable (Table 7). About 38 million hectare area in the country has met the criteria of which 41% is in Oromia region and 15.5% is in Amhara region. Southern Nations Nationalities and People (SNNP), Tigray and Benishangul regions account for about 10% each. These estimates indicate the total area and thereby include both arable and non-arable land. Hence, the area identified as suitable for groundnut cultivation should be considered as the preferred domain for promoting groundnut cultivation. While selecting appropriate locations within the domain, attention should be paid to other key variables such as current cropping systems, profitability of groundnut compared to other enterprises and market access which are not considered in this exercise.

Table 7: Area and percentage of groundnut crop in Ethiopia

Region	**Area suitable for groundnut production**	
	Area (ha)	Area (%)
Oromia	15,643,429	41.0
Amahara	5,919,423	15.5
SNNP	3,963,778	10.4
Tigray	3,720,215	9.8
Benshangul	3,667,826	9.6
Afar	1,938,285	5.1
Gambela	1,705,466	4.5
Somali	1,410,368	3.7
Dire Dawa	131,271	0.3
Harari	23,787	0.1

7 Summary, conclusions and recommendation

7.1 Summary and conclusion

Groundnut, which is cultivated in many countries in the world, supports the lives of millions of households as a staple food and valuable cash crop. In Ethiopia, groundnut is grown in the lowlands and is the second important lowland oilseed of warm climate next to sesame. It is playing an increasingly important role as an alternative oil crop to an increasing number of small holder farmers.

Groundnut is one of the five mandate crops of ICRISAT. Given the immense potential of groundnut production in Ethiopia, ICRISAT together with other local research centres is working on groundnut to better understand the situation of groundnut production and marketing in Ethiopia. This report along with other previous and ongoing studies will form a basis for developing future research agenda that contributes to improved production and marketing of groundnut in Ethiopia.

The report first analysed the broader issues including the overall production trends and productivity of groundnut, the marketing system in which it operates and exports of groundnuts. The study also investigated market structure and future prospects by means of primary data collection in December 2014. Data was collected from all types of actors in the trading of groundnut (village collectors, retailers and wholesalers) and processors. Information including volumes and flows of groundnut traded, traders' and processors' constraints and response capacity should demand exogenously increase, demand and supply prospects, market preferences, and challenges faced and opportunities of groundnut marketing. Given the increasing demand and potential for groundnut, we then, based on the crop characteristics and looking at the agro-climatic conditions of the areas currently growing groundnut, analysed potential areas were identified and an overall mapping of potential production areas in Ethiopia was made.

Historical trends show that over the period 2004/05 to 2013/14, the compounded annual average growth rate of productivity showed positive growth (3%) though at a slower pace. The growth in production is contributed more by area expansion (79%) than by yield (21%) enhancement. Ethiopia's groundnut productivity remains low largely due to the continued use of unimproved/local varieties by producers. The low adoption is mainly attributed to the underdeveloped and inadequate seed systems, shortage of quality seed and lack of timely delivery, and insufficient access to production credit to farmers, among others.

Most of the production of groundnut in Ethiopia is used for domestic consumption. Only a small proportion of it is exported. Among many factors that contribute to low level of exports is quality of seeds. The aflatoxin contamination of groundnut in Ethiopia is well above the acceptable level that it significantly inhibits export.

Traders have little capacity to buffer against market condition changes as many of them have relied on limited supply sources and keep stocks for only about a week. The lack of storage facilities and the fact that groundnut deteriorates in quality when stored have made traders to buy and sale small quantities of groundnut. Surprisingly, more than one-half of the traders in the survey are quite confident to be able to deliver additional supply, in case

demand would enhance by 25 percent, allowing for increasing prices. None of the processors on the other side operate at full capacity. All are operating below capacity blaming for the low quality and quantity of supply of groundnuts in the market.

The market for groundnut in Ethiopia faces wide range of challenges, which are related with i) lack of quality groundnut and high variability including seasonality, ii) lack of capital and credit facilities, iii) problems related to market infrastructure mainly lack of storage facilities and market information, and iv) competition and demand problems

Despite the challenges, demand for and supply of groundnuts is increasing and both traders and processors are optimistic that it will continue to do so for the future. Respondents attributed a possible rise in demand as the single most opportunity in the market. Some of the reasons for their strong assessment of a rise in future demand for groundnuts include a) consumers in Ethiopia are increasingly becoming familiar with consumption of groundnut. A typical case that many traders mentioned is the increasing use of groundnut butter and groundnut floor during fasting season, the latter being mainly used in making macchiato to replace milk, b) with the overall economic growth, the purchasing power of people in Ethiopia is increasing. This is increasingly diluting the understanding that groundnut consumption is only for the haves. An increasingly large number of people are can afford purchase of groundnut, c) the traders are also optimistic that if measures are taken to improve quality of groundnut, more and more groundnuts can be exported. This will help rise in demand for groundnut produced in Ethiopia.

Taste, size of seed and cleanliness are the attributes that are highly regarded in the market when prices and preferences of groundnuts are considered. For this, traders confirmed that groundnut grown in Eastern Harerghe is highly demanded in the market compared to groundnuts grown in other parts of Ethiopia.

7.2 Recommendation

Increase production technology to enhance productivity and quality of production: with a rise in income of consumers in a country with over 90 million inhabitants and a continued familiarization of consumers to groundnut products, one can expect that there is huge potential domestic market for groundnut. The current level of production and hence supply, which is characterized by low quality products and high variability, however cannot meet the growing market demand. It is highly recommended to use improved production technologies to supply quality product in sufficient quantity. Among others, effort has to be made to promote the use of improved varieties by farmers to improve productivity. This will require coordinated and collaborative efforts from the public as well as the private sector.

Strengthening marketing infrastructure: Once good quality groundnut is produced in sufficient quantity, it requires strong coordination and a well-functioning market infrastructure to optimize gains from groundnut production by improving storage facilities and mechanisms of sharing market information,

Increasing capacity of traders: Traders play a major role in mediating between producers and consumers, between producers and processor, and between processors and consumers. However, the capacity of traders at different levels is limited both in terms of the means to increase their participation in the market and their knowledge about the product.

Building capacity of traders through provision of credit facilities and training on how to keep groundnuts on stores without significantly reducing quality of the product would enhance availability of quality groundnuts in the market throughout the year. This reduces the seasonality problem currently observed.

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