Sesame Supply and Value Chains Assessment in North-West Ethiopia

With a focus on Child Labour

Report by FSiAbd Consult

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World Vision Ethiopia

FIFTY EIGHT Just good business.

PACE Partnership Against Child Exploitation

UKaid from the British people

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Abbreviations/Acronyms

ACCs	Agriculture Commercialization Clusters
AGD	Age, Gender, and Diversity
AIDS	Acquired Immune-deficiency Syndrome
ATA	Agriculture Transformation Agency
CAR	Central African Republic
CBI	Center for Business Information for Developing countries
CDI	Center for Development Innovation
COVID-19	Corona Virus Disesae-2019
CSA	Central Statistical Agency
DRC	Democratic Republic of Congo
ECX	Ethiopian Commodity Exchange
EPoSPEA	Ethiopian Pulses, Oilseeds and Spices Processors Exporters Association
ETH	Ethiopia
FAO STAT	Food and Agriculture Organization Statistics
FC Union	Farmer Cooperative Unions
FGD	Focus Group Discussion
FPC	Farmer Production Clusters
FTC	Farmers Training centres
HH	Household
FOB	Free on Board
HIV	Human Immune Virus
ILO	International Labor Organization
ICT	Information, Communication &Technology
IAIP	Integrated Agro-Industrial Park
KII	Key Informant Interview
MFIs	Micro-finance Institutions
MoLSA	Ministry of Labours and Social Affairs
NGO	Non-Governmental Organizations
OECD	Organization for Economic Cooperation and Development
PACE	Partnership against Child Labor Exploitation
PC	Primary Cooperative
PEST	Political, Environment, Social and Technological
PSUs	Primary Sampling Units
RuSACCOs	Rural Saving and Credit Cooperatives
RUFIP III	Rural Financial Intermediation Programme III
SBN	Sesame Business Network
SCP	Structure, Conduct and Performance
SHF	Smallholder farmers
SNNPR	Southern Nations, Nationalities and Peoples Region
SPSS	Statistics for Social Scientists
SSU	Secondary Sampling Unit
SWOT	Strengths, Weakness, Opportunities, and Threats
ToR	Terms of Reference
TRF	Thompson Reuters Foundation
UN	United Nations
UNGEC	United Nations Global Compact
VCM	Value Chain Map
WFCL	Worst Forms of Child Labor
WVE	World Vision Ethiopia

Key Concepts and Definitions of Terms

Agricultural Commercialisation Clusters (ACCs)
ACCs are an initiative of Ethiopia's Agricultural Transformation Agency. The aim is to integrate the production of certain high priority crops, such as wheat, maize, malt barley and sesame, in order to maximize production and productivity.

The initiative contains clearly defined geographic clusters specializing in priority commodities across the four major agricultural regional states of the country, Oromia, Amhara, Tigray and SNNP.

Most relevant for this report are sesame clusters. Within each sesame cluster, efforts have been made to enhance farm scale by using Farmers Production Clusters (FPCs), where 30-200 farmers are grouped together on adjacent land to farm as one.

These FPCs are required to adopt the latest full-package farm recommendations, including the use of improved seeds, fertiliser, and other farming best practices. Over time, FPC farmers are expected to move towards becoming as established as commercial companies.

Agricultural marketing
Agricultural marketing encompasses all the services and activities involved in moving a product from the point of production to the point of consumption.

Agricultural Extension Services
Agricultural extension services are effectively agricultural advisory services. In relation to this study, this means helping farmers improve their knowledge of techniques and skills to improve their productivity, food security and livelihoods. In Ethiopia, this includes **Farmer Training Centres** (**FTCs**) as well as **Development Agents** (**DAs**), which are personnel with advanced training in and knowledge of agricultural techniques and can be assigned to farms to promote best practices and boost productivity.

Agro-ecological zones
Agro-ecological zones are defined on the basis of combinations of soil, landform and climatic characteristics. Elevation is the main determinant of agricultural land-use in Ethiopia due to its influence on temperature.

The Ethiopian Ministry of Agriculture and Rural Development has mapped out 18 major agro-ecological zones across the country based on temperature and moisture levels. Each of these zones has typical crops. Some crops might be grown in several zones, while others in only one or two.

This study focused particularly on semi-arid lowland agro-ecological zones in Tigray and Amhara, which are most suitable sesame farming.

Non-farm activities
These are private sector activities that exist outside of the agricultural market system. Examples include health care, hospitality, education, mining and tourism.

Off-farm activities
These are agriculture-related activities that occur beyond the farm, but nonetheless involve agricultural products. Examples of off-farm services include processing, storage, and transportation.

Political subdivisions in Ethiopia
There are several political subdivisions in Ethiopia. At the highest level, it is divided into ***states***, which are then divided into ***administrative zones*** (not to be confused with agro-ecological zones), which in turn are split into ***woredas***. The smallest political subdivision is the ***kebele***, which is a municipality.

USD to ETB exchange rate
Throughout this study, pecuniary terms are given in Ethiopian Birr. At the time of publication, the exchange rate for USD to ETB was:

1 USD = 40.56 Ethiopian Birr

Note on the use of the terms vertical and horizontal integration

The conventional definition of horizontal integration is the acquisition of a related business. Similarly, vertical integration is traditionally defined as the process of acquiring business operations over one or more stages in the production or distribution of a product.

In this report, the team use the terms slightly differently. Here horizontal integration is taken to mean links and relationships between different actors at the same level of the value chain. The term is particularly used in the report when analysing unionisation at the producer level. The report uses the term vertical integration to mean links and relationships between actors at different levels of the value chain, and used to discuss, for example, flows of information about market price down to producers.

Executive Summary

This mapping and assessment of the oilseed, grain and pulse supply and value chains in Ethiopia was commissioned by the Partnership Against Child Labour Exploitation (PACE) to provide insights into the local labour market and inform its programming.

Overall, the programme seeks to enable all children to enjoy their rights to protection from the Worst Forms of Child Labour (WFCL) – as defined by the International Labor Organization (ILO) as work that most threatens a child's wellbeing and development. It seeks to do this through testing innovative strategies to understand what works to reduce and prevent the WFCL. The PACE programme is particularly concerned with WFCL in fragile contexts, as these are the situations where the risks to children in the most dangerous types of work are most acute and complex.

To contribute to this aim, this assessment takes an innovative and comprehensive 'bottom-up' approach to supply chain mapping. It shows where and how the WFCL intersect with supply chains and thus supports the private sector in their efforts to reduce or eliminate child labour from their networks. It also seeks to provide insight into where and how livelihood opportunities could be expanded so as to reduce household reliance on child labour. Additionally, this assessment therefore signposts how PACE can pilot and scale up interventions going forward.

This study covered six districts, or *woredas* as they are known locally, from two regions of north west Ethiopia that are well known for sesame production: Metema, Quara and West Armacho from Amhara region; and Tsegede, Kafta Humera and Welkait from the Tigray region. Three sample *kebeles* were selected from each *woreda.*

Both quantitative and qualitative methods were used in this study. 372 male-headed households and 83 female-headed households were selected using systematic random sampling from the 18 *kebeles* of the Amhara and Tigray regions.

Qualitative data was additionally gathered from various relevant sources: 24 focus group discussion with community members, 102 adults were interviewed in depth and six focus groups with children were held. 61 key informants, and experts' were also consulted on labour market governance, composition and complexities in adult and child labour WFCL.

They key findings of the study are below:

- Mixed farming is the mainstay of the community: 94.9% of respondents in all the study *woredas* of depend on a combination of crop and livestock production. The average amount of land owned by the sample respondents of the study *woredas* was about 3.63 hectares per household, which is above national average. About 66.2% smallholder households surveyed in the study areas hold fewer than five hectares per household. The proportion of those holding between five and 10 hectares and less than ten hectares are 22.8% and 11% respectively.

- Sesame, sorghum, and cotton are the major crops in the study areas. However, producers, including smallholder, medium- and large-scale farmers are more involved in the sesame seed business than other crops due to its high demand and market value. It allows households to boost their incomes in a short period, normally within one cropping season. However, traditional ways

of farming, including mono-cropping, are dominant, significantly reducing productivity. With regard to income distribution, about 56.8% of the survey households earnt between 10,001 and 15,000 ETB from sesame while 29% or 131 of the households earnt more than 50,000 ETB.

- The sesame farmed in the area has a low productivity compared to its potential. The average yield of the survey areas was about 4.6 quintals per hectare (2018/19). Lack of cash and/or credit was one of the most critical issues holding back sesame production, productivity and agricultural marketing. The services offered by financial institutions, particularly to smallholder farmers, were not satisfactory due to limited accessibility, high interest rates, and insufficiency of loan amount.

- Labour is another constraint in sesame production and productivity, particularly during weeding and harvesting times. Both adult and child labour is involved in sesame production. The labour used by large-scale commercial farmers and smallholder farmers is somewhat different. Large numbers of smallholder farmers in both study areas involved their family members, including child labour, in sesame production including ploughing (rarely), weeding and harvesting. About 40% of sesame production by smallholders used family labour, including children. The children were mostly between the ages of 12 and 17 years. The worst thing is that about 12.4% of children were found to be involved in applying fertilisers and spraying agricultural chemicals, activities which threaten their health.

  Commercial farmers, in contrast, are fully dependent on hired migrant labour. In some cases, when there is a critical shortage, they may accept children between the ages of 12 and 17. It is worth bearing in mind that the preference of commercial investors for adult labour over child labour does not emanate from their concern and awareness on child rights; rather it is in search of strong adult labour that is believed to perform better. However, between 300 and 500 local children are estimated to participate in commercial farms in the two regions when there is a serious shortage of labour.

- The average stay of seasonal labourers in sesame production areas is estimated to be about 50 days. There are three types of migrant and seasonal labourers. These are migrant labourers who remain permanently in the area, known locally as *salug*; seasonal labourers who are linked or informally bonded to commercial farmers; and those who migrate every season to look for jobs. The highland zones of Amhara region are the main sources of seasonal migrant labour. In fact, 50% of the migrant labour in the Tigray region originated from this region of Amhara. The rest of the migrant labour in Tigray comes from other areas within the region. Various sources indicated that every year 500 to 600 thousand migrant labourers arrive at the study area sesame clusters. Over 200,000 of these went to the Tigray region, while about 200,000 to 300,000 arrived in the Amhara study areas. Each year about 80,000 migrant labourers cross the Ethiopia-Sudan border through Metema and Humera to find work in the neighbouring Gedaref State and Kassala in Sudan, where labourers are highly in demand.

- Informal communication and networking is the most common way for labourers to hunt for available job opportunities. Before the onset of the sesame production season, labourers from the highlands were summoned by their friends and relatives and travel to the two sesame cluster regions. In some cases, big commercial farmers and regional governments announce job opportunities and call for adult labourers through radio. However, the majority would travel each year speculatively. This flow of labour usually occurs from the end of June to October each year.

- The COVID 19 pandemic has negatively affected the supply of labour. According to the focus group participants, seasonal labour migration was subdued because they feared that they would become infected with COVID 19 and transmit it to their families after they return. Consequently, large numbers of sesame producers have been forced to change their plans and cultivated sorghum, soya beans and other crops instead of the more labour-intensive sesame. The shift in production from sesame to other crops was promoted and supported by the local or *woreda* government offices. COVID 19 has resulted a high loss in sesame production and has exacerbated the critical use of child labour within the community.

- As a social norm, parents engage their children in agriculture and domestic chores as a first form of vocational education for them. Hence, rural people often perceive the elimination of child labour as an attempt to deny children opportunity to help their parents and learn valuable skills.

- Though human trafficking and migrant children are very common, particularly in Metema and Humera, the involvement of trafficked and migrant children in sesame farming labour is not reported by focus group discussions and key informants.

- The daily wage rate for farm labourers varies according to location and type of labour. While adult labour wage pays nearly 120 ETB per day in Kafta Humera, the daily rate in Metema areas was lower, at around 100 ETB per day.

- Although the Ethiopian government has put in place legal frameworks and specific policies to address child labour, the problem still surges as poverty rises. It also interferes with school attendance. This is due to the poor implementation and enforcement of policies and regulations. This was attributed to limited budgets, lack of coverage and technical capacity and a low awareness of the impact of child labour exploitation. An additional factor has been the failure to acknowledge and address socio-cultural issues that hamper the effective implementation of policies.

- Small-scale producers do not have any consistent formal sources of market information, such as the global price of sesame. They instead use informal sources such as neighbours, friends or relatives or contacts in the business. This is mostly due to a lack of regular market information from public bodies. The use of technology is too limited and there is a failure to get information to the farmers. Large-scale producers have better options for obtaining market information through for instance public bodies, traders, commission agents and the ECX.

  Sometimes, *woreda* Trade, Industry and Transport branch offices issue the price of sesame based on information obtained from the ECX, while *woreda* agriculture offices also disseminate information. But this is not on a regular basis. Likewise, cooperative promotion and unions disseminate price information to their members. However, the market actors, traders and other players can access price information through sending texts to 934 or calling at 929 on a cell phone.

- Sesame is farmed entirely for commercial purposes, as long as it retains its market quality and standards. Poorer quality and second-grade sesame is kept for home consumption and local market processing into tahini. In both study regions, small-scale producers sell their produce to primary cooperatives and local traders. There are nine major agricultural marketing channels. These main actors in the sesame value chain include input suppliers, producers, including smallholder farmers and commercial farmers, market actors, processors, and consumers. However, both coordination between various actors and service providers and the governance of the supply chain is weak.

To address the varied and substantial challenges, and take advantage of the livelihood potential of sesame production, the following steps are recommended and key areas for interventions:

Recommendations

1. Improve productivity and agricultural marketing

- *Address the shortage and unreliable supply of seeds* through the provision of improved seed varieties that would be early maturing and higher yielding. Bureaus of agriculture, the Agricultural Transformation Agency and development partners play pivotal roles in empowering the cooperatives and their members, as well as the unions, to produce quality seeds and /or supply improved seed to farmers.

- *Improve the existing agricultural extension services on sesame production.* This should be achieved through boosting the capacity of farmer training centres and development assistants (DAs), which could then deliver appropriate training and information to producers. The sesame research centres of Metema and Kafta Humera *woredas* should also be built up.

- *Provide improved post-harvest management equipment* for help with activities such as harvesting, drying, threshing and agricultural marketing stages. This would reduce considerable crop losses in the study areas.

- *Increase the capacity of quality control systems and regional bodies, as well as improving the traceability of the seed*. Providing guidelines and enforcing standards for all seed producers would be an important step. Farmers also need support to enable to implement internal quality control.

- *Strengthen market information systems and improve linkages between various levels of the chain.* Currently, a lack of information and a disconnect between the supply chain actors, from farmers, to cooperative unions, assemblers and collectors means the market is operating inefficiently, with bottlenecks frequently occurring. Information systems should be farmer-focused and accessible. The promotion of contract farming, which is an agreement between farmers and processing and/or market firms for the production and supply of agricultural products under forward agreements, should be considered.

- *Establish a fairer and more stable pricing model for sesame*. The study identified unstable and unattractive prices for sesame seed producers as being critical constraints in production, as they were trapped in a vicious cycle of low income resulting in a poor ability to invest in their farm. The process of price setting is claimed to be unfair, typically with a lower difference between price and production costs than other grains. The study therefore recommends that existing prices are set based on actual detailed analysis of the production cost to farmers.

- *Increase warehouse space.* Lack of storage and post-harvest loss discourage producers from holding onto produce. This means they have to sell soon after the harvest, when supply is greatest and therefore price lowest. The absence of storage services at primary cooperatives not only affects the quality of the seeds, as inadequately stored seeds are likely to degrade, but also determines the amount and speed at which the seed can be aggregated. As a temporary solution some primary cooperatives have provided transport services and aggregated seed directly to their respective unions' store. ECX and cooperative warehouses are at more distant locations.

- *Expand access to financial services.* As most smallholder producers and primary cooperatives do not have assets that can be used as collateral to access loans from banks, they are classed as ineligible to borrow even the smallest amounts of credit, even for short-term loans to assist with peak season costs. In order to improve access to sustainable financial services, facilitating partners like the Agricultural Transformation Agency, regional cooperatives, NGOs and regional government should collaborate to create a system of time-sensitive annual loan guarantees, or link producers to other credit sources such as rural savings and credit organisations (RuSACCOs).

2. Improve labour efficiency and reduce/prevent child labour use

- *Address child labour through culturally appropriate awareness-raising.* Programmes should take into account cultural norms and the reasons that parents engage their children in agriculture and domestic chores. Parents often see child labour as a form of vocational education and therefore resist the elimination of child labour as an attempt to deny children opportunity to participate in family life and develop skills for future life.

- *Support sesame producers and local communities in efficient labour utilisation in a way that discourages the use of child labour.*

- *Provide technical and financial support to improve farmers' working conditions and income.* Child labour monitoring systems are crucial in identifying children engaged in child labour and for supporting them and their parents economically. Furthermore, establishing community-based child protection and monitoring committees to track child labour situations is an important step.

- *Incentivise farmers at local level by providing credit on the condition that they do not engage in child labour*. Compliance with this condition should be monitored in collaboration with formal financial institutions (such as banks, RUFIP and RuSACCos offices), agricultural extension offices and labour officials. There is a need to devise mechanisms that ensure RUFIP III (the latest rural finance programme) end beneficiaries respect the national Proclamation No. 1156/2019, which states that children under age of 15 are not employed, and young workers aged between 15 and 18 years should not perform work that is likely to jeopardise their health or safety.

- *Implement a child labour due diligence law*, which requires companies selling sesame to end users to determine whether child labour occurs in their supply chains or not. This necessitates the private sector addressing child labour as illegal and committing their policies and procedures accordingly.

- *Mainstream child labour concerns in development strategies*. This requires a harmonised, integrated multi-stakeholder approach. It is also important to consider child labour policy and programming within wider national policies such as in education policy, agriculture policy and others. This should be supported by better coordination among relevant bodies to make sure strategies implemented.

- *The basic principles of access to free and universal education for all children in the country* should be maintained to reduce the worst forms of child labour.

1. Introduction

1.1 Program Context and Background

This mapping and assessment of the oilseed, grain and pulse supply and value chains in Ethiopia was commissioned by the Partnership Against Child Labour Exploitation (PACE) to provide insights into the local labour market and inform its programming. Specifically, it was intended to assess where and how the worst forms of child labour intersect with supply and value chains, how this might be addressed and, more broadly, how livelihood opportunities could be expanded in order to reduce the reliance on child labour.

PACE is a UKAID-funded consortium of media, private sector, non-governmental and academic organisations focused on protecting children from the worst forms of child labour (WFCL), as defined by the International Labour Organization (ILO) as work that most threatens a child's wellbeing and development. This includes when children are: trafficked, held in debt bondage, serfdom or forced labour, or are forcibly recruited into armed conflict, used in prostitution or pornography, or engaged in hazardous work.

Despite the threat to children's wellbeing from this type of work, few studies have previously been conducted specifically on WFCL. Thus, one of the core aims of the PACE-implemented programme is to address that gap, with a focus on fragile contexts. Such contexts, where, for instance, a country is afflicted with disease or conflict, present acute and specific challenges for addressing WFCL, and are therefore a particular concern for PACE.

PACE's impact statement is: *to enable all children to enjoy their rights to protection from the worst forms of child labour, through testing innovative strategies to understand what works to reduce and prevent the WFCL in fragile contexts.*

The PACE strategy is being implemented in its three key operating countries, Ethiopia, the Democratic Republic of Congo and the Central African Republic, which are all areas that represent especially challenging contexts, featuring conflict combined with weak governance and rule of law.

There are four outcomes to the PACE strategy; this assessment contributes to outcomes Two and Four.

1. Boys and girls exercise their agency and understand their rights not to be exploited, affirmed by positive social norms, supportive families and communities.
2. Girls, boys and their households have access to safe, age-, gender-and disability-appropriate alternatives (economic and non-economic) to WFCL. This will be achieved through the following outputs and associated activities:
   - Support children to go to school.
   - Youth and households' financial, business and other skills are strengthened to enhance employment options.
   - Private sector actors engage in activities to reduce and prevent WFCL and create pathways to safe employment.
3. A stronger legal and policy environment supports the prevention and reduction of WFCL.
4. Private sector strengthens their value chain to reduce and prevent the worst forms of child labour. This will be achieved through the following outputs and associated activities:

- Private sector actors and business networks supported to identify and share best practice in preventing and reducing WFCL.
- Value chain analysed, traced and shared from the local level up to global consumers
- Deeper understanding and documentation of how the informal sector feeds into formal supply chains.
- Context specific interventions that improve the enabling environment for the private sector to prevent and reduce the WFCL tested.

This assessment not only contributes to outcomes Two and Four of the PACE strategy, but through trialling and testing various innovative techniques, it additionally informs the best approach to pursue those objectives going forward. In particular, this assessment tests the assumption that mapping supply and value chains up from local to global, rather than the more standard reverse practice, will lead to enhanced due diligence and reduce WFCL in the supply chain.

Beyond this, this 'bottom-up' supply chain map will help PACE and its partners design, pilot and eventually scale up innovative, evidence-paced solutions to WFCL in fragile contexts.

1.2 Objective and Scope of the Study

This assessment is focused on Ethiopia, which is a priority country for PACE: the Ethiopian 2015 National Child Labour Survey estimated that 51% of children aged 5 and 17 were engaged in economic activities, of which 54% was considered 'hazardous' work.

Despite some positive economic indicators – Ethiopia is one of Africa's fastest growing economies – 23.5% of the Ethiopian population lives below the poverty line. This high poverty rate is one of the main drivers of child labour, particularly in rural areas.

To provide insight into the challenges and solutions of WFCL in supply and value chains, sesame, a type of oilseed, was selected as particular interest, due to its importance to the Ethiopian economy.

The study was focused on six districts or *woredas* as they are known in Ethiopia, in the north west of the country and which are well known for their sesame and other oilseed production.

Three districts were selected from two different regions. From the Amhara region: Metema, Quara and West Armacho and from the Tigray region: Tsegede, Kafta Humera and Wolkait.

In addition, relevant regional and national government and non-government organisations were consulted and included in the study.

In these key regions, this assessment investigated the supply chain and:

- Identified key actors in the supply chains and their relationships with one another
- Mapped where and how children are involved at every stage of the chain
- Identified factors that might exacerbate the use of child labour
- Identified interactions that might challenge companies trying to prevent WFCL in the supply chain

It also:

- Identified and assessed possible alternative opportunities that could diversify income sources
- Identified paths to increased productivity and profit margins

Finally, an assessment on the policy environment was carried out, including on:

- Polices, legal rules and regulations, tenure systems, formal and informal custom barriers, formal and informal taxes and movement permits.
- Credit gaps, entrepreneurial support, social costs and constraints to the movement of goods and hiring practices were assessed

1.3 Limitations of the Study

The limitations of this study largely stem from the ongoing COVID-19 pandemic.

Firstly, in spite of the considerable effort made by the study teams to conduct large number of key informant interviews with value chain actors, especially large traders, exporters and processors and senior experts in regional and federal offices, the teams have been limited in carrying out face-to-face contact and interviews.

In addition, the teams faced shortages of the secondary data at regional and federal level offices due to the closing of several offices and the absence of responsible officials and experts.

The study was also unable to include a sufficient number of respondents at the tertiary market level (i.e. exporters and processors) as most of them were reluctant to give up their time and get into discussion.

The pandemic also made grassroots data collection very challenging. However, the necessary data – from, for example, producers, cooperatives and community level respondents – were collected with strict enforcement of the COVID-19 safety measures. Facemasks, social distancing and hand sanitiser were used by both participants and field workers.

Where in-person data collection proved too problematic, the study capitalised on efficient use of alternative sources and data collection tools, including conversations and interviews using telephone, email communication and other desk-based digital systems such as web sites and secondary data research and reports from a diverse range of sources.

Therefore, despite the limitations, the study successfully revealed the existing reality and functioning of sesame supply chains and value chains, with a specific focus on labour in general and child labour in particular.

2. Methodology and Approaches

2.1 Selection of the Study Areas

According to data taken from the Agricultural Transformation Agency (ATA, 2015), the top sesame producing *woredas* in Tigray region are: Kafta Humera, Welkait, Tsegede, Tsimbila, Thatay Adiabo. In the Amhara region the top-producing woredas are: Metema, Quara, Mirab Armacho, Jawi, Abergele, Bure, Debark, Bati, North Achefer, Basoliben.

In order to select the sample *woredas* from this list, agricultural clusters in each region were ranked according to their level of production, potential to expand sales and employment as well as the availability of commercial agriculture, high participation of small-scale agriculture, domestic and international market potential and contribution, labour dynamics, cross-border labour, availability of active cooperatives/union, and availability of support actors like research institutes, NGOs and private sectors.

Based on these criteria, the following six *woredas* were selected.

From Tigray

- Kafta Humera
- Tsegede
- Welkait

From Amahra

- Metema
- Quara
  West Armacho

In order to select villages, or *kebeles* as they are known in Ethiopia, a two stage sampling method was used. Following consultation with experts in each *woreda*, including staff at the local cooperative office, agriculture offices, trade offices and relevant financial institutions, each *kebel* was ranked by production, agricultural marketing and employment potential of their sesame, pulse and grain sub-sector.

2.2 Prioritisation and Selection of Potential Commodities

Amhara and Tigray regions are among the country's top oilseed producing areas. These regions also produce a large amount of pulses and grains. All of these groups of crops include a variety of types:

- **Oilseeds**: sesame seeds, nug/niger seeds, mustard seeds, pumpkin seeds, sunflower seeds, rape seeds, castor seeds and groundnuts
- **Pulses**: Faba beans, haricot beans, chickpeas, mung beans, lentils, dry peas and vetches
- **Grains/Cereals:** sorghums, millet, maize, wheat, teff and crops of different varieties

In-depth consultations at relevant offices at each *woreda* considered detailed agronomics, economics and the significance of each crop to decide which would be most suited to detailed analysis. It was concluded that sesame is the single most important commodity, with a high comparative and competitive advantage compared to other crops. The detailed data collection and analysis including supply and value chain mapping of sesame as a priority commodity is presented in the following sections of this report.

2.3 Study Design and Approach

Both quantitative and qualitative study approaches were employed. The former was used to analyse the empirical data. The qualitative approach was used to gather and analyse information from a wide range of sources including community groups, esteemed elders, religious leaders, members of the primary cooperatives and unions, women and youth representatives and children aged between 8 and 17 years old. This qualitative data was used to enrich the data obtained through quantitative study methods.

The following data collection and assessment techniques were used gathering for quantitative and qualitative data:

- Household surveys
- Focus group discussions (for both adults and children)
- Key informant interviews
- Observations
- Review of relevant documents

For the household survey, systematic random sampling was used to select 450 households were selected from the study site *kebeles* of the Amhara and Tigray regions. This included 372 male-headed households and 78 female-headed households. This is demonstrated in Table 1 below.

Table 1: Sampled *woredas*, *kebeles* and households by study *woredas* and region

Region	Study Woreda	Sampled Kebele	Sampled Households		
			Male HHs	Female HHs	Total
Amhara Region	**Metema**	Kokit	41	17	58
		Kumer Aftit	21	7	28
		Genda-Wuha	24	4	28
	Quara	Gelegu	18	4	22
		Dubaba	21	1	22
		Selferid	20	2	22
	W/Armacho	Abriha-Jira	12	3	15
		Girar-Wuha	12	3	15
		Terefework	9	6	15
	Sub-Total		**178**	**47**	**225**
Tigray Region	**Tsegede**	Zuria Dansha	33	3	36
		Adegaba	14	3	17
		Dejena	21	1	22
	K/Humera	Maydley	14	0	14
		K/Eyesus	15	1	16
		Maykadra	28	5	33
	Welkait	Adebay	17	8	25
		Bereket	29	7	36
		Musie	23	3	26
	Sub-Total		**194**	**31**	**225**
	Total		**372**	**78**	**450**

Source: Result of household survey (July, 2020)

Beyond these 450 households, 24 adult and six child focus groups were held. In total, 129 representative people from all groups of the community participated, of which 79% were participants of adult focus groups, with the rest participating in child focus groups. Of these, 58.14% were male and the remaining 41.86% were female participants.

In addition, 53 key informant interviews were conducted during the study period, which involved 61 participants (49 male and 12 female) of different backgrounds: experts, local market actors, cooperative and union members and leaders, banks, government officials, processors and exporters, pesticide dealers and traders, among others. Table 2 below demonstrates this data.

Furthermore, experts on labour markets were consulted, in order to get a bird's eye-view of labour market governance, composition and complexities in adult and child labour including WFCL.

Table 2: Number of FGDs and KIIs by study *woredas* and regions

Region	Sample Woreda	Sample Kebele	Adult FGD		Children FGD		Key Informant	
			No. FGDs	No. Participants	No. FGD	No. Participants	No. KIIs	No. Participants
Amhara	**Metema**	Kokit	1	4	1	4	10	11
		K/Aftit	1	4				
		Genda-Wuha	1	4				
	Quara	Gelegu	1	4	1	5	8	9
		Dubaba	1	5				
		Selferid	1	4				
	W/Armacho	Abriha-Jira	1	4	1	5	8	9
		Girar-Wuha	1	4				
		Terefework	1	4				
Tigray	**Tsegede**	Zuria Dansha	1	8	1	5	10	12
		Adegaba	1	8				
		Dejena	1	9				
	K/Humera	Maydley	1	7	1	4	8	9
		K/Eyesus	1	7				
		Maykadra	1	6				
	Welkait	Adebay	1	7	1	4	9	11
		Bereket	1	7				
		Musie	1	6				
		Total	**24**	**102**	**6**	**27**	**53**	**61**

Source: Result of household survey July, 2020

Relevant data were also collected from secondary sources including records, reports, key offices and institutions, government offices such as union and cooperative offices, microfinance institutions, trade offices, the Ministry for Women and Children Affairs, the Ministry for Labour and Social Affairs, Zone Plan Commission, and the Ministry of Agriculture. Furthermore, the Ethiopian Commodity Exchange (ECX) was consulted, along with non-governmental organisations with relevant expertise, such as the Sesame Business Network.

2.4 Data Analysis and Management

The quantitative data obtained through the household survey were entered into SPSS after consistency checking, editing and necessary coding was performed. For this purpose, experienced data entry clerks and data verifiers were employed, supervised by an experienced statistician.

The results were interpreted by region, *woredas*, households' sex, education, labour force, land size, access to services, and other relevant variables. The descriptive statistics such as mean, frequency/ratio, cross-tabs, bivariate relationship, correlation, t-statistics/significance test and range for analysing concentration of ratio (CR) and amount of the commodity calculated to indicate the association of variables as well as to identify the influencing factors for priority intervention. The S-C-P[1] approach used also for describing and presenting the concentration of market actors, characteristics of the market actors and margins.

This enables us to understand clearly the value chain actors and margins and to know the distribution of benefits among the different actors in each value chain. Moreover, analysis was made on the following issues: value chain actors' interactions, linkages, income and employment opportunities in the value chain; technology; knowledge and upgrading, governance and services.

The qualitative data collected using focus group discussion and key informant interview/in-depth interview was analysed using content analysis and triangulated with the quantitative data. The document reviewed and data analysed in specific thematic issues. Finally, all these were used for supplementing as well as triangulating findings from the quantitative survey. In general, comparative and descriptive analysis is used. In the analysis location, gender, disability, land size, technology, family size, child labour were all given emphasis.

[1] Market Structure, Conduct and Performance (SCP) analysis will also be assessed in detail as discussed here:
Value chain analysis includes the following activities and data associated with them:

- Identification of value chain actors and their characterisation in terms of type and extent of role(s) played (i.e. market structure)
- Market channel analyses done including the relative importance of the different actors, channels and mapping of the supply and demand sources. (i.e. market conduct)
- Rough estimation of marketing margins based on the dominant channel for each selected major commodities including the producers' share of consumer price (i.e. market performance)

3. Results and Discussions

3.1 Description of Survey Areas

The study was conducted in six *woredas* of the Amhara and Tigray regions in north west Ethiopia, which were selected based on their sesame production potential. The three *woredas* selected from the Amhara region – Metema, Quara and West Armacho – are all located West Gondar zone (a zone being a second level subdivision in Ethiopia, below regions and above *woredas*.) Those selected from the Tigray region – Kafta Humera, Tsegede and Welkait – are all located in the Western zone.

3.1.1 Geography, climate and population

West Gondar zone is one of the 14 administrative zones of Amhara regional state, and is located about 890 km from Addis Ababa and 309 km from the region's capital, Bahir Dar. Its average temperature ranges from 26 to 45 degrees Celsius, its average annual rainfall ranges from 700 to 900 mm and its elevation varies between 500 to 800 metres above sea level. The total land area of the zone is 1,571,836 hectares, of which 384,001 hectares are used for agricultural activities.

There are seven *woredas* in West Gondar zone, comprising 89 *kebeles*, of which 74 are rural and 15 urban.
The town of Genda-Wuha is also found in this zone. The total population of the zone is 430,444, of which 219,733 are male and 210,711 are female. Of the total population, 299,535 people (69.6%) live in rural areas and 130,909 (30.4%) are urban dwellers.

The study of the Tigray region was conducted in the Western zone, which is comprised of four *woredas*: Setit Humera, Kafta Humera, Welkait and Tsegede. These four *woredas* are in turn made up of 76 *kebeles,* of which 72 are rural. The only four urban *kebeles* in this zone are in Setit Humera *woreda*.

The Western zone is located 570 km from Mekelle, the capital of the region, and 991 kilometres from Addis Ababa. The precise location of the zone is 13°42′ to 14°28′ N, 36°23′ to 37°31′ E (Mekonnen et al., 2011). The Western zone is bordered by Sudan to the west, Eritrea to the north and Ethiopia's Amhara region to the north. It covers a total area of 1,433,531 hectares. Of that area, 50.06%, makes up Kafta Humera; 26.59% makes up Welkait; 22.53% and 0.82% is Setit Humera.

In the east it shares a border with three Tigray *woredas* not included in the Western zone. The zone's lowest lying area is Setit-Humera town, at 550 metres above sea level, while the highest altitude of the zone is the town of Ketema Nugus in the Tsegede *woreda*. This information is displayed on Figure 1 below. In addition, the zone covers a total area of 1,433,531 hectares, which accounts for 50.06%, 26.59%, 22.53%, and 0.82% Kafta Humera, Welkait, Tsegede and Setit Humera, respectively.

The total population of each of the *woredas* comprising Tigray's Western zone is as follows: in Kafta Humera, 141,068 (74,638 male and 66,430 female); in Tsegede 141,068 (74,638 male and 66,430 female); and in Welkait 173,064 (87,359 male and 85,705 female). This is according to the secondary data obtained from Tigray's Western zone planning commission,

The Western zone consists of three *agro-ecological zones* as designated by the Ministry of Agriculture -- lowland, midland, and highland -- in which lowland, referred to as *kola* locally, represents 75%; midland, or *weynadega* accounts for 15.7% and highland or *dega* accounts for 9.3% of the land

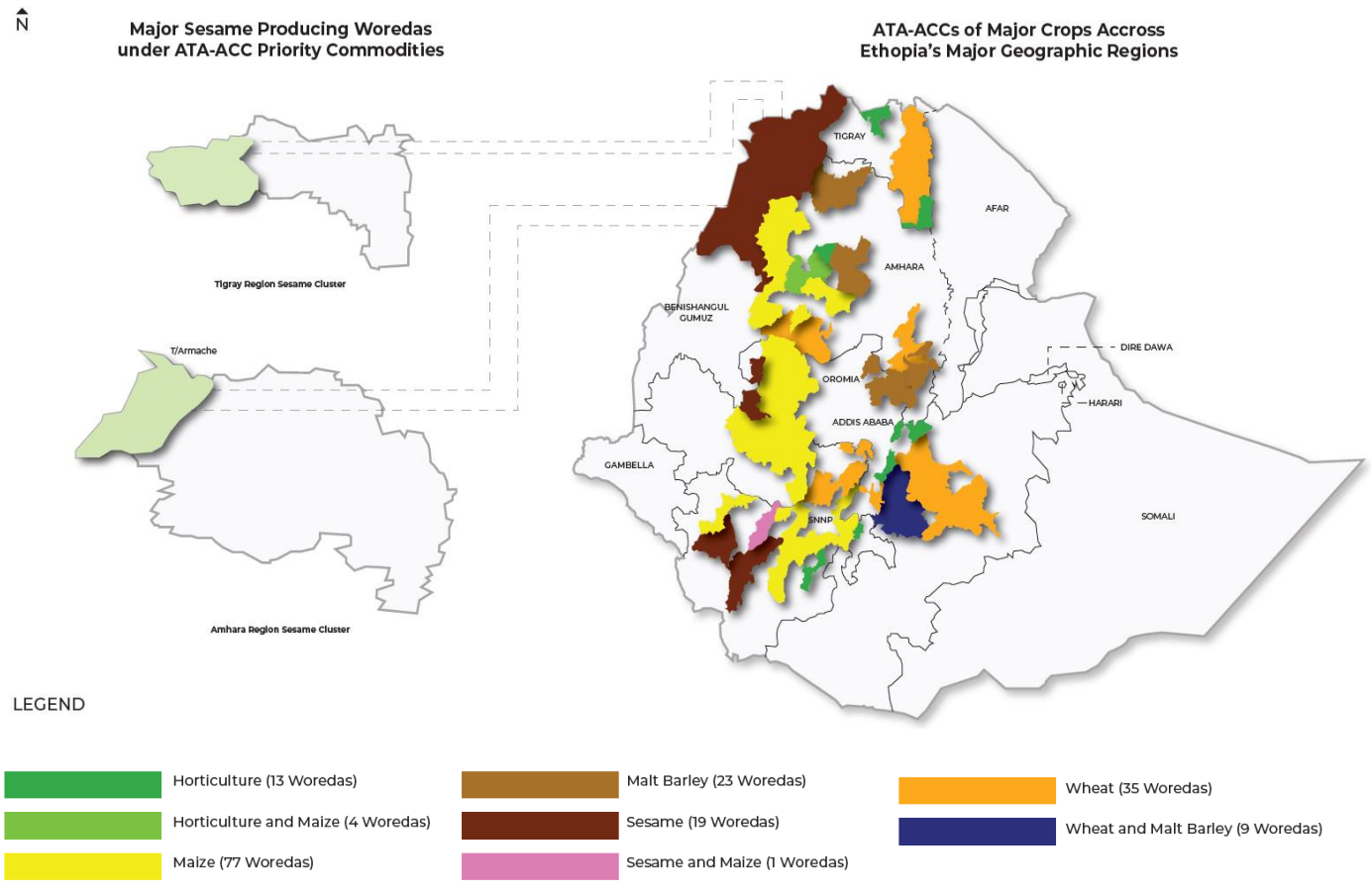
coverage of the zone. The annual rainfall of the Western zone in Tigray ranges between 600 and 1800 mm with a temperature range of between 45 and 12 degrees Celsius (ZOARD, 2015).

Tigray's Western zone total land cover comprises 41.23% arable land, 27.70% forestland (including of which 12.69% is area closures, which are closed by the government to prevent degradation); 12.69% is grazing lands; 11.41% is wastelands and 6.97% is uncultivated settlements.

Various farming methods and crops are therefore employed in the study area. The main crops cultivated in the lowland areas of the zone are sesame (accounting for 47.56%), cotton and sorghum, while teff, wheat, barley, niger seed, lentils, finger millet, field peas and faba beans are cultivated in both midland and highland areas of the zone. In an effort to increase sesame productivity, Ethiopia's Agricultural Transformation Agency broke the sesame growing areas of the study area into agricultural clusters, which are agricultural zones with a concentration of producers engaged in the same type of activity.

The total livestock population of the zone is 1,439,448. This includes 823,377 cattle; 223,612 sheep; 337,429 goats; 49,637 equines; 5,393 camels and 30,104 honeybee colonies – 21,329 of which are traditional hives and 8,775 are modern.

Figure 1: Map of the study areas (Amhara and Tigray regions) sesame clusters



Source: Adaptation from existing maps, July 2020

3.1.2 Economic status of the population

Mixed agriculture is the main economic activity of the population in the study areas. Besides crop production activities, the study areas are known for their livestock production, particularly the rearing of cattle, goats and sheep, equines and poultry birds. Dairy production is a particularly important livelihood source in Kafta Humera, Quara and West Armacho *woredas*. Livestock production is therefore the second most important source of livelihoods for the communities.

Animals are reared for their traction – ploughing, sewing, ridging and weeding – as well as for their milk, meat and honey. They are also an important means of transport as well a source of cash income and savings.

The livestock management practice of the households in the study areas is traditional, with crops and livestock maintained side by side as complementary activities. Most of the livestock reared are local breeds, managed with minimal care and attention. A few households in the target areas have improved breeding but it is generally poorly managed, especially with respect to feeding, health care, and breeding systems.

Relatively speaking, in the study areas, there are large tracts of land suitable for sesame production. Besides this, the study areas are rich enough for other economic activities such as petty trading, gum and incense production, extraction and selling of sand and stones. Despite this high potential for alternative livelihood opportunities, about 25% of the households are food insecure.

According to the focus group discussions, the coping mechanisms adopted by the rural poor in response to food insecurity and low level of income include: share cropping, use of family labour, practicing non-agricultural income generating activities, selling livestock, withdrawing children from school to allow them to be hired by another farmer and earn a wage, and reducing health and social expenditures. These are some of the risk mitigation measures that rural poor households adopt during periods of shock such as drought, disease and conflict.

3.1.3 Economic and social infrastructures

According to the data obtained from the agricultural development and cooperative promotion offices of each of the study *woredas*, the following basic infrastructural developments were available when the survey was conducted in July 2020.

Table 3: Type and number of development service providers and farmers' organisations by study *woreda*

Descriptions	**Number of Agri. Dev. Services, PCs and Unions by Woreda**						
	Metema	**Quara**	**W/ Armacho**	**Tsegede**	**K/ Humera**	**Wolkait**	**Total**
FTCs	16	14	2	20	19	28	94
Development Agents (DAs)	66	71	39	85	76	145	306
Primary Cooperatives (PC)	19	25	10	20	19	28	76
Unions	1	1	1	1	2	1	7

Source: Offices of Metema and Humera cooperative unions, July 2020.

The main agricultural inputs used are fertilisers, herbicides, and pesticides. Cooperative unions often supply pesticides. According to the focus group discussion the service provided by the cooperative unions is very poor and prices are high compared to private suppliers. Therefore, farmers usually buy from the private sector. However, according to the key informant interviews conducted with relevant

experts in the study *woredas*, this practice has exposed many farmers to fake products imported illegally from Sudan. The informants say this is the main reason why the price is lower than that supplied by the cooperative unions.

Other key infrastructure assessed were social institutions and facilities such as hospitals, health centres and health posts in the study *woredas*. While such facilities did exist in the study areas, they were not adequate in terms of availability and accessibility. There were shortages of supplies of medicine, vaccines, health tools, equipment, laboratories. Table 4 below shows the data collected on health institutions.

Table 4: Type and number of existing health institutions by study *woredas*

Type of Health Institutions	**Number of Health Institutions by Study Woreda**						
	Metema	Quara	W/Armacho	Tsegede	K/Humera	Wolkait	Total
Hospital	1	1	1	1	1	1	6
Health stations	5	6	2	9	15	17	54
Health Posts	25	28	11	-	-	=	64
Total	**31**	**35**	**14**	**10**	**16**	**18**	**124**

Source: Health departments or offices of the study woredas; (2018/19)
Note: As reported by *woreda* health offices, health posts developed to health stations in Tigray region.

Moreover, the existing education facilities are not sufficient to provide quality education. In Metema there are 96 schools, in Quara there are 86, in West Armacho there are 18, Kafta Humera has 35, while in Welkait there are 85.

Another important component of the infrastructure studied was water supply. The population mostly gets its water from hand-dug wells and rural potable (drinkable) water supply. For instance, in Metema *woreda*, there are 840 small water facilities of which 551 are rural water supply and 263 are hand-dug wells. The other 26 are shared pipe water. In Quara *woreda*, of 454 water facilities, 443 are hand-dug wells.

3.1.4 Socio-political situation

The main ethnic groups in the study areas, are: Amhara, Tigray, Kemant, Gumuz, Felata, and Agaw. Orthodox Christianity has the largest number of followers in the areas, followed by Islam and other types of Christianity, specifically Protestantism, Catholicism. In addition, there are some with traditional religious beliefs.

Due to ethnic-based politics, the two dominant ethnic groups, the Amhara and the Tigray, occupy the higher political offices in the regions. The minority inclusion in the higher political offices, as well as representation at different levels of local government, is very insignificant. At family level, the patriarchal system still persists, though there are numerous incentives provided by the government to raise female participation and to bring women to the forefront of development activities.

3.2 Household Characteristics and Livelihood Sources

3.2.1 Socio-demographic characteristics of sample households

The sample respondents were grouped into four categories: 18-30; 31-40; 41-50; and older than 50. Combining the data from both the Amhara and Tigray study regions, the largest group was the 41-50 age group, making up 33.6% of the sample population.

When the data is divided into active age groups, 60% of respondents in Amhara and 58% in Tigray regions are categorised as being in the active age group of 31 – 50 years. The other remaining active age group, the 18 to 30 age group, in both regions consisted of 9.6%. There was 31.6% of the population in the over 50 age group in both regions combined, or 26% and 37% in Amhara and Tigray respectively.

With regards to marital status of the respondents, on average 94.7%, and 86.7% of sample respondents were married in the study *woredas* of Amhara and Tigray regions respectively, while the average divorce rate of the two regions was about 4.2%. This information is laid out in Table 5 below.

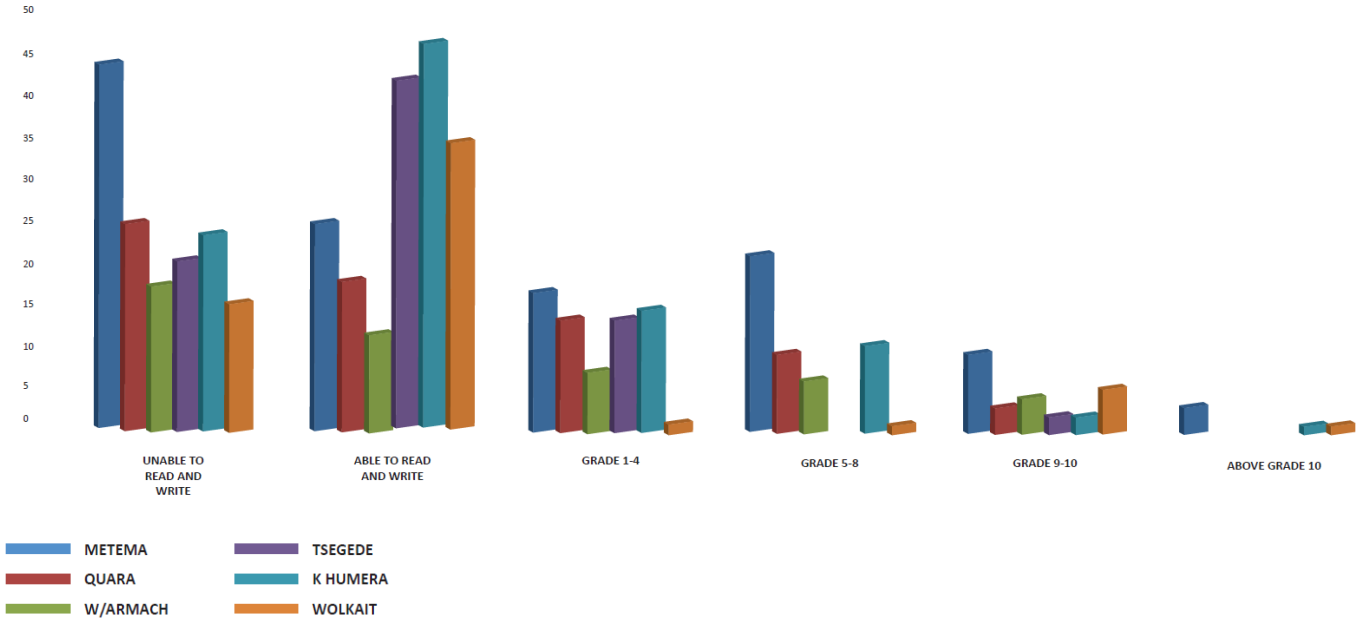
'able 5: Socio-demographic characteristics of the respondents by study *woreda*

Socio-Demo Variables	Description	Study Woreda by Region										Total of the 2 Regions	
		Amhara					Tigray						
		Metema	Quara	W/ Armach	SubTotal	%	Tsegede	K / Humera	Wolkait	Sub-Total	%	Total	%
Age-group	18-30 years	16	7	8	31	14%	6	4	2	12	5%	43	9.6%
	31- 40 years	25	16	11	52	23%	16	37	9	62	28%	**114**	**25.3%**
	41 - 50 years	39	33	12	84	37%	25	29	13	67	30%	**151**	**33.6%**
	> 50 years	34	10	14	58	26%	28	24	32	84	37%	**142**	**31.6%**
Sub-Total		**114**	**66**	**45**	**225**	**100%**	**75**	**94**	**56**	**225**	**100%**	**450**	**100%**
Marital Status	Married	106	62	45	213	94.7%	71	78	46	195	86.7%	**408**	**90.7%**
	Divorced	6	3	0	9	4.0%	1	7	2	10	4.4%	**19**	**4.2%**
	Widowed	0	0	0	0	0.0%	2	6	4	12	5.3%	**12**	**2.7%**
	Separated	2	0	0	2	0.9%	0	3	4	7	3.1%	**9**	**2.0%**
	Never married	0	1	0	1	0.4%	1	0	0	1	0.4%	**2**	**0.4%**
Sub-Total		**114**	**66**	**45**	**225**	**100%**	**75**	**94**	**56**	**225**	**100%**	**450**	**100%**
Education	Unable to read & write	42	24	17	83	36.9%	20	23	15	58	25.8%	**141**	**31.3%**
	Able to read & write	24	17	11	52	23.1%	40	44	33	117	52.0%	**169**	**37.6%**
	Grade 1-4	16	13	7	36	16.0%	13	14	1	28	12.4%	**64**	**14.2%**
	Grade 5-8	20	9	6	35	15.6%	0	10	1	11	4.9%	**46**	**10.2%**
	Grade 9-10	9	3	4	16	7.1%	2	2	5	9	4.0%	**25**	**5.6%**
	Above grade 10	3	0	0	3	1.3%	0	1	1	2	0.9%	**5**	**1.1%**
Sub-Total		**114**	**66**	**45**	**225**	**100%**	**75**	**94**	**56**	**225**	**100%**	**450**	**100%**

Source: Household survey results, July, 2020

The survey also reveals the existing status of educational levels of the sample households, indicating about 37% and 26% of the respondents in Amhara and Tigray regions respectively were unable to read and write. Those proportion of respondents who could read and write came to 37.6% on average in both regions, but there was significant difference between the two regions, with 23% in Amhara and 52% in Tigray. Figure 2 below demonstrates this.

Figure 2: Frequency distribution of sample respondents' education level by study *woreda*



Source: Result of household survey of the study Woredas, July 2020.

3.2.2 Existing livelihood sources and economic activities

The results of the assessment in the study areas show that mixed agriculture is the main source of livelihood for the majority of the population. Specifically, 84.7% of respondents in all the study *woredas* of both Amhara and Tigray regions depend on crop and livestock (mixed) production. Only 7.1%, 5.1% and 3.1% of the households in the study areas depend solely on one type of activity, be it crop production, livestock production or other non-farm activities respectively. This is demonstrated in Table 6 below.

Table 6: Major occupations and proportion of sample respondents by study *woredas*

Economic Occupation	Amhara					Tigray					Total	
	Quara	Armacho	Metema	S/Total		Humera	Tsegede	Wolkait	S/Total			
	%	%	%	No	%	%	%	%	No	%	No	%
Mixed Farming	85%	77%	77.8%	183	81.3%	86%	90.5%	87.5%	198	88%	381	**84.7%**
Only Crop Production	7.0%	11%	11.1%	20	8.9%	6%	4.1%	5.4%	12	5%	32	**7.1%**
Livestock Prod only	5.3%	8%	6.7%	14	6.2%	5%	2.7%	3.6%	9	4%	23	**5.1%**
Non-farm Activities	2.6%	5%	4.4%	8	3.6%	2%	2.7%	3.6%	6	3%	14	**3.1%**
Total	**100%**	**100%**	**100%**	**225**	**100%**	**100%**	**100%**	**100%**	**225**	**100%**	**450**	**100%**

Source: Results of household survey, July 2020.

As indicted in Table 7 below, 43.12% of smallholder farming households in Amhara region possessed five or fewer hectares per household. Meanwhile, in the Tigray region the majority of smallholder farms, about 89% of the households, possessed five or fewer hectares. About 38% of the smallholding households in Amhara region possess a land area of five to 10 hectares and more than 10, and 19% possess more than 10. In the Tigray region, the proportion of farmers who own between five and 10 hectares of land was 7%, while 4% had more than 10 hectares. As in the Amhara region, the largest proportion of farmers in the Tigray region had fewer than five hectares. Combining the data from two regions, 66.2% possess five or fewer hectares, 22.5% have between five and 10 hectares and 11% have more than 10 hectares.

Table 7: Landholding size per HH of the sample respondents by study *woreda* (ha) (Year 2018/19)

Woredas	**No of Smallholder Famers with Land holding ≤ 5ha ranges**					**Proportion ≤ 5ha**		**No HHs 5-10ha**	**No HHs >10ha**	**No Total HHs**
	< 1 ha	1- 2ha	2 - 3 ha	3- 4 ha	4 - 5 ha	**No**	%	No & %	No & %	
Metema	7.0	19.0	8.0	4.0	12.0	50	44.2%	43	20	113
Quara	5.0	11.0	2.0	4.0	6.0	28	47.5%	21	10	59
W/Armacho	1.0	2.0	2.0	3.0	7.0	15	34.1%	20	9	44
sub total	**13**	**32**	**12**	**11**	**25**	93	43.1%	**83**	**40**	**216**
%	**6%**	**15%**	**6%**	**5%**	**12%**	43.1		**38%**	**19%**	**100%**
Tsegede	10.0	31.0	10.0	2.0	18.0	71	94.7%	3	1	75
K/ Humera	6.0	20.0	16.0	19.0	10.0	71	80.7%	11	6	88
Wolkait	4.0	2.0	7.0	4.0	36.0	53	94.6%	2	1	56
sub total	20	53	33	25	64	195	89.0%	16	8	219
%	9%	24%	15%	11%	29%	89%	89.0%	7%	4%	100%
Total No	**33**	**85**	**45**	**36**	**89**	**288**	**66.2%**	**99**	**48**	**435**
%	**7.6%**	**19.5 %**	**10.3%**	**8.3%**	**20.5%**	**66.2 %**	**66.2%**	**22.8%**	**11.0%**	**100.0%**

Source: Result of household survey, July, 2020

According to the data from agriculture offices of each *woreda*, sesame, sorghum and cotton are the main crops grown in the survey areas. Combining all the data from across each *woreda* and region, sesame took up the largest proportion of cultivated land, with 487,267 hectares. Sorghum covered 277,986 hectares of land. Other important crops grown include maize, cotton, teff and finger millet. The productivity per hectare of each crop can be seen in Table 8 below in the column showing average yield in quarters per hectare. Sesame had the lowest productivity of 4.6 quintals per hectare. Maize and sorghum have the highest productivity per unit area with 25 and 22 quintals per hectare respectively.

Table 8: Major crop production (Qt.) and productivity (Qt./ha) by study *woreda* (Year 2018/19)

Type of Crop	Metema		Quara		W/Armacho		Tsegede		K/Humera		Wolkait		Total		Av. Yield qt/ha
	Land (ha)	Prod (Qt.)	Land (ha)	Prod (Qt.)	Land (ha)	Prod (Qt.)	Land (ha)	Prod (Qt.)	Land (ha)	Prod (Qt.)	Land (ha)	Prod (Qt.)	Area	Prodn	
Sesame	62,908	201,307	41,964	168,548	97,653	274,534	35,140	210,840	233,328	1,285,004	19,409	210,840	487,267	2,259,770	4.6
Sorghum	22,683	308,029	38,264	612,651	22,824	146,791	39,124	978,100	135,000	3,395,416	20,091	673,263	277,986	6,114,250	22.0
Cotton	14,032	138,853	3,144	94,320	292	2,938	1,700.00	30,600	13,810	267,150	2,350	29,615	35,328	563,476	15.9
Maize	3,824	58,856	8,180	181,961	437	7,990	1,050.00	45,000	1,250	34,000	4,443	153,111	19,184	480,918	25.1
Teff	1,750	2,611	2,611	26,110	54	245	1,800.00	27,000	550	8,500	4,799	65,963	11,564	130,429	11.3
F/Millet	750	8,997	3,592	53,880	511	3,480	14,154	311,251	520	9,000	4,600	131,188	24,127	517,796	21.5

Source: Production data from the Agriculture offices of Study Woredas; (July, 2020)

Sesame producers of the study areas are predominantly small-scale farmers, the majority of which practice traditional ways of farming, including monocropping, where a single crop is grown in a particular field year on year, without rotating it with other types crops, thus degrading the soil. They used broadcasting for planting, a method of seeding by hand, and manual weeding, harvesting, drying, and threshing.

Some sesame farmers, especially large- and medium-scale used agricultural mechanisation that reduced the need for labour. These farms use tractors, combine harvesters, improved seeds, fertilisers, and pesticides on their farm.

As described in the following table, about 65% and 44% of household respondents in the Tigray region were using tractors and oxen respectively to prepare their land for sesame production. In contrast, in the same year of production in the Amhara region, only about 32% and 64% of household survey respondents were using tractors and oxen to prepare their land for sesame production. That means, there were nearly 50% fewer tractor users in the Amhara region compared with the Tigray region, showing that more farm mechanisation is practiced in Tigray region.

On the other hand, only about 10 % and 4% of respondents were using combine harvesters for sesame crop harvesting in Tigray and Amhara regions respectively, implying near-exclusive reliance on human labour for sesame harvesting. This information, depicted in Table 9 below, shows that 90% and 96% of the respondents in Amhara and Tigray regions respectively are dependent on seasonal migrant labour force. These seasonal workers need to have their skills boosted.

Table 9: Sesame agronomic and harvesting practices and mechanisation by the study areas (2018/19)

Description of Practices and tools		Number of HHs practiced by Study Woreda and Region										Total of 2 regions	
		Amhara					Tigray						
		Metema	Quara	W/ Armacho	Sub Total	% total	Tsegede	K/ Humera	Wolkait	Sub Total	%	Total	%
Sesame Farmland Preparation	Oxen plough	85	47	11	143	64	19	4	26	49	23	192	44
	Tractor	27	19	26	72	32	37	75	27	139	65	211	48
	Hand digging	0	0	0	0	0	18	8	0	26	12	26	6
	Oxen and tractor	0	0	8	8	4	0	0	1	1	0	9	2
	Sub-Total	**112**	**66**	**45**	**223**	**100**	**74**	**87**	**54**	**215**	**100**	**438**	**100**
Sesame harvesting	Labor	107	60	45	213	96	73	69	52	194	90	406	93
	Combine harvester	6	6	0	12	4	1	16	1	18	10	30	4
	Sub-Total	**113**	**66**	**45**	**225**	**100**	**74**	**85**	**53**	**212**	**100**	**437**	**100**

Source: Result of household survey of the study woredas, July 2020.

The most significant problems associated with sesame production that respondents reported include: ever-increasing prices of agricultural inputs such as fertilisers and improved seeds; a lack of appropriate and on-time information on prices and quality standards; and fluctuations of prices. These problems result in uncertainty and difficulty in calculating the payoff from sesame production, and producers are therefore reluctant to take the risk of investing in sesame production.

As a result, the livelihood status and income level of small-scale farmers of the study areas is at subsistence level. The average income of the majority (56.9%) of households is in the income range of 1000-15,000 ETB, which is below the national poverty line [2]. On the other hand, about 29% of the households in both study regions earned an annual income greater than 50,000 ETB per household. In terms of regional distribution, the number represents 16% of households in the Amhara region and 13% of households in the Tigray region. According to this data, farmers could possibly earn the largest proportion of their income from sesame and also bring their households over the poverty line.

[2] It is claimed that agriculture is already making a major contribution towards this end: the proportion of population living below the poverty line dropped from 39% in 2006/2007 to 22% in 2016/2017, and over this period, food security and incomes of nearly 12 million smallholder families have improved (ATA, 2019). The extreme poverty gap measured as the difference between farm household income per household unit and the extreme poverty line of USD 1.90 equivalent per person per day (ETB 55).

Table 10: Average Annual Income per HH Respondents from Sesame Production by Income Categories(ETB) in the Survey Woredas in the Production year 2018/19

Descriptions	Study Woreda by Region										Survey Areas	
	Amhara					Tigray						
	Metema	Quara	WArmach	Sub-Total	% HHs	Tsegede	KHumera	Wolkait	Sub-Total	% HHs	Total	% of HHs
<1000 ETB	4	0	5	**9**	**4.0%**	4	14	6	**24**	**10.7%**	**33**	**7.3%**
1001-5000	1	2	1	**4**	**1.8%**	2	22	15	**39**	**17.3%**	**43**	**9.6%**
5001-10,000	11	14	3	**28**	**12.4%**	7	31	4	**42**	**18.7%**	**70**	**15.6%**
10,001-15,000	39	30	15	**84**	**37.3%**	25	19	2	**46**	**20.4%**	**110**	**24.4%**
15,001-20,000	2	3	1	**6**	**2.7%**	4	1	0	**5**	**2.2%**	**11**	**2.4%**
20,001-25,000	1	4	1	**6**	**2.7%**	5	2	2	**9**	**4.0%**	**15**	**3.3%**
25,001-30,000	2	0	1	**3**	**1.3%**	3	0	7	**10**	**4.4%**	**13**	**2.9%**
30,001-35,000	3	5	3	**11**	**4.9%**	6	0	7	**13**	**5.8%**	**24**	**5.3%**
> 50,000.00	40	20	14	**74**	**32.9%**	12	13	12	**57**	**25.3%**	**131**	**29.1%**
Total	**103**	**78**	**44**	**225**	**100.0 %**	**68**	**102**	**55**	**225**	**100.0 %**	**450**	**100.0 %**

Descriptions	Study Woreda by Region										Survey Areas	
	Amhara					Tigray						
	Metema	Quara	WArmach	Sub-Total	% HHs	Tsegede	KHumera	Wolkait	Sub-Total	% HHs	Total	% of HHs
<1000 ETB	4	0	5	**9**	**4.0%**	4	14	6	**24**	**10.7%**	**33**	**7.3%**
1001-5000 ETB	1	2	1	**4**	**1.8%**	2	22	15	**39**	**17.3%**	**43**	**9.6%**
5001-10,000 ETB	11	14	3	**28**	**12.4%**	7	31	4	**42**	**18.7%**	**70**	**15.6%**
10,001-15,000 ETB	39	30	15	**84**	**37.3%**	25	19	2	**46**	**20.4%**	**110**	**24.4%**
15,001-20,000 ETB	2	3	1	**6**	**2.7%**	4	1	0	**5**	**2.2%**	**11**	**2.4%**
20,001-25,000 ETB	1	4	1	**6**	**2.7%**	5	2	2	**9**	**4.0%**	**15**	**3.3%**
25,001-30,000 ETB	2	0	1	**3**	**1.3%**	3	0	7	**10**	**4.4%**	**13**	**2.9%**
30,001-35,000 ETB	3	5	3	**11**	**4.9%**	6	0	7	**13**	**5.8%**	**24**	**5.3%**
> 50,000.00 ETB	40	20	14	**74**	**32.9%**	12	13	12	**57**	**25.3%**	**131**	**29.1%**
Total	**103**	**78**	**44**	**225**	**100.0 %**	**68**	**102**	**55**	**225**	**100.0 %**	**450**	**100.0 %**

Source: Results of household survey, July, 2020

The majority of the focus group participants in all sample *kebeles* of the study *woredas* reported that they use traditional sesame seeds with only a few of them using improved sesame seeds purchased from private dealers. Most use recycled seeds that they have saved from their previous production cycle. The main reason for this is the belief that local sesame varieties are better adapted to the local conditions. Nonetheless, their sesame yields have continuously decreased in recent years. The research centre in Metema *woreda* explained that replanting the same sesame can only achieve good yields for two consecutive years, after which farmers should plant a new variety, or else rotate with other crops in order to prevent a deterioration in yield. Moreover, farmers rarely use fertilisers for sesame production. Where they do, the main source of chemical fertilisers for local farmers was primary cooperatives and private traders.

As shown in Table 11 below, shortage of labour (84%), high input prices (83%), the use of child labour (68%), and shortage of input supply (76%) were identified as the most important sesame production challenges in the study areas, ranked as 'Strong and Highest' in both regions. The next most critical problems indicated by the respondents include weeding problems (75%), lack of improved seeds (73%), and poor soil fertility (67%).

Table 11: Distribution of FGD participants' responses on sesame production challenges

Descriptions	Responses on Sesame Production Challenges (in Percent (%))		
	Strong and Highest	Medium	Less Important
Lack of improved seeds	73%	27%	-
Shortage of input supply	76%	14%	10%
High price of inputs	83%	16.7%	-
Shortage of labour power	84%	9%	7%
The use of child labour	68%	18.40%	26.60%
Shortage of land preparation means	8%	41.70%	50.0%
Drought/inadequacy of rain	8%	41.70%	50.0%
Lack of information on quality standard	8%	75.0%	16.70%
Pest infestation	67%	8.40%	25.0%
Wilting after germination	25%	75.0%	-
Problem of termite	58%	8.30%	33.30%
Poor soil fertility	67%	16.70%	16.70%
Problem of weeds	75%	8.30%	16.70%
Hailstorm	50%	16.70%	33.30%
Others such as shortage of credit services	72%	28.0%	-

Source: Result of household survey, July, 2020.

3.2.3 Access to basic productive services (finance, markets, skills etc.)

From small-scale to large farms in the study areas, sesame production has become a major source of income for farmers in the study regions. However, various challenges and constraints impact on production and productivity and the benefit accrued is reported to be low. Lack of inputs, appropriate technology, and financial support on production and agricultural marketing, infrastructure, transport, warehousing, marketing facilities, and other services were all mentioned during the survey. The agriculture advisory services provided to farmers -- technical training and coaching, organisation, market information -- are poor and below the required levels. Generally, the agricultural inputs that farmers purchase are not accompanied by advisory services, with the exception of a few private pesticide dealers who give some limited advice on how to apply the chemicals.

Access and use of saving and credit cooperatives services

Ensuring that farmers have adequate access to financial resources is a key principle of successful rural development strategies. Producers who have access to well-designed saving and credit services, along with insurance services, are better able to finance agricultural inputs such as chemical fertlisers, improved seeds, agro-chemicals, productive labourers and production tools and equipment. In addition, this makes them better able to afford to invest in riskier but more profitable enterprises and asset portfolios, reaching markets more effectively and adopting more efficient strategies.

In the study areas, the government-affiliated Dedebit Credit and Saving Microfinance Institution (DECSI) in Tigray and the Amhara Saving and Credit Institution (ASCI) in Amhara were found to be the only providers of finance and loans. According to interviewed farmers and other stakeholders, loan provisions are too small, ranging from 5,000 to 15,000 ETB, depending on the collateral and

repayment history of farmers. The interest rates to individual farmers are between 18% and 19%, and for group lending between 13% and 18% for a three-year period, requiring one third of the loan to be paid at the end of each year. According to the focus group participants, to pay for all the required inputs, as well as land preparation and harvesting and high labour expenses, the loan size needs to triple in order to be effective.

Commercial banks also offer loans, but only against collateral, which farmers usually do not own, except livestock and land, and these are not considered by the banks to qualify. For this reason, the commercial banks in the study *woredas* do not provide loans to individual farmers.

The gap between the supply of financial services and demand from farmers is therefore considerable. There is still plenty of room to increase service provision by both the public and private sector.

According to the focus group discussions with community representatives in the sample *kebeles*, lack of cash and/or credit was mentioned as one of the most critical issues that hold back agricultural production and productivity. Discussion participants confirmed that sesame production and productivity has decreased from year to year due to lack of access to finance/or credit services.

For this assessment, interviews were also conducted with the two major rural savings and credit services in the Amhara and Tigray regions, ASCI and DECSI.

ACSI has two types of credit service products: one is a loan provided for running various income generating activities such as petty trading, fattening of cattle and goats, and the other type of loan is provided for purchasing agricultural inputs such as fertilisers, agrochemicals, improved seeds, oxen and/or tractor rent. Over all, the interviews confirmed that the services offered were found to be highly limited and inappropriate to smallholder farmers due to their limited accessibility, high interest rate, and inadequate loan schemes.

Occasionally filling the gap left by microfinance institutions are cooperatives, unions, and large farmers (acting as investors). Scaling up this type of provision is a possible entry point for intervention. With increasing demand and rising prices for sesame, it is likely that financial service provision will also arise through NGOs and/or the private sector, all of which will require effective coordination.

Access to market information

Market information is an important weapon for producers and traders to take production and agricultural marketing decisions. Our own systematic analysis, alongside reports from sampled respondents in the study areas indicated there was no regular and updated source of market information in the local communities. Small-scale producers did not have any regular source of market information; instead they mostly obtained this from neighbours and buyers, which can be unreliable. In the case of large-scale producers, market information is acquired through commission agents.

In almost every two *kebeles* in each *woreda* there is one sesame primary market centre, referred to locally as a spot market, where the selling and buying of sesame is performed. Any transaction beyond the official markets is considered unlawful.

Accordingly, there are total of 88 primary sesame markets in the regions (46 in Amhara and 42 in Tigray) In both the Amhara and Tigray regions, small-scale producers sell their produce to local collectors/assemblers and primary cooperatives (members of cooperatives must sell their produce to the cooperative). The Woreda Trade, Industry and Transport branch offices issue the price of sesame regularly based on the price information obtained from ECX. However, the price offered at a

primary market can vary from the set price as it may be influenced by brokers or commissioning agents employed by local traders.

Apart from this, local traders, cooperatives and other market players, as well as farmers, can access price information through Information Communication Technology (ICT). Everyday usage of ICT, digital technology is becoming widespread and its accessibility and availability is increasing, especially in *woreda* capitals, and among local traders, cooperatives, and most of the better-off farmers in rural areas. This includes the use of computer, email and the internet at all *woreda* level offices, unions offices, some cooperatives and traders. In particular, mobile phone usage by farmers is becoming more regular, to communicate with others, and to disseminate the sesame price information. For instance, farmers and development agents can send SMS to 934 and text or call at 929 on a cell phone to get information on output and input prices. Likewise, cooperative promotion and agriculture offices also disseminate price information for their member farmers. See Table 12 below for details of market availability.

Table 12: Primary market centre primary coops by study *woredas*

Region	Study Woreda	No. of Kebeles	No. of Spot Mkt.	Presence of ECX Centre	Unions /Federation	Primary Cooperative
Amhara	Gonder			Gonder ECX	Tsehay Union	
	Metema	28	13	Gendawuha ECX	Metema Union	Kokit, K/Afit, Genda-Wuha
	Quara	28	17			Angereb, Girar wuha, Terefework
	W/Armacho	14	16	Abrajira ECX	Selam union	Gelegu, Dubaba, Selferdi
Sub-Total		70	46		3	
Tigray	K/ Humera	19	17	Humera ECX	Setit-Humera	Meibale MPC; Maycadra PC Fana Limat
	Tsegede	20	13	Dansha ECX	Dansha Aurora	Handnet PC, Fre- qalasi PC Maydelay PC
	Welkait	28	12		Lemlem Wolkite	Tekeze PC, Waldeba PC Negacheree PC
Sub-Total		67	42			
Total		**137**	**88**	**5**	**6**	**18**

Source: Woreda agriculture offices of each zone, July 2020

3.3 Sesame Supply Chain and Value Chain Mapping and Analysis

3.3.1 Production potential and resource base of study areas

Sesame is one of the main commercial crops of Ethiopia and it also plays a vital role in the livelihood of many people in the country, particularly in the Tigray and Amhara regions. These two regions have nine of the country's 10 top sesame producing *woredas.* These 10 *woredas* are spilt across two Agricultural Commercialization Clusters (ACCs). (ACC's were launched by the Ethiopian government in 2015. The idea is that in each cluster smallholder farmers would put their land together to farm as one, and would be supported to maximise production and productivity. See key concepts page for further explanation.)

Tigray has five of the top 10 producers, while Amhara has four. The region of Oromia has the remaining top producing *woreda* (IFPRI, 2015, CSA's AgSS, 2015, *woreda*-level average production rankings 2009/10 – 2012/13). The study was conducted in the country's main sesame production areas that are located in the semi-arid lowlands of north and north west Ethiopia, in six selected six *woredas* -- Humera, Tsegede and Welkait in Tigray and Metema, Quara and West Armacho in Amhara.

These two ACCs contributed between 70% and 80% of the national sesame production, according to various secondary sources. The size of the area cultivating sesame in the two regions was 536,063 hectares, as shown in Table 13 below. This made up 78% of the nation's total area of sesame production in 2019/20 (EPoSPEA, 2019, Ibid, 2019). Another source shows that Tigray and Amhara produced 40% and 37% of the country's sesame respectively. This is demonstrated in Table 13 below. (EPoSPEA, 2019, Ibid, 2019).

Although the regions remain the most important areas for sesame production in the country, production and productivity has been declining in recent years. Between 2010 and 2018, the area used for sesame production decreased from 384,683 to 294,819 hectares (a 23% decline), and production decreased from 327,740.9 to 201,664.6 tons (a 38% decline) and yield declined by 19.83%, from 8.25 to 6.83 quintals per hectare (CSA, 2019; FAOSTAT, 2019). Moreover, another source indicated the average yield for the year 2019/20 was 4.7 quintals per hectare, meaning sesame productivity per unit was further deteriorating.

Table 13: Land covered by sesame and share of production by region, 2016/17 and 2019/20

Regions	2016/17 Production Year		2019/20 Production Year					Average % of Production
			Area of Production		Production in Volume		Yield	
	Production in Tons	%	(ha)	% Area	(tons)	% Share of country	(Qts)	2016/17 & 2019/20
Tigray Region	104,155	39%	315,760	46%	129,493	40%	4.1	39.5%
Amhara Region	121,415	45%	220,303	32%	92,061	28%	4.2	36.5%
Oromia Region	24,284	9%	54,238	8%	17,825	5%	3.3	7.0%
Ben/Gumuz	20,146	7%	68,624	10%	62,604	19	9.1	13.0%
SNNP Region	No data	No data	27,241	4%	20,000	6%	7.3	6.0%
Total	**270,000**	**100**	**686,166**	**100%**	**321,983**	**100%**	**4.7**	**100%**

Source: Computed from EPoSPEA, 2019, *Ibid, 2019 data*

Note: The high yield indicated in the Ben/Gumuz region might be explained by it being an ideal production year where there was optimum rainfall, with minimum disease/pest damage and good agronomic practices.

According to focus group discussions with producers, as well as key informant interviews with pertinent experts in both regions, the study areas have abundant arable land resources, different soil types, and, with diverse agro-ecology, relatively adequate rain, and labour force they are suitable for the expansion of sesame production.

However, these sources stressed that this potential has not yet been effectively tapped due to various production-related problems. These problems include a shortage of improved seed varieties, poor extension and agricultural input supply systems, poor agronomic practices, pests and disease, drought, poor post-harvest handling, weak farmer organisations, poor market information systems and little research support with advice on how to increase yields, and erratic rainfall.

Information from the agriculture development offices of each of the survey *woredas*, combined with the results of the focus groups discussions indicated that the majority of households are engaged in the production of sesame.

Of these, most smallholder farmers rely on traditional farming practices. This means they used mono-cropping, which means they do not rotate crops or leave fields to lie fallow. They used broadcasting of seed for planting (a method of planting by hand) and labour-intensive weeding, harvesting, drying, and threshing. They also rely on old and largely manual tools.

Some medium- and large-scale sesame farmers practice mechanisation right the way from land preparation to harvesting, including using a row planting system that reduced the extensive use of labour. These farmers also applied improved seed, fertiliser and pesticides on their farm.

All type of farmers – small- and large-scale – produced sesame for only commercial purposes.

Most of the smallholders supply their produce to nearby primary markets, while smallholder union members deliver to the primary cooperatives. The medium and big farmers with more than 10 hectares of land and more than 50 quintals deliver directly to big traders and exporters at the ECX market.

Several factors are mentioned by survey respondents, including small- medium and large-scale farmers as to why they are involved in sesame seed production:

- High demand and high market value compared to other crops.
- Suitable arid/semi-arid environment and weather conditions of the areas (good soil types with moisture retention capacity, adequate rain and high temperature).
- Very short maturity time (only 90 to 120 days) compared to other crops.
- Quick turnaround means it addresses urgent need of money.
- It increases the household income status of each producers in a given short period which can be used as family budget across the rest of year.
- Though it needs intensive labour during peak seasons, for the rest of the time sesame does require a lot of labour, when compared with other crops.
- Its production process is easy and simple, except for weeding.

Of these factors, the focus group discussions and interviews with key informants in both survey areas stressed the quick harvest cycle of sesame as being its main advantage over other crops. While how quickly sesame matures depends on the variety, in this part of the country, the majority of sesame producers commonly harvested within the range of 90-120 days, as indicated in the typical cropping calendar below (Table 14.) They stressed that because of this they could more easily improve their livelihood and household income than those farmers producing other crops could.

Conversely, the producers of other crops say the main advantage of farming other crops is the high yield per unit, compared to sesame. They also say they can obtain disease and drought tolerant varieties for types of crops, as well as improved varieties. They also have access to various other inputs to enhance their productivity.

Table 14: Seasonal calendar for farm operations in sesame production

Description of Activity	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Land clearing & Preparation												
Seeding/Sewing/												
Weeding												

First Weeding												
Second Weeding												
Harvesting												
Threshing												
Marketing												

Source: Compiled from FGD and KI interviews with experts during survey, July 2020

3.3.2. Sesame supply chain and agricultural marketing

Sesame is vital to the livelihoods of Ethiopia, and is second only to coffee as a cash crop. This study was conducted in selected six *woredas* of Tigray and Amhara regions, where most of sesame of the country is produced before flowing through different intermediaries and then exported out the country. The sesame supply chain of the study areas include sesame producers (smallholder to large-scale farmers), the traders and market actors, as well as organisations such as the ECX, processors, exporters. It also considers the activities (functions), information, and resources involved in moving sesame production from producers to consumers or end users elsewhere.

The study teams in both regions studied the existing sesame supply chains and tried to illustrate its structure through a bottom-up mapping approach that depicted the sesame market chain from the local producers to global market. This is demonstrated by Figure 3 below.

As shown by Figure 3, the result of focus group discussions with producers and key informant interviews with experts and market actors indicated that for the purpose of supply chain mapping, it is important to make the distinction between smallholder farmers, including members and non-members of primary cooperatives, and the large-scale commercial producers.

The most common route for sesame from smallholder producers was for it to be sold at the local primary markets to collectors and assemblers, who then mostly sell it on via the ECX. However, smallholder farmers who are members of a union are obliged to sell their produce to the primary collective, which then mostly sell it on to the secondary level farming cooperatives, which largely exports it themselves.

There are a few exceptions to these two routes. Sometimes, rather than exporting it themselves, the farming cooperative may sell via the ECX. Occasionally, farming cooperatives in Tigray will sell their sesame straight to the federation.

Large-scale farmers, in contrast, sell their sesame almost entirely to the ECX to be exported. Exceptions to this include the 10% that is sold to traders, the 4% that is sold to the processors and the 6% to the primary market.

As for traders, they nearly all sold the sesame to processors and exporters, who directly sell to the international market through the ECX. These routes are all laid out in the Figure 3 below.

According to data from offices of agriculture in each of the *woredas* (2018/19) and secondary data from experts, the total sesame production supplied to the market by study *woredas* (Metema, Quara and West Armacho) of Amhara region was about 644,389 quintals of sesame from a cultivated area of 202,525 hectares.

Tigray Region					Amhara Region					Total	
No	**Woreda**	**Ha**	**Total Qt**	**yield (Qt/Ha)**	**No**	**Woredas**	**Land (ha)**	**Production (Qt.)**	**Average Yield (Qt)**	**Area**	**Prod (Qt)**
1	K/Humera	129,028	745,654	5.78	**1**	Metema	37,745	122,797	3.3	166,773	868,451
	LS farmer	104,300	539,350	5.17		LS farmer	25,163	78,510	3.1	129,463	617,860
	Sub-Total	**233,328**	**1,285,004**	**5.51**		**Sub-Total**	**62,908**	**201,307**	**3.2**	**296,236**	**1,486,311**
	% LS farmer	45%	42%			% LS farmer	40%	39%		42%	40%
2	Tsegede	25,301	145,480	5.75	**2**	Quara	28,536	109,556	3.8	53,836	255,036
	LS farmer	9,839	65,360	6.64		LS farmer	13,428	58,992	4.4	23,268	124,352
	Sub-Total	**35,140**	**210,840**	**6.0**		**Sub-Total**	**41,964**	**168,548**	**4.0**	**77,104**	**379,388**
	% of LS farmer	28%	31%			% LS farmer	32%	35%		30%	33%
3	Welkait	16,274	93,239	5.7	**3**	W/Armacho	57,000	171,000	2.5	73,274	264,239
	LS farmer	3,135	26,298	8.4		LS farmer	40,653	103,534	3.0	43,788	129,832
	Sub-Total	**19,409**	**119,537**	**6.2**		**Sub-Total**	**97,653**	**274,534**	**2.8**	**117,062**	**394,071**
	% of LS farmer	16%	22%			% of LS farmer	42%	38%		29%	30%
	Total	**284,742**	**1,615,381**	**5.7**		**Total**	**202,525**	**644,389**	**3.2**	**487,267**	**2,259,770**
	LS farmers	117,274	631,009	5.4		LS farmers	79,245	241,036	3.0	196,518	872,044
	% share	41%	39%			% share	39%	37%		40%	39%

Of this, large-scale producers contributed about 37% out of total production in these three *woredas* from a cultivated area of 79,245 hectares.

In Amhara, West Armacho *woreda* produced the largest proportion of sesame, about 43% of the region's total production. Large producers in this *woreda* contributed about 37% or 241,036 quintals of the total sesame supply of the Amhara region. The average yield of the region ranged between three and four quintals per hectare in the 2018/19 production year.

The data from the experts agriculture and rural development offices in the *woredas* of the Tigray region study areas Tigray region, show that sesame is produced almost exclusively for sale rather than consumption. Farmers supply all their produce (apart from less than 1% which is kept for seed and home consumption) to cooperatives, local traders at primary markets. They sometimes supply to the ECX directly if they have bulk quantities (usually more than 50 quintals) of sesame produce.

The secondary data obtained from same source indicated that in 2018/19 total sesame production by the survey *woredas* was reported to be 1,615,381 quintals grown on total land areas of 287,742 hectares. Among these *woredas*, Kafta Humera contributed 80% of the total production while Tsegede and Welkait contributed about 13% and 7% of the total production respectively.

The average yield per hectare of the region is about 5.9 quintals per hectare, while in terms of cultivated area, Kafta Humera covers about 81% or 233,328 hectares of the total land area of the region. Large-scale producers accounted for 39% of the total sesame production of the region. Table 15 below depicts details on production volume and area cultivated by major suppliers and yield per hectare of sesame seeds in both survey areas of Amhara and Tigray regions.

Table 15: Production and cultivated area of sesame by survey *woredas*, and producers 2018/19

Source: Rural and agricultural development offices of each *woreda*, July, 2020

Note: LS farmer = large-scale sesame producers who owned over 10ha of land under sesame crop

This sesame marketing chain or mapping of sesame supply chain starts from local producers or suppliers in production, goes through local market actors and collectors/assemblers all the way to exporters and the global level (consumer abroad).

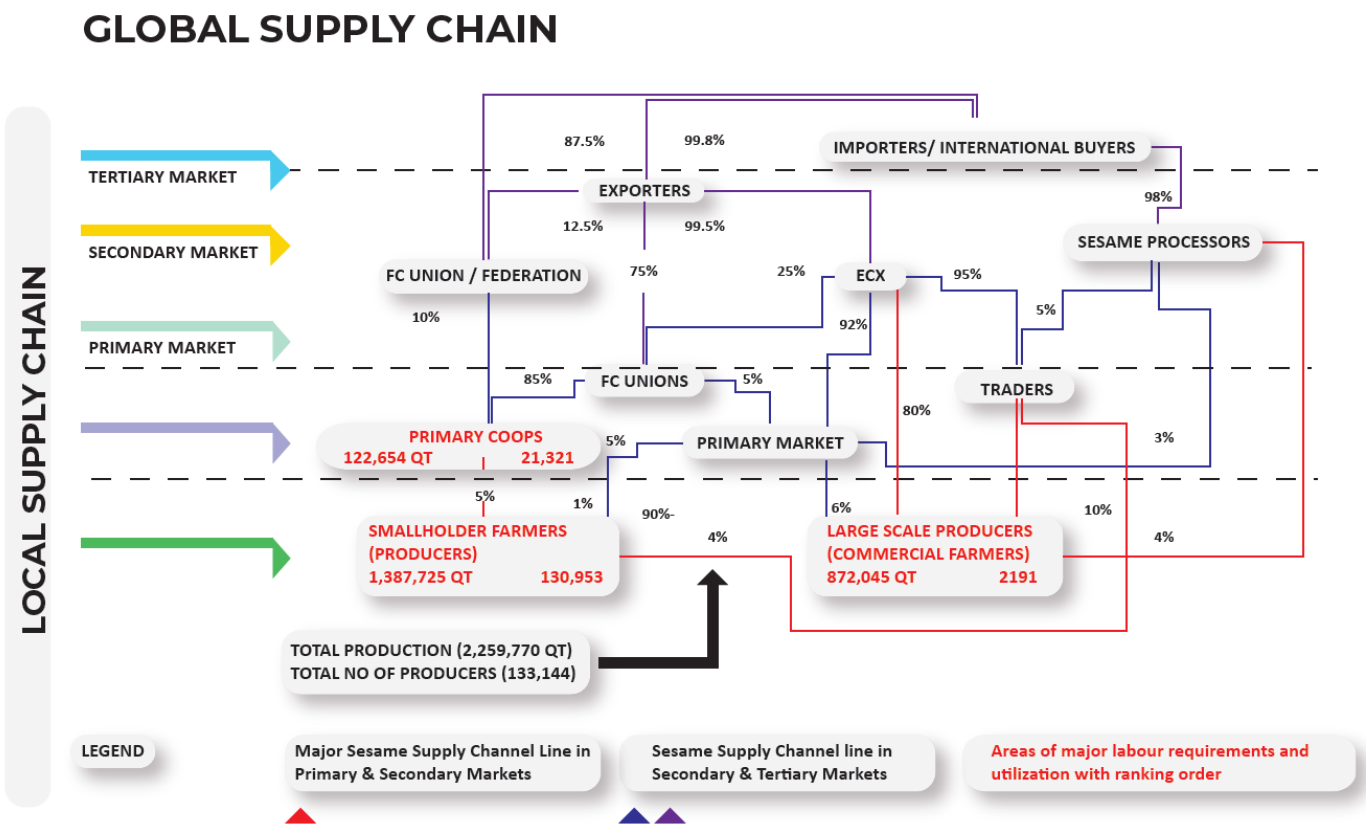
It is therefore a bottom-up supply chain: it puts producers at the bottom, shows a traceable flow of sesame seeds to intermediaries (midstream actors) at primary and secondary markets, before it reaches the ECX, and then the processors and exporters.

Figure 3 below represents a typical bottom up mapping of sesame supply chain. It particularly looks at how local producers go through local market actors to the exporters and processers via the ECX and to global supply. However, some large producers directly deliver sesame to the international market, rather than going through the ECX.

In Figure 3 below, the downstream actors in both supply and value chain maps are sesame exporters and sesame oil processors. The arrowhead shows the direction of supply or flow of sesame product. The red arrow indicates a major flow channel for producers, while the blue and purple colour signifies the commodity flows and transaction channels linked to traders, exporters, and processers at secondary and tertiary market levels.

As well as showing the direction of the commodity flow, the arrows also have a percentage written next to them, showing the magnitude of the flow. The proportion indicated on each arrow is based on the volume of sesame production by the two major producers (smallholder farmers and large-scale farmers) in the production year 2018/2019. The amount was calculated with *woreda* experts and market actors during the survey and then summarised for the survey area. Table 16 below depicts this data in full.

Figure 3 : Typical sesame supply chain map indicating major actors in Tigray and Amhara



Source: The supply chain is own design developed based on information from FGD and KI interview with producers, market actors, and experts in the study areas of two regions.

Note: 1. All the figures were taken from office of agriculture in each of the woredas, while the percentages estimated with KI discussion with experts and market actors at each woreda was based on the sesame production of 2018/19.

2. The number of smallholder farmers (130,953) includes cooperatives members who are solely sesame producers.

3.3.3 Sesame agricultural marketing channels

The sesame market in Ethiopia is highly regulated and structured. For small-scale farmers, the agricultural marketing starting point is primary market centres, which are organised and regulated by the Trade, Industry and Transport Office of both regions. At these primary markets, selected local collectors or assemblers and primary cooperatives are assigned a place in the market to collect sesame. The primary cooperatives will collect their sesame from their members, while non-members will sell to the collectors or assemblers.

These sesame market centres are formal market places that are regularly monitored. It is government policy that sesame can only be sold and bought in these regulated sesame market centres, only by licensed assemblers and/or multi-purpose cooperatives. Local government will penalise anyone who sells and buys sesame outside of these market centres.

In almost every two *kebeles* in each *woreda*, there is one sesame market centre. Accordingly, there is a total of 88 (46 and 42 in Amhara and Tigray regions respectively) primary sesame markets. These formal sesame markets centres are open every day. Table 12 above shows the number of sesame primary markets by *woreda*.

In both the survey areas, the typical buyers of sesame seed from small-scale producers were reported to be local assemblers and primary cooperatives. These buyers then sell to cooperatives unions and federations, exporters, and/or processors that finally export to the international market.

In contrast, large-scale producers can, and often do, directly supply their sesame produce to exporters or export themselves through of ECX. If producers have more than 50 quintals of sales volume, they will directly sell at ECX central market.

As for traders, they nearly all sold the sesame to processors and exporters, who directly sell to the international market through the ECX.

Discussion with producers and assemblers revealed that they all prefer to sell their sesame produce to cooperatives because these paid relatively high prices compared to other traders.

Even local collectors and traders preferred to transfer what they bought to cooperatives to benefit from the small price difference. Even though the ECX regulations does not allow transactions between market actors at the same level in order to reduce the length of the agricultural marketing chain, assemblers and large-scale producers nonetheless sometimes sold their sesame to the cooperative during peak season to make a profit on the price difference.

Sesame market channels of the survey areas show a link between sesame producers, traders and others such as cooperatives, cooperative unions, federations, processors and exporters which together competently deliver the right marketing mix[3] to consumers in order to maximize value.

Agricultural marketing channels provide a more tapered focus within the supply chain. It consists of the people, organisations, and activities indispensable to transfer the ownership of produce from the point of production to the point of consumption.

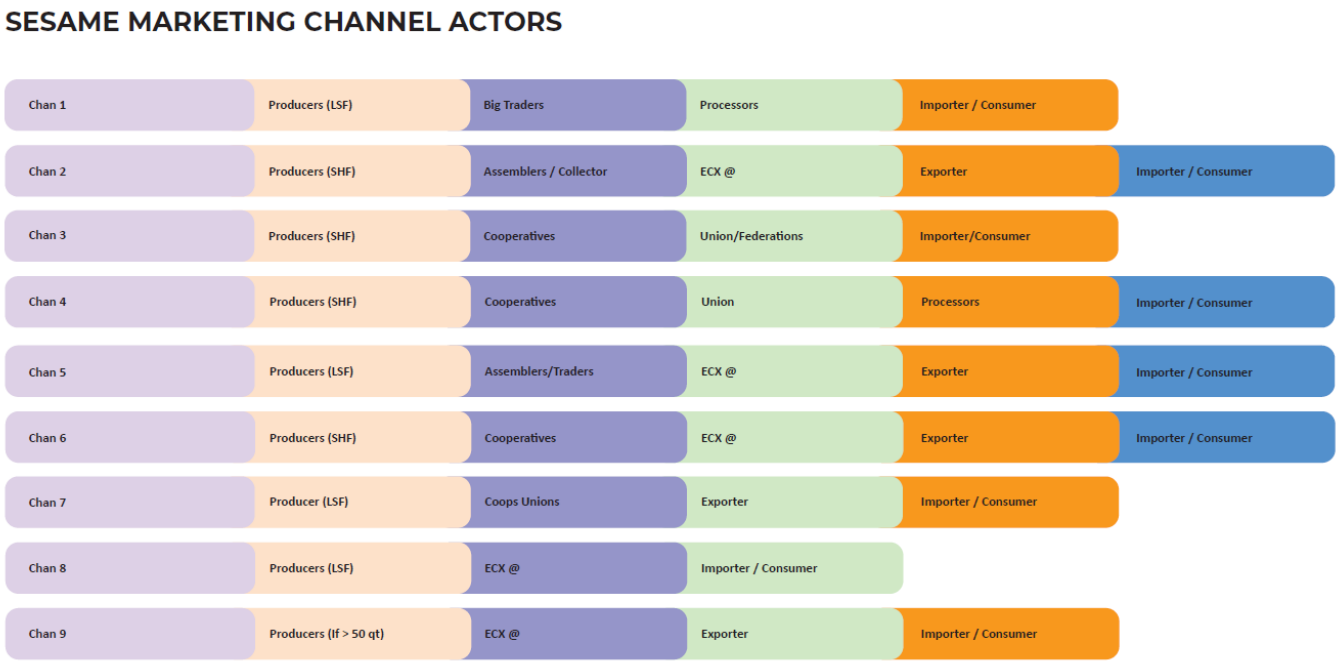
Based on the result of focus groups and key informant interviews with producers, market actors and experts in the study areas of two regions, the survey teams have identified the following nine major marketing channels that clearly show established sesame transactions. This is displayed on Figure 4 below.

It begins with producers and ends with international consumers. Each channel has a different arrangement of actors to transfer the ownership of products from the point of production up to the point of destination. Different colours are given to identify the actors and their position in channels.

Among these channels, the shortest is channel 8, while the longest channels are channels 4, 5 and 6. According to respondents, the most used channels, in terms of sesame volume, are channels 2, 3 and 6.

[3] The 4Ps of marketing is a model for enhancing the components of your "*marketing mix*" - the way in which you take product or service to market. It helps you define your marketing options in terms of price, product, promotion and , and place so that meets a specific customers need or demand)

Figure 4: Major market channels and actors of sesame identified in the study areas of Amhara and Tigray regions



Source: Own compilation from *woreda* level sources, July 2020
Note: Channel #7- indicates that if producers supply 50 or more quintals, they can sell directly to the ECX
ECX → @ = is to indicate the sale of sesame seed to the international and/or consumers abroad through ECX facilitation
SHF = Smallholder farmers, LSF = Large-scale farmers

3.3.4 Sesame value chain mapping: from the local to the global

1. The core processes of the sesame value chain

As depicted above, the sesame value chain in Ethiopia can be characterised as being relatively long. The shorter the agricultural marketing chain or value chain, the higher the market efficiency attained. Generally, as indicated in Figures 4 and 6, sesame agricultural marketing channels in the study regions operate at a low level of efficiency.

One reason for this is that smallholders lack well-organised and timely market information to help them sell their produce themselves. Another reason is that smallholders produce and supply relatively small quantities of sesame produce per farm. The results of survey in sesame producing sample *woredas* in the Amhara and Tigray regions indicated that 66.2% of sample households had less than five hectares in 2018/2019. This implies they can supply an average sesame produce of less than 20 quintals per household, given the average yields per hectare is between 4 and 5 quintals per hectare.

As a result, the sesame seed value chain in the study areas depend mainly on primary market actors and intermediaries, with the majority of producers selling their product on local primary markets. Details of the activities of the many market actors in the sesame value chain are depicted below in Figure 5.

Figure 5: Mapping core processes of sesame value chain in the study areas

Source: Own compilation from *woreda* level sources, July 2020

2. Description of sesame value chain map (VCM)

Value chain mapping is the core of value chain analysis, showing interdependencies and relationships between different value chain functions and actors, operators, service providers.

Value chain mapping consists of:

1) Value chain activities
2) Value chain actors
3) Value chain linkages
4) The context in which the value chain is situated

Figure 6 below shows the value chain map for sesame. The *actors* are placed above the *activities* they are associated with. All the key actors in the value chain are in a central position on the map and are connected with other chain actors through value chain links. The *supporting* and *influencing* actors are indicated with a different colour to differentiate them from those actors who are directly involved in the value chain. These actors are placed on the map at the right-hand side.

Moving sesame from producers to international buyers involves a range of key actors including primary local market players, cooperatives, unions, exporters and processors -- usually via ECX, which and keeps an eye on the transfer of the product to the global market.

The majority of smallholder farmers sell their produce to the primary market in their vicinity, where all the sesame is bulked. In almost each *kebele* there is a primary market allocated where legal trade takes place under surveillance of public bodies and ECX listed assemblers or collectors.

Equally important are the six farming cooperative unions (there is one branch in each of the survey *woredas*) and the 18 multi-purpose cooperatives (nine in each region). These all play a vital role in the sesame value chain, particularly in buying, collecting, bulking and transferring to their respective unions (see Table 12 above for details of the unions). Farmers who are members of primary

cooperatives produce and sell their sesame produce to the cooperatives. Cooperatives in turn sell to the nearby ECX centre or to the union.

There are five branches of the ECX, including two in Amhara and two in Tigray. At the ECX the sesame is graded and labelled between one and four according to different phenotypic and quality groups favoured by different global consumers. This depends on the level of admixture, damaged seeds, moisture and colour. Exporters often complain about the way sesame categorised and graded at ECX centres.

Apart from this, the purchase price of sesame for export is determined by the evenness or uniformity of the colour, taste, dryness, and purity. The percent of oil content is the main consideration for sale to the oil processing industry.

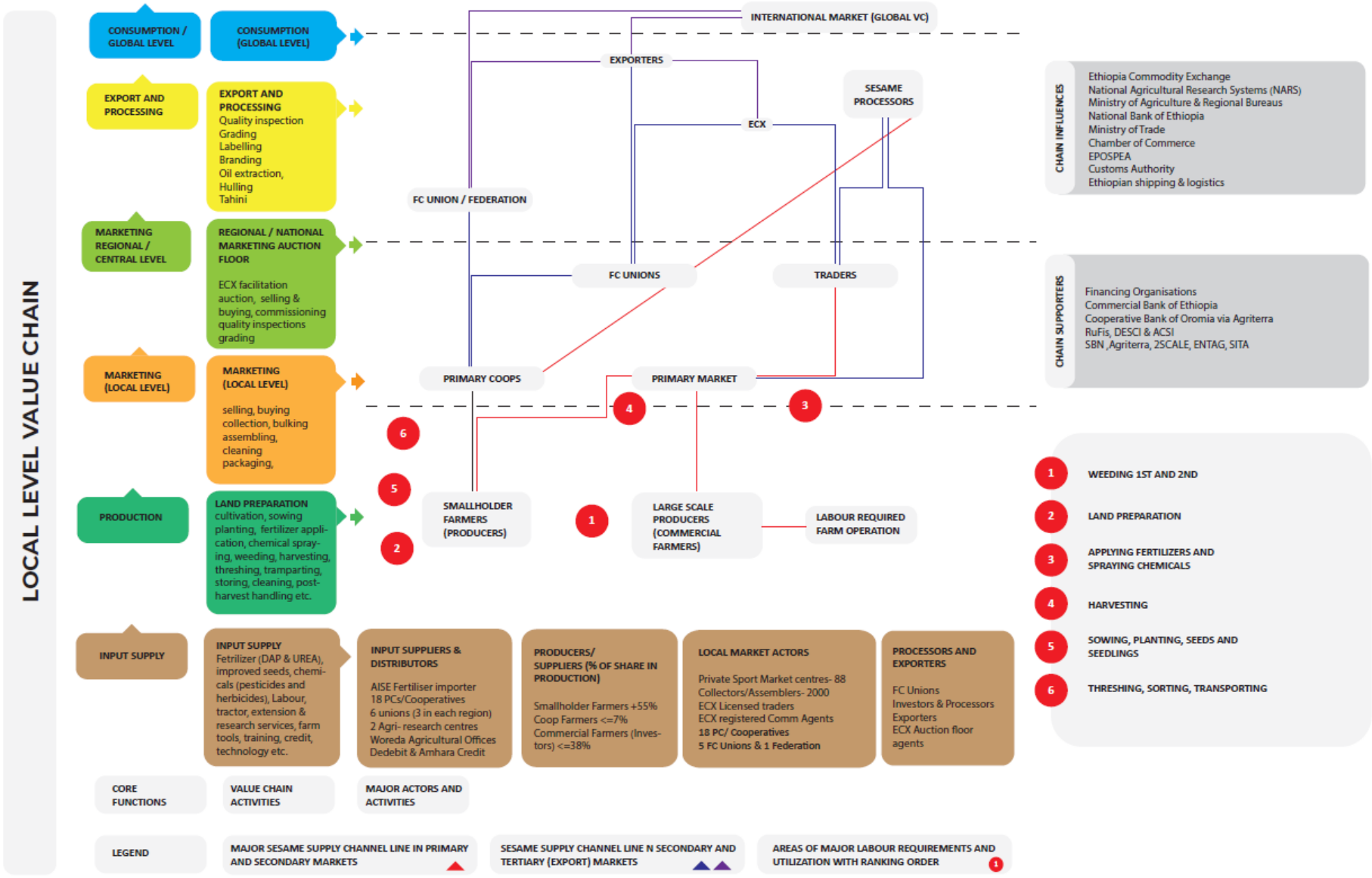
Sesame transacted on the ECX floor categorised into two types, namely Humera and Wollega.

Finally, from the ECX the graded sesame goes to the export traders, who sell it to international buyers on the global market.

According to the new auction directive of ECX, it is binding to trade sesame on the ECX floor and presently about 95% of exported sesame was traded on the auction floor.

Nevertheless, exceptions are made in the case of commercial farmers, and unions or federations (in Tigray), which can directly export their produce, bypassing the ECX.

Figure 6: Comprehensive sesame VC map indicating actors, functions, supporters and influencers from local to global levels.
Source: Own design developed based on information from FGD and KI interviews in the study areas, July 2020



The value chain map above is a starting point for identifying potential areas for interventions that could be made to alleviate the problems in the sesame value chain at different stages.

The respective function of each section of each stage in the value chain is indicated on the left as *input supply, production, agricultural marketing, processing and export* and local and global *consumption* indicated.

The map also indicates the major actors, influencers, and supporter organisation of the value chain who play key roles in production, agricultural marketing and processing of the commodity (the bottom and the right side of the map).

Moreover, the map indicates where a vast amount of labour (including child labour) is required to meet the seasonal farm operations and activities. The red stars are used to show the major areas of child labour use. The figure inside the stars indicates the level of child labour use in farm activities. This indicates potential key areas of intervention alleviating child labour exploitation or WFCL in sesame value chain.

Henceforward, mapping of the sesame supply chains and value chains in the study area (Figure 3 and 6 above) can be referred to in parallel to see various aspects, links, and facts about the value chain.

It should also be noted that the chain map described above can be thought of as a typical map for Ethiopia as a whole because sesame production, processing, and agricultural marketing situations are almost similar in all regions. The map involves functions, actors and other service providers in the whole value chain.

3.3.5 Sesame value chain actors role, functions analysis and mapping

The following section breaks down and describes all the value chain actors, value chain supporters and value chain supporters, which are defined as follows:

Value chain actors: These chain actors are those who directly deal with products, whether they produce, process, trade, or own them.

Value chain supporters: These are services providers, including various actors who never directly deal with the product, but whose services add value to the product.

Value chain influencers: These are involved in the regulatory framework, policies and infrastructures at the local, national, and international level (SDC, Berne, 2007).

Because sesame is a major cash crop and an internationally traded commodity, a large number of actors in all these categories are involved at different stages and activities across the value chain from the input supply stage up right up to the final destination of the commodity in the global market.

1. Key actors of the sesame value chains

The study analysed the interaction and linkages of the key actors of the sesame value chain in the study areas.

It also describes the share of the product supply and market margins for major actors throughout the chain. The following actors are described below: input suppliers, producers, market actors, processors and exports.

Input suppliers

The major agricultural inputs for sesame crop production are inorganic fertiliser (DAP, Urea), agro-chemicals such as pesticides and herbicides, and a limited amount of improved sesame seed.

Important institutions and public organisations involved in the input supply include: each *woreda's* Office of Agriculture and Rural Development; Agricultural Research Centres in both Humera and Metema; the Amhara Credit and Saving Institutions (ACSI); the Dedebit Credit and Saving Institution (DECSI); various farming cooperative unions; primary cooperatives; traders and processors.

Likewise, the Sesame Business Network (SBN); the Agricultural Transformation Agency through the cooperative-based seed production project (CBSP); and the various ECX branches are also involved in capacity support and input provision, and considered sources for improved sesame seeds.

Two types of sesame seeds are supplied by primary cooperatives and the local research centres of Metema and Kafta Humera, namely Humera White t-85 and Wollega Red/Brown- Mehado-80.

However, according to information from focus group discussions and key informant interviews, the majority of sesame farmers use their own recycled sesame seeds they have saved from their previous production in the preceding year.

Inorganic fertiliser (DAP, Urea) is only imported by the Agricultural Input Supply Enterprise (AISE) and the distribution to producers is through unions and cooperatives.

Most agro-chemicals, such as pesticides and herbicides, are supplied by private traders, such as agro-dealers, though unions also supply some pesticides.

There are over five unions and 18 multi-purpose cooperatives (nine in each of the two study areas) who sell and distribute these inputs. However, key informant interviews with producers and cooperatives members have shown that they often complain about this service. They report that the agro-chemicals supplied are too expensive compared with market prices set by traders or private dealers and they also arrive too late. Hence, private input dealers play a vital role in the supply and sale of pesticides to farmers at a lower price, sometimes on credit.

One of the essential inputs for sesame producers is credit, which is necessary for the purchase of agricultural inputs. Most of the credit services are provided by the Amhara Credit and Saving Institution (ACSI) and Dedebit Credit and Saving Microfinance Institution (DECSI). According to interviews with farmers and *woreda* experts in both regions, even though loans are available for any producer, the size of the loans on offer are inadequate to cover the purchase of required inputs, given the ever-increasing price of inputs. Currently, the loan size ranges from 5,000 ETB to 20,000 ETB, depending on the collateral and repayment history of farmers.

Another alternative source of loan is farmers' cooperatives. These cooperatives provide a loan and storage service, but only for their members. Commercial banks also offer loans, but the farmers normally do not have the collateral required.

Producers

The study found there were 133,144 sesame producers. Of these, the study divided the producers into two major categories: smallholder farmers/producers and large-scale producers or commercial farmers.

There were found to be far more small-scale farmers than commercial farmers. According to information from each *woreda's* agricultural office, in the 2018/19 production years there were a total of 130,953 smallholder sesame producers, of which about 21,321 were members of primary cooperatives, while 109,632 were not members.

About 2191 large-scale producers were found to be involved in sesame production. The overall total sesame production of the study area is estimated to be a total of 2,259,770 quintals of sesame, produced on a total cultivated area of 487,267 hectares.

Of this total production, non-cooperative member smallholder farmers contributed the largest proportion (56%), while commercial farmers and cooperative members contribute about 39% and 5% of the production respectively. This shown on Table 16 below.

The majority of farmers practice a traditional way of sesame farming, including monocropping (repetitive farming without rotational crops and fallowing the land). They use the broadcasting method for planting (a manual way of planting) and manual weeding, harvesting, drying, and threshing. Very few sesame farmers practiced farm mechanisation using tractors, row planting and chemicals that could reduce the reliance on labour.

These farms did sometimes use improved seed, fertilisers, and pesticides on their farm. They produce sesame almost exclusively for sale as well home consumption. They supply most of their produce to local market actors (collectors or assemblers) and to cooperatives as well as traders. In some cases, they sell directly to big traders and exporters at ECX market if they have bulk quantities (usually more than 50 quintals) of sesame produce.

Table 16: Estimates of production, areas and proportion by producer type (2018/19 production year)

Tigray Region	Number	Area (ha)	% share of land	Production (qt)	% share of production
Types of Producers					
SH Farmers	58,236	150,913	53%	903,603	56%
LS Farmers	1110	116,744	41%	631,009	39%
Coop Members	12,021	17,085	6%	80,769	5%
Sub total	**71,367**	**284,742**	**100%**	**1,615,381**	**100%**
Amhara Region	**Number**	**Area (ha)**	**% share of land**	**Production (qt)**	**% share of production**
SH Farmers	51,396	107,338	53%	361,468	55.5%
LS Farmers	1,081	79,245	39%	241,036	38.0%
Coop Members	9,300	16,202	8%	41,885	6.5%
Sub total	**61,777**	**202,525**	**100%**	**644,389**	**100.0%**
Tigray & Amhara Region	**Number**	**Area (ha)**	**% share of land**	**Production (qt)**	**% share of production**
SH Farmers	109,632	258,252	53%	1,265,071	56%
LS Farmers	2,191	195,989	40%	872,045	39%
Coop Members	21,321	33,287	7%	122,654	5%
Total	**133,144**	**487,267**	**100%**	**2,259,770**	**100%**

Source: Agricultural offices of each surveyed sesame producing woredas, July 2020

Note: 1. LS Farmers are those who have land size equal or greater than 10 ha.

2. Coops members are smallholder farmers. The number of coops members indicates those solely engaged in sesame production

3. SH Farmers are smallholder farmers who have land less than 10 hectares

Market actors

Different market actors, such as assemblers/collectors and aggregators**,** are involved in buying and selling activities in all the survey *woredas*. Only those authorised by the ECX and by local trade and transport offices are allowed to buy sesame, and only ECX licensed traders can collect sesame.

These traders can buy and sell at the 88 official local primary markets established at each *kebeles* in each *woreda*. Buying and selling anywhere else is illegal.

Primary cooperatives, through unions, are also involved in the collection of sesame. Cooperatives are increasingly becoming key players in sesame transactions by virtue of the various incentives provided to them by the government.

These collectors deliver the sesame to nearby ECX warehouses. The ECX warehouse only accepts batches of at least 50 quintals. There were 17 warehouses (six owned by unions and 11 by primary cooperatives) for sesame in Tigray and Amhara regions' sesame clusters in 2019/20.

Processors

Most processors and exporters are found in Humera town and Addis Ababa city. Exporters screen, clean and sort sesame into 50 kg bags. According to the Bureau of Investment in Humera, there are 21 cleaning enterprises in the town, but none for hulling (removing the husk).

The hulling enterprises are located in or around Addis Ababa, with some having branch offices in the sesame production regions.

Sesame processors face problems with the sesame they receive, including the occurrence of impurities such as dirt, branches, and stones.

Poor quality sesame with impurities needs more cleaning to get it ready for export, which is costly. This lowers the competitiveness of sesame export. Because of the low quality of sesame, importers in many developed countries are able to purchase sesame seeds and resell it at a much higher price after adding value through cleaning and hulling. Reducing this wide gap in the selling price of sesame requires quality improvement at all levels.

Exporters

Exporters are the main market actors transferring sesame to its final destination: consumers.

There are two types of sesame export: raw seed and processed in the form of hulled sesame, tahini and sesame oil. However, the majority of the exporters are involved in raw sesame export, which accounts for 95% of the export volume.

There are few companies involved in sesame processing and export activity, among which the main are: Guna Trading, Ambasell, Select Hulling, Agro Prom, Hajuta Trading, Ethi Agri-CEFT, Kidam and Tracor.

Almost all the unions (Tsehay, Metema, Selam and Setit) export raw sesame themselves, without going through a private company.

Similarly, about 1096 or 50 % of commercial farmers are engaged in exporting their produce themselves.

However, exporters do play a major role in the value chain: according to data from the Ministry of Trade (2018), there are over 1,300 exporters that deal with oilseeds, including sesame.

The same source indicates that China is the principal destination for raw sesame from Ethiopia. In some cases, Chinese companies form a joint venture with a local agent, which purchases on their behalf during the harvesting season.

Table 17: Information on the number and % share of main actors in sesame value chain

Input suppliers & Distributers	Producers/Suppliers (% of share in production)	Local Market Actors	Processors and Exporters
- AISE Fertilizer importer, - 18 PC/ Cooperatives - 6 unions (3 in each region) - 2 Agri- Research Centers, - Woreda Agric. Offices - Dedebit and Amhara Credit Associations	- Smallholder farmers = 56% of production - Coops Members =21,321 < = 5% % - Commercial farmers (Investors) < = 39%	-Primary/Spot Market Centers = 88 -Collectors/Assemblers = 2000 -ECX licensed traders -ECX registered Comm. Agent -18 PC/ Cooperatives -5 FC Unions & 1 federation	FC Unions Investors/ Processors Exporters ECX Auction Floor Agents

Source: Source: Own summary from various information, July, 2020

2. Chain Influencers

Value chain influencers: Are those actors involved in the regulatory framework, policies and infrastructure influencing sesame production at the local, national, and international level. Several public and private organisations are involved in the sesame value chain and considered chain influencers and chain supporters.

Some of these actors are indicated below:

- **Ethiopian Commodity Exchange (ECX)** is one of the key public structures influencing the entire sesame value chain. Currently, buyers, through the ECX auction floor export the majority (over 95%) of sesame. It is binding and mandatory for all traders and exporters or processors to trade on the ECX auction floor. Almost all private companies in the export businesses purchase their sesame via the ECX trading platform.

  The exception to this is some commercial farmers and unions which are certified to directly export their own produce.

  This assessment found that value chain partners said repeatedly that the ECX has some fundamental weaknesses.

  While ECX has been successful in avoiding contract defaults between exporters and farmers and traders, some of its operation makes it difficult in the context of European export regulation. Producers say there is a lack of traceability of ECX traded material and that products delivered to ECX can only be tested on physical features. No testing is done for pesticide residues, aflatoxins or microbiological contaminations. There is also 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 revision, and the working and results need greater transparency and should be available to exporters.

- **The trade and transport offices of the *woreda*, zones and regions** are responsible for regulatory inspection and monitoring of activities of the sesame value chain from local to export level. This office monitors the performance of traders and companies and also supports them in their formal trade activities.

- **The Ministry of Trade and Industry** is responsible for monitoring export performance and supporting companies in market development through the Export Promotion Agency and 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.

- **The Trade and Investment Promotion Department** within the Ministry of Trade 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 areas of focus, with oilseeds taking first place.

- **The Agricultural Transformation Agency (ATA**) is dedicated to helping accelerate the growth and transformation of Ethiopia's agricultural sector. The agency's mandate is focused solely on improving the livelihoods of smallholder farmers across the country. The ATA is also an

innovative governmental agency with a mandate to test and evaluate various technological and institutional interventions that could raise agricultural productivity, enhance market efficiency, and improve food security.

In fact, it was the ATA that promoted the concept of the Agricultural Commercialization Clusters (ACC) Initiative that was introduced during the national Growth and Transformation Plan I and is also part the Growth and Transformation Plan II.

ACCs are designed to integrate the production of certain high priority crops in order to maximize production and productivity.

The initiative contains clearly defined geographic clusters specializing in priority commodities across the four major agricultural regional states of the country, Oromia, Amhara, Tigray and SNNP.

The overview below provides details about the ACCs. The concepts and definitions page also contains an explanation.

A rigorous, three-step process was undertaken to identify and prioritise the clusters: first, the identification of primary and priority commodities where Ethiopia has a comparative advantage; second, the identification of appropriate *woreda* groupings for these commodities that could be 'clustered'; and third, final *woreda* selections based on additional market factors.

Nine priority crop commodities value chains have been identified for focus by the ACC Initiative in the last two years of GTP II: wheat, maize, sesame, malt barley and horticulture crops – tomato, onion, banana, mango, and avocado.

Within the ACC efforts have been made to enhance farm scale by clustering farmers. This is called the Farmer Production Clusters (FPC) project, where 30-200 farmers are grouped together on adjacent land to farm as one.

These groups of farmers in the FPC are required to adopt the latest full-package farm recommendations, including the use of improved seeds, fertiliser, and other farming best practices. Over time, FPC farmers are expected to move towards becoming as established as commercial companies.

The ACC project is designed to closely link with Ethiopia's Integrated Agro-Industrial Park (IAIP) development.

This link will enhance private sector involvement in priority commodities such as sesame, with an ultimate focus on work that adds value. Such activities include processing the sesame into tahini, oil and other products, in a way that ensures sustained raw material supply and growth within clusters.

In line with this, two oil extraction and processing projects are in the final phase of construction and will soon be operational. This includes IAIPs at Bure in Amhara and Humera in Tigray and one private oil processing plant in Debremarkos town.

IAIPs at Bure in Amhara and Humera in Tigray and one private oil processing company at Debremarkos town (about 120kms from Bure AIP) will be under the final phase of construction, and operational soon. Particularly, Bure AIP oil industry and the AW[4] Private Oil Processing.

Overall, it is hoped that the ACC initiative will improve the sustainability of the sesame value chain through earning the country foreign exchange and through promoting import substitution.

- **National Agricultural Research System (NARS)** includes research centres and universities (based in (Gondar, Metema and Humera) which are engaged in variety of development issues.

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

- **Regional bureaus**, **zone and *woreda* agriculture and rural development offices** are all are involved in various input supply, agricultural extension activities, and capacity building in support of the sesame value chain.

  In each *kebele* of the study, *woreda* the local government assigned three development assistants (DAs) with a first degree in areas of agronomy (plant science), animal production, and natural resource management.

  At *woreda* and zone level there are experts and subject matter specialists who provide outreach field services to extension workers.

  However, the DA reach and coverage across the *kebele* or sesame cluster areas is limited. Sesame producer farmers receive only one or two visits throughout the production cycle, and in some case, farmers are not visited at all.

  According to focus group discussions, DAs are inclined to focus on large producers and ignore the efforts of small-scale farmers. In fact, the official strategy is that they should work with 'model farmers' who in turn should reach out and inspire the surrounding farmers.

- **National Bank of Ethiopia**: is responsible for regulations on foreign exchange use. The national bank of Ethiopia tends to push for exports.

- **Ethiopian shipping and logistics customs authority**.

[4]According to a recent press release by the Amhara Media Network (Sept. 22, 2020): the AW Private Oil Processing Industrial Complex was established with a capital outlay of 3 billion ETB (equivalent to 85.7 million USD) in Debremarkose town. The company says it will create job opportunity for about 2000 workers (plus 23 Chinese workers already hired), and benefit up to 500,000 oilseed producers including the sesame producers of the study areas. The company plans to export up to 500,000 litres of sesame oil per day and expects to earn huge foreign currency. It also plans to promote import substitution by supplying refined oils to local markets. Ethiopia spends an average of 400 million USD per year on importing palm oil.

3. Chain Supporters:

Value chain supporters are those who provide various support services such as technology and finance. These include various actors who never directly deal with the product, but whose services add value.

- **Financial organisations include formal banks and rural financial institutions (RuFIs).** A lack of financing for the production of crops in general and sesame in particular was mentioned by producers as one of the main problems in the study areas.

  Export financing in Ethiopia is done through banks. The government of Ethiopia gives a high priority to export financing, meaning that any exporter that has a contract with an overseas buyer can get loan from a commercial bank.

  All banks provide export loans, but the interest rate given by the state-owned Commercial Bank of Ethiopia is the lowest: 7.5% compared to the 17.5% that the private banks offer.

  Availability of finance for production is limited, though the Cooperative Bank of Oromia via Agriterra gave out some loans.

- **The Rural Financial Intermediation Programme III (RUFIP III)** aims to improve livelihoods and reduce vulnerability and poverty through financial and nonfinancial measures. This is achieved through a nationwide network of more than 11,000 rural savings and credit cooperatives (RuSCOs), unions, and 38 microfinance institutions (MFIs) with increased focus on marginalized areas.

  However, there are limited loans available through MFIs, primary cooperatives and RuSCCo . Farmers are as a consequence forced to enter into contracts with informal or illegal money lenders ('*shell*' in Tigray and '*shi–be –shi*' in Amhara) with an estimated annual interest rate of up to of 400 %.

  Dedebit and Amhara Credit and Saving Institute have loan products for the production and agricultural marketing of sesame, though they charge high interest rates of more than 18%. This interest rate is higher than the formal financial institutions loan services and farmers usually complained about this rate.

- **The Ethiopian Pulses, Oilseeds, and Spices Processors Exporters Association (EPOSPEA**) is the most active private-sector organisation directly engaged in the promotion of pulses and oilseeds as exports. It is focused on trade promotion and lobbying for export. Sesame is its main oilseed crop. 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.

- **Chamber of Commerce and Sectoral Associations (ECCSA)** is one of the chain supporters directly and indirectly working through public private partnership platform. The Ethiopian Chamber of Commerce and Sectoral Associations (ECCSA) is an umbrella organisation of Chambers and Sectoral Associations in Ethiopia. ECCSA currently has 18 member chambers and sectoral associations. These member chambers and sectoral associations have about 40,000 member companies. The main role of ECCSA is to improve the advocacy services through institutionalising Public-Private Partnership Dialogue Forums (PPDFs) at national, regional, and city levels, and contribute to the enhancement of the export earning of the country through promoting Ethiopian products such as sesame in foreign market, with a view to strengthening local processing industries.

NGOs and other organizations supporting sesame value chains

- **Sesame Business Networks (SBN**) is project funded by the Dutch Ministry of Foreign Affairs and is active in North Gondar and West Tigray zones. This project supports smallholder farmers in Quara and Metema in the Amhara region and Humera in the Tigray region to improve yields by facilitating access to best practices, technologies, and finance. Sesame Business Network (SBN) also helps cooperatives in selling their sesame to European importers.

Other programmes and organisations

- **2SCALE** -- a Dutch programme for building agribusiness clusters; **ENTAG** – a Dutch-funded project for business facilitation, consultancy, and capacity development; **Agriterra** – a London-listed pan-African company which is involved in cooperative capacity building; and the Indian-government initiative Supporting Indian Trade Investment for Africa (SITA) is involved in various projects supporting agricultural extension and capacity building of smallholder farmers at various stages of sesame value chain.

3.3.6 Analysis of sesame value chain costs, margins and income contribution

Marketing margin is the difference between the purchase and sale prices of a commodity through its marketing channel. It is calculated by finding price variations between different segments of the chain and then comparing with the final price (consumer price). Since the price differences at each stage are going to take a share from the final price paid by consumers, the consumer price is the base or the common denominator for all marketing margins.

The sesame agricultural marketing chain stretches all the way from producers to consumers, but this study focused on the chain from producers to the exporters.

The results from calculations of average profit margins of actors in this part of the sesame value chain (i.e. producers to consumers) of the two regions showed that farmers make the highest profit margin in the value chain, followed by collectors/assemblers. This is shown in Tables 18 and 19. This implies that producers and collectors or assemblers involved in the sesame value chain can make a reasonable profit on their sales, as long as they are able to reduce overhead costs, such as the cost of labour.

As indicated by Table 18 and 19 below, according to information on sesame production for 2018/19, the share of net margin of producers in both regions was 54.5% and 51.9%, while that of collectors/assemblers and processors was 38.6% and 37.4% and 14.85% and 23.5% for Amhara and Tigray regions respectively.

In contrast, the percentage share of the net margin for exporters was -7.9% and -12.8% for Amhara and Tigray regions respectively, implying they were selling below the breakeven point at loss.

This low share of the sesame value chain at the tertiary (export) level is low or negative for various reasons, including an unstable price as a consequence of the global sesame market situation.

The very low value chain margin at the export stage indicates that these market actors operated in the value chain even at loss.

The justification for this given by interviews with experts and market actors include the fact that exporters had a critical need for hard currency and therefore had to sell the sesame, even at loss. Other actors explained that exporters would re-invest the hard currency they obtained through the sale of sesame in importing various commodities and in this way compensated for their losses. Another reason given was that they needed to maintain trade links with established foreign customers.

Table 18: Average costs, profits and gross margins[5] by actors in sesame VC (Amhara Region) 2018/19

Items (Birr/Qt.)	Producers	Collectors and/or Assemblers	Processors	Exporters
Purchase price	–	3,600.00	4,100.00	4,400.00
Production cost	3050.00	–	–	–
Marketing cost	–	110.00	150.00	350.00
Total per quintal	3050.00	3,710.00	4,250.00	4750.00
Unit sale price (revenue)	3,600.00	4,100.00	4,400.00	4670.00
Gross profit (margin)	550.00	390.00	150.00	??80.00
% Share of net margin[6]	54.50%	38.6%	14.85%	??7.9%
% Gross margin	15.28%	9.51%	3.41%	??1.71%

Source: Own survey results, July 2020

Like any other business-oriented entrepreneur, smallholders and large-scale farmers are interested in the profitability of their farm.

For this reason, efforts were made to determine the cost associated with sesame production and the revenue that went to the producers.

Table 20 below shows an average cost - benefit analysis of sesame seed production in the study areas for the production year 2018/19. The average sesame yield per hectare, the total amount of sesame seed produced per hectare and the total variable costs per hectare is indicated for both regions.

[5] The marketing margin of a given agricultural commodity is the difference between purchase and sale prices of that commodity through its marketing channel. Gross margin is calculated by dividing the gross income or gross profit by the revenue earned from sales. Then, multiply by 100 to give a percentage. For this study, the gross margin (% GM) of sesame = (End buyer price - Seller price)/ End buyer price x100.

[6] The net marketing margin (NMM), which is the percentage of the final price earned by the intermediaries as their net income after their marketing costs are deducted, and is calculated as: NMM = (Gross margin - marketing costs) / End buyer price x100

Table 19: Marketing costs, profits and margins of actors in sesame value chain (Tigray region) 2018/19

Items (Birr/Qt.)	Producers	Collectors and/or Assemblers	Processors	Exporters
Purchase price	-	3800.00	4,300.00	4720.00
Production costs	3,314.00	-	-	-
Marketing costs	-	150.00	200.00	250.00
Total per quintal	3,314.00	3,950.00	4500.00	4970.00
Unit sale price (revenue)	3,800.00	4300.00	4720.00	4850.00
Gross profit margin	486.00	350.00	220.00	120.00
% share of profit margin	51.92%	37.4%	23.50%	12.82%
Gross margin %	12.79%	8.14%	4.70%	2.50%

Source: Own survey result, July 2020

As described in Table 19, the total return to exporters from sesame trading is 4850.00 ETB per quintal, while they incurred the total agricultural marketing cost of 4,970.00 ETB per quintal, and therefore faced a loss of 120.00 ETB per quintal.

This implies that the sesame market performance deviates from the norms of the competitive and efficient market performance. It stands in direct contrast to the share obtained by value chain actors in the competitive market.

Thus, sesame value chain is a poorly performing non-competitive market, which did not afford reasonable profit especially for exporters.

Table 20: Average cost - benefit analysis of sesame seed production of the study areas (2018/19)

Costs and Returns by Regions	**Value in Birr (ETB)**	
	Amhara	**Tigray**
Sesame yield obtained per hectare in quintals (Qt/ha)	3.2	5.5
Price of sesame sold per quintal (ETB) - at farm-gate	3,600	3,800
Total revenue (TR)/ha	11,776	20,900
Total costs (seeds, fertilisers, chemicals, labour and other costs)/ha	9,760	18,227
Total cost (TC)/ha	9,760	18,890
Gross margin/ha	2,016	2,010

Source: Own survey result, July 2020

3.3.7 Value chain coordination, integration and governance

The value chain integration among chain actors involves the interaction and exchange between participating players of sesame value chain or supply chain. The value chain integration[7] among major actors, chain supporters of the sesame value chain is a key function for performing the overall delivery or transfer of a commodity from the point of its origin production to the point of the end users, consumers.

[7] In this report, the team use the terms horizontal and vertical integration slightly differently to the conventional usage. Here horizontal integration is taken to mean links and relationships between different actors at the same level of the value chain. The term is particularly used in the report when analysing unionisation at the producer level. The report uses the term vertical integration to mean links and relationships between actors at different levels of the value chain, and used to discuss, for example, flows of information about market price down to producers.

For this reason, the study team has assessed the integration, linkages, and coordination of sesame value chain in the study *woredas,* through key informant interviews with various actors.

Generally, the study revealed that there is good collaboration and linkages between various value chain actors*,* supporters and influencers across different stages of the chain from the point of input supply and production through to the global arena.

However, there is no efficient and well-organised vertical and horizontal collaboration among producers.

The only bottom up integration of sesame producers is via smallholder farmer organisations, where primary cooperatives are linked to the unions and federations. Every member supplied their product to the primary cooperative, which then supplied their produce directly to the union, and in some cases to federations and in this way transfer commodities from point of production to the global market. This is mapped out in Figure 6 above.

Of the levels of the sesame value chain (primary, secondary, tertiary), the most well-coordinated is the primary level. The primary market is where local markets operate under surveillance of the concerned public bodies and the ECX. According to systematic personal observation by the study team on the primary markets, most local sesame assemblers coordinated with sesame producers. Assemblers coordinated with farmers to obtain sesame without strong competition. They did this by establishing new (or re-establishing former) relationships or friendships with producers. To nurture these relationships, the assemblers sometimes supported producers by providing loans with little or no interest. The assemblers negotiated with the producers ahead of the harvest season with oral promises to pay more than others, including covering the producers transport costs; in return the producer would promise to sell their crops to them exclusively. As the result of this systematic coordination, when the producers want to sell, he/she calls to make sure his/her coordinated buyer is ready, and the assembler then buys with no competition on the primary market.

The secondary involves traders and aggregators, who are actively involved in the secondary markets, and finally the tertiary market is where exporters, processors and others deliver the sesame and its products to the global market. The last two market structures operate under weak integration. They operate separately.

Linkages to partners in the international market, particularly to companies in Europe, is very important to exporters. But in this regard the potential benefits were not attained due to weak linkages and low capacity to work in compliance with the business culture and standard required by the European market.

Apart from this, the ECX, the regional trade and transport bureaus, the oilseed and pulses Directorate at Trade and Investment Promotion Department, the Agricultural Transformation Agency (ATA) and the various organisations providing financing for production and export, are the main chain supporters and influencers throughout the value chains.

The ECX is particularly important. Besides its coordination role in the sesame market its warehouse system and facilitation of the auction market floor for the export market, it influences the entire sesame value chain. The ECX also coordinates the provision of market information system to producers and market actors through electronic billboards at some primary markets, through their

website, newspapers and a telephone number (904). Another non-tangible service it provides is the grading of the sesame before it is exported abroad. This grading occurs at ECX collection points and is both a service for the early buyers like traders, cooperatives and unions, but mostly to sesame end-buyers (exporters and processors). The ECX, in collaboration with the Agricultural Transformation Agency, has made various efforts to introduce online and digital market information, trading, an input voucher system and to establish remote trading centres across the priority areas (ATA, 2016).

During the key informant interviews it was found that there were no horizontal relationships or linkages among sesame producers. The majority of small-scale farmers lacked quality and timely information about the market price of sesame, which held back their ability to organise to negate the impact of volatile sesame prices. The exception to this is the members of primary cooperatives (who enjoyed some vertical integration from farmers, to cooperative to unions and federations). In general, however, sesame producers did not benefit from horizontal relationships that could help them to have strong bargaining power on the market and improve their chances of attaining a sustainable flow of income.

Other important issues with regard to the value chain is the governance, coordination, and the relationships between actors and service providers. Governance and coordination were analysed separately, but it should be noted these roles were often blurred.

Looking at the governance structures or arrangements, sesame value chains are buyer-driven value chains, where international buyers undertake the lead coordination activities and influence product specifications (qualities and standards). As a result, producers and marketers are all price takers. Therefore, in the existing sesame value chain, international buyers and the global market impact product specifications, prices and play the lead role in coordinating the various links from exporters to producers.

Generally, coordination between various actors, service providers and the governing of the processes in sesame value chains is limited. In terms of setting rules, monitoring performance and assisting producers to sell to the requirements of international buyers, more and better quality coordination and governance is required.

Even though the Ministry of Agriculture, including its zonal and *woreda* offices, has a well-organised structure that enables it to reach producers, it plays a limited role. Recently, the Agricultural Transformation Agency, with the Bureau of Agriculture and the Office for Trade Promotion, in conjunction with other development partners established a platform where sesame stakeholders exchange thoughts and knowledge, discuss challenges, and set goals to overcome these challenges. Since then, a number of coordination meetings have been held in the two regions, Amhara and Tigray, as well as an annual sesame business meetings.

One example of successful coordination was run by the Sesame Business Network. It arranged sector-wide meetings between actors in north west Ethiopia at the cluster and regional level. A number of cluster meetings have been held in past years, in addition to regional meetings between stakeholders. The first cluster-wide meeting was held in February and March 2013, while the second meeting was conducted in June 2013. These meetings were used to formulate economic objectives, strategies, actions and activities for the clusters to cover the 2013-2015 period (CBN, 2014).

Generally, the focus of improving the coordination across the value chain in these clusters should be on improving quality management and traceability. The aim is that quality is managed throughout the whole chain through simplified practices and an agreement between value chain partners. A good example is the Conduits of Excellence, which was designed and implemented by UNIDO (Lehr, 2016) and provides various business ethics training for value chain actors, with the aim of increasing the professionalism of the sector and its ability to deal with world standards.

Another positive development would be to scale up the out grower schemes (broadly defined as binding arrangements through which a firm ensures its supply of agricultural products by individuals or groups of farmers) which are already in operation on a small-scale in the Amhara and Tigray regions.

3.3.8 Sesame value chain employment

The assessment results of surveyed sesame *woredas* indicate that sesame production requires a huge amount of labour. Among the activities identified as being most labour-intense include: land clearing, cultivation, planting, weeding, harvesting, threshing and packing. During post-harvest handling, there are also a number of other activities at a local level such as cleaning, sorting and grading, loading/unloading and processing that require labour.

A large number of households and their family members are involved in sesame production across the study areas of the two regions. The estimated total number of sesame producers is 133,144 households, with 665,720 family members directly involved in sesame production (as shown in Table 16 above). According to a June 2020 Sesame Business Network[8] assessment, production is almost fully labour dependent.

Smallholder producers hired labour for 60% of their field operations, and covered the remaining 40% with family labour. Large-scale farmers in contrast are fully dependent on hired labour for farm activities except for ploughing, for which they used tractors.

In addition, the subsector creates seasonal job opportunities for large number of migrant labourers, pulled in mostly from different parts of Amhara and Tigray regions. Estimates of various studies[9] indicate the number of these seasonal labourers absorbed by the sesame farm operations of the two regions is between 500,000 and 600,000. These seasonal labourers on average cross a peak season of 40-45 days and cover 75% of the workload of the areas. These are mostly adult males and youths. From these estimated number of seasonal migrant labourers working with wage employment, less than 1% of labour constitutes the children.[10]

In these areas, the contract between labourers and employers was based on verbal agreements. Mostly, while employers provided basic food and shelter in addition to daily wages to those working on farms, processing labourers during aggregation and export are paid wages only. As most of sesame farm clusters in the areas are located in the arid lowland, where temperatures can exceed 45 °C, labourers were allowed to rest when the daily temperature is too high, but were not provided any facilities that might have helped resist the heat.

[8] Sesame Business Network newsletter dated 23 April 2020
[9] Sesame Business Network Reports (2014, 2016)
[10] Consultant note: This is guessed by the key informant interview and focus group discussion participants; therefore, it might be inflated as there is no recorded data/evidence

With regard to child labour, smallholder farmers use family labour, including children, during critical peak season farming activities. As sesame has a short planting and harvesting time window, most farmers plant within a span of two to three weeks, which results in a critical shortage of labour for planting, weeding, and harvesting. In line with the Sesame Business Network findings mentioned above, the focus group participants reported that about 40% of the sesame production activities of the smallholder farmers were covered by family, including child, labour.

According to the focus group discussions, the smallholder farmers usually do not employ migrant child labour, assuming that they would not have skill in sesame production. When children are used, in most cases, children working on a family plot do not drop out of school, and instead work after they finish classes. There are, however, times when the children completely drop out of school for a while, normally about a month in one school year. This does not mean that the children totally drop out of school, but resume studying after harvest.

Of all the inputs, labour has the highest demand elasticity, followed by sesame seed, pesticides/herbicides, and fertiliser accordingly for sesame production efficiency. Therefore, improvement of production efficiency requires availability of enough labour particularly during harvesting.[11]

The ILO estimates show that Ethiopia is a sub-Saharan African country where the participation rate of children in economic activities is very high. The structure and level of technology in production could be an important factor contributing to the increased supply of child labour. An ILO (1997) study shows that the higher the share of agriculture in the GDP, the higher the incidence of child labour.

In the study areas, commercial farmers generally use hired adult labour, but when there is a shortage, they may accept children from the age of 12. It is important to bear in mind that the preference for adults' labour rather than child labour does not emanate from a concern and awareness of child rights. Rather it stems from a desire for strong adult labour, which is believed to perform better in sesame production activities. In general, 300-500 local children are estimated to participate in big commercial farms when there is a serious shortage of labour.

According to a 2010 study by the Ethiopian Ministry of Labour and Social Affairs (MOLSA), tens of thousands of poor children are trafficked each year by individuals who promise education and better life in town. Most of this child trafficking takes place within the country. Internal trafficking in Ethiopia mainly focuses on very young children.

Young girls are often trafficked for sexual exploitation and young boys for weaving, farming and cattle herding. Many boys are forced to weave traditional clothes for more than ten hours a day. They are supplied with an insufficient amount of food. If they cannot perform their job, they will be abandoned and will have to start life on the street. Other significant types of work that trafficked children are engaged in include *shisha* preparation, petty street trading and waiting tables.

Risk factors for trafficking included a combination of push and pull factors. Significant pull factors include a high demand for labour in urban areas, a good seasonal wage rate and the desire for better paid work. Push factors included poverty, political instability, economic problems, agents and relatives, and gender discrimination.

[11] Findings on the study done on the allocative and economic efficiency on the sesame production in Ethiopia

Socio-cultural factors were said to be particularly significant push factors. These include child marriage, lack of access to social services, limited access to education, especially for girls, limited parental education, family discord, and dissatisfaction with traditional ways of life. In addition, the need to support families, pregnancy outside of marriage and associated stigma, leaving school at an early age, and large family size were identified as vulnerability factors which push women and children to leave their home and migrate to the study area clusters. Economic push factors include poverty and the death of one or both parents.

Further risk factors identified, particularly in external trafficking and migration, were weakly enforced laws, inconsistent prosecution, inconsistent application of public policy, strong organised crime networks, lack of coordination between Ethiopian authorities as well as between Ethiopian authorities and those abroad, and the government's failure to implement international instruments to combat human trafficking.

Child trafficking is one of the most profitable crimes for traffickers and exploiters. In general, most of the children were transported from their origin to their destination place by people whom they know very well such as their own parents, neighbours, relatives, truck drivers, agents, and friends of their parents.

This assessment found that awareness of human trafficking and its associated risk factors is low in Ethiopia. Therefore, initiatives are needed to raise public awareness. General information about and risk factors for human trafficking should be provided. In particular, it is important for people to understand the risks associated with migration and the close association between migration and trafficking.[12]

Although the trafficking of children is very common, particularly in Metema *woreda*, the involvement of trafficked and migrant children in sesame agricultural labour was not reported to be high by focus group discussion and key informant interviews.

In contrast, information obtained from focus group discussions and key informant interviews of this study indicates that in the smallholder supply chain, most of the aggregators and processors use adult labour. Since some of the processes, such as bulking, require strong physical fitness, men dominate the work. 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 often based on quantity. Recently, the average payment is usually close to 80–100 ETB per day.

Figure 7: Children involved in sesame crop weeding and goat herding in Quara *woreda*

[12] IOM, 2017. National Labour Migration Assessment Report

The daily wage rate for farm labourers, however, varies by place and type of work. For example, while adult labour costs nearly 100 ETB per day in Kafta Humera, the daily rate in Metema areas is low, reaching only 60 ETB per day.

As stated above, child labour is not common at commercial farms. But the hired children, who are normally aged between 12 and 17, are usually paid half what adults are paid. The farm also often provides basic food and shelter, as labourers come from other areas. Bonded labour is not common as the contracted labour is usually done at individual level. The daily wage paid by the farms is almost equal to other major sectors, such as construction.

There is no medical scheme, nor any signed contract between the farms and the labourers. According to the key informant interviews, this a significant problem because migrant children do not have sufficient income and are not well fed, so they often fall ill easily and do not get appropriate medical treatment.

Sometimes, community members contribute money to the child labourers, but the children still do not seek treatment and instead spend it on their immediate needs like food. They further stated that malaria is present in north west Ethiopia, this increases the rate of sickness among the migrant labourers, including children. This is in line with the following findings:

Between 2013 and 2017, about 3,485,646 malaria cases were treated in the Amhara region. Of the total malaria cases, 41.7% were reported from the three lowland districts of Metema, West Armacho, and Quara, of the West Gondar zone. The highest annual parasite incidence for malaria was found in West Armacho district. The majority of malaria cases were found in labourers of over 14 years of age.[13]

A major source and starting point of labour migration for these sesame clusters is the high- and mid-land areas of the Amhara and Tigray regions. Estimates from focus group discussion and key informant interviews indicated that over 90% of the labour for sesame farm activities come from these areas.

Given the shortage of labour on the farming sites, migrating labourers do not compete with locals, and there have not been major problems between migrating labourers and local communities.

The children that work in the study regions tend to come from highland parts of Ethiopia as well as Eritrea. According to the key informant interviews, the migrant children usually end up in street life, prostitution, waiting tables and working as street traders, finding it difficult to find a way to get back.

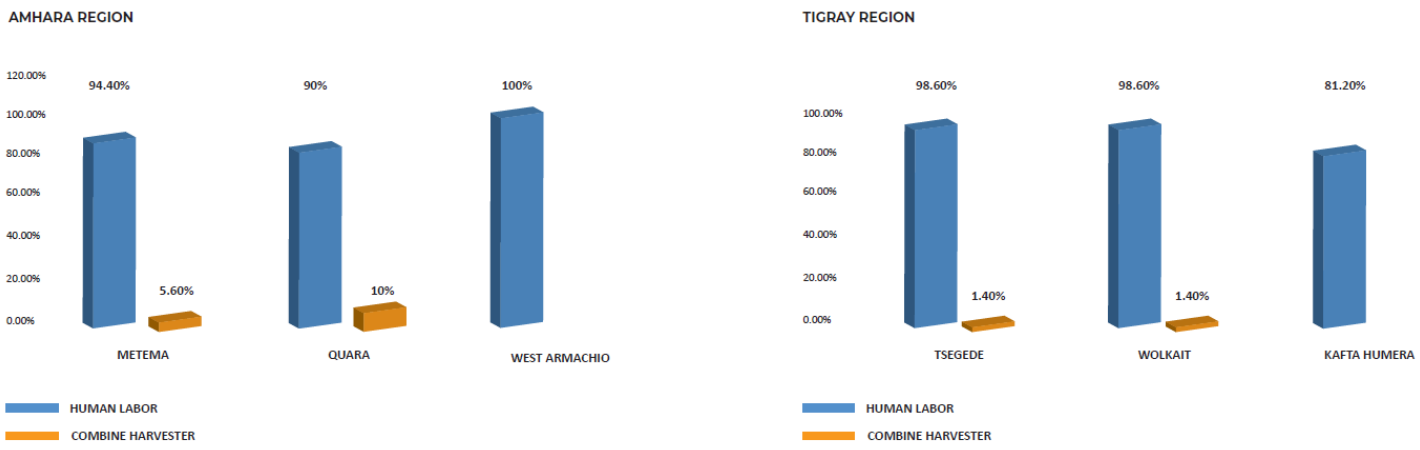
3.4. Labour Market Dynamics in the Sesame Value Chain

3.4.1. Labour supply and demand

The sesame production system in the study areas (as well as across Ethiopia) is dominated by traditional methods, where small-scale farmers and commercial producers use traditional oxen, donkey or camel-driven ploughs. This is labour intensive and incurs a high cost of production. According to the household survey, as shown in Figure 8 below, the major method of sesame harvesting is using human labour, while very few use combine harvesters.

[13] Wosenseged Lemma, 2020. Impact of high malaria incidence in seasonal migrant and permanent adult male laborers in mechanized agricultural farms in Metema-Humera Lowlands on Malaria Elimination Program in Ethiopia

Figure 8: Comparison of sesame harvesting methods in the study areas



This traditional production system is usually attributed to the lack of affordable, innovative and improved planting and harvesting technologies.

Moreover, the agricultural research institutes pay less attention to sesame production compared to other crops, although this is starting to change in lowland areas in, for example, Humera, Gondar, and Pawe.

The result is that in the study areas in north west Ethiopia, where sesame production is very high and farmed by both commercial and small-scale farmers, the demand of labour by both the small-scale farmers and commercial farmers is very high and fiercely competitive.

This is despite the large numbers of seasonal workers who arrive between the end of June to October. Though there is no recorded data on the labour supply, the key informants estimated that between 500,000 to 600,000 labourers arrive in the study areas during the sesame production season in search for employment.

The key informant interviews and focus group participants remarked that the serious labour shortage means all sesame producers compete for available labour from a disorganised, haphazard labour market. The focus group participants also stated that being late in production, harvesting and post-harvesting of sesame product has a high influence or loss in sesame production and productivity.

The major factors deterring labour flow to north west Ethiopia include political instability, mass clashes and ethnic-based violence, rife disease (particularly malaria), low social amenities available for labourers, an inhospitable temperature in the area, as well as locust swarming. Most recently, the COVID-19 pandemic has negatively affected the supply of labour and changed sesame producers' production plans.

One focus group participant said: *"This year labour supply is extremely low due to the emerging of COVID-19 pandemic in Ethiopia. We doubt the flow of labour will get better unless the pandemic is controlled. In general, the fear of the COVID-19 pandemic and the State of Emergency condition in the country has depressed the free movement of labour as seasonal labour migrants fear that they could*

become infected with COVID and transmit it to their families after they return. Over all, production of sesame is very difficult without sufficient labour supply, since sesame is a labour-intensive crop that cannot be managed using only household labour. The mechanisation of sesame farming is in its infancy and is expensive compared to the return on sesame. Consequently, large numbers of sesame producers have changed their plan and cultivated sorghum, soya beans and other crops, though it is not profitable as compared to sesame."

According to key informant interviews in West Gondar zone (Metema, Quara and West Armacho), the majority of sesame producers (about 70%) have shifted their farmlands to other crops, such as sorghum and soya beans. This shift of production pattern has been promoted and directed by the *woreda* government offices, due to the expectation of sluggish and lower labour supply because of COVID-19, particularly during weeding and harvesting season.

3.4.2. Mapping of origin and destination of migrant labour to sesame clusters

The sesame producers in north west Ethiopia's Amhara and Tigray regions are dependent on migrant labours. The commercial farms are fully dependent on hired labour, except ploughing and threshing operations, while the small-scale sesame producers, according to the focus group discussions in both Tigray and Amhara regions, hire 50% to 60% of migrant labour for their sesame production activities. The remaining 40% to 50% of labour required is usually covered by households or family labours.

According to the key informant interviews, the average stay period of seasonal labourers in sesame production areas is estimated to be about 50 days. It is understood that there are mainly three types of migrant/seasonal labourers*:*

- **Permanent** locally known as *Salug.* These labourers travel to the region and then settle.
- **Seasonal labourers** who are mainly linked or informally bonded to investors (regular labourers) and
- **Those who move around in sesame farms to look for jobs**. The focus group discussants reported that in Metema, West Armacho, and Quara of Amhara, and Kafta Humera from the Tigray region are the typical migrant labour dependent *woredas*.

Figure 9: Labour market – young people waiting for employers in Tsegede in Tigray

Note: These migrant girls and boys originated from highland zones Amhara and Tigray regions and waited for employers who hired them on sesame farm activities (weeding during this field visit).

Annually, mechanised agriculture for the commercial production of sesame, cotton and sorghum of north west Ethiopian lowlands attracts a huge number of seasonal labourers to of Metema - Humura

areas of Amhara and Tigray regional states of Ethiopia. According to various sources, every year, 500,000 to 600,000 migrant labourers arrive at these destinations -- mainly from the highland areas of the two regions.

The same source estimates that over 200,000 of these seasonal migrant labourers come to Kafta-Humera and surrounding lowlands in Tigray region, while around 200,000 to 300,000 arrive in the West Gondar zones (Metema, Quara and West Armacho) to participate in the weeding and harvesting of crops, mainly sesame. The proportion and the share of these seasonal labourers by region and zone indicated in the Table 10 below.

According to the key informant interview and focus group discussions, the origin of the seasonal migrant labourers is mostly other parts of the Amhara and Tigray regions, but a few come from the SNNPR and Oromia regions. The months of July, for weeding, and September, for harvesting, are the biggest months for seasonal labourers.

The reason most of these labourers mostly come from highland and midland *woredas* is that their crop production pattern or production calendar is different from the lowland sesame production areas. In most cases, the seasonal migrant labourers finish their major agricultural tasks at home before the month of June. The remaining activities that need to be performed in the month after June in their absence can be managed with the rest of the household members.

Most seasonal labourers arrive from the nearest highland zone. According to the key informant interviews, this is attributed to the fact that people from the nearest geographic location are more familiar with the area, and perhaps some acquaintance with some farm owners or agents in the area.

In terms of regional distribution, about 50% of migrant labour in Tigray originated from the highland zones of Amhara region. According to estimates from offices and experts of both regions, each season migrants come from the following parts of Amhara region: North Gonder, 25%, 10% from each of South Gonder and Awi zone, and 5% from Waghimra zone.

The rest originated from within the Tigray region: 25% from Eastern and Central zone, 15% from Southern, and 10% from Northern zones.

The majority of migrant labourers who arrive at the sesame cluster of Amhara region were said to be from the highland areas of North Gonder (35%), while 25% were from South Gonder, 20% from Central, 10% from East & west Gojam, 8 % from Awi zones respectively and about 2% from SNNPR and Oromia region.

The main destination for almost all migrant labourers is the lowland study areas, specifically the towns and villages of: Gendawuha, Metema Yohannis, Quara, MidreGenet (Abdurafi), Abrajira, Mykadra, Humera, Dansha, Beaker, Adebay and Rawiyan. The migrant labourers who were not able to return to their home after harvest season in December each year temporarily reside in towns and villages. They move between the big farms across the lowlands of both Amhara and Tigray regions seeking off-season agricultural work.

These labourers who failed to return to their families in the highlands for different reasons and become temporary or permanent resident labourers in these areas move extensively between towns, farms within the two regions on both sides of the border towns of Sudan, such as Gedaref, and Ethiopia.

According to an estimate made by the Bureau of Labour and Youth Affairs in West Gondar and West Tigray, about 80,000 migrant labourers cross the border in north west Ethiopia to find work in the neighbouring areas of Sudan, specifically in Gedaref State (Gallabat areas) and Kassala, where labourers are in high demanded for various farm activities.

These labourers who cross to Sudan mostly work in sorghum harvesting until the agricultural activities in the Ethiopian lowlands resume, mostly in May. Some labourers, however, continue working in Sudan even during rainy July and August sesame weeding time.

Overall, the characteristics of seasonal labourers arriving to work in the sesame production activities (particularly weeding and harvesting) are part of the active working age population. Informant interviews indicated about 85% of the workers are aged between 25 and 35.[14]

Most are landless: the poor farmers who cultivate land at their point of origin tended to do so based on sharecropping arrangements and/or rented land. Hence, according to the key informant, they come to sesame production areas to augment their income in their efforts to sustain their livelihoods.

According to a conservative estimate by a key informant, a migrant labourer on average earns 4,500 ETB per season. This is a low figure, considering that they work in tiresome and hard conditions and are vulnerable to diseases like malaria, kala-azar and sexually transmitted diseases including HIV/AIDS. However, this amount was said to make a big difference in their effort to support their livelihoods.

Employment opportunities and information are mostly transmitted through social networks. Interested individuals to migrate and work seek information from friends and neighbours who have previous experience or friends or relatives settled as long-term employees of the commercial areas. Some were employed based on previous contact. In most cases there is no contract agreement among employees and employers. It is simply verbal agreement. Migrant labourers wait to be picked up by employers in a certain place.

Informal networks worked best because farmers needed labourers for highly time sensitive activities like weeding and harvesting, and needed to trust the labourers. Similarly, labourers need to know if they can trust the farmers with regard to payment, shelter, and food. Occasionally, commercial farmers broadcast through television and radio about the number of labourers required and the type of activity in sesame production, but this is rare.

In some cases, groups of adult labourers from a certain region looked for jobs by moving farm to farm and sometimes clashes arise with other groups. According to a key informant, one of the main reasons for clashes is on the negotiation of labour price. For instance, if one group offers a lower price than another group offered, clashes arises among the two groups, with the latter claiming they are offering to work for a lower price with the intention of forcing them out of the labour market. Consequently, there are killings reported in many instances.

[14] Note: In most cases, one household member from each family migrates seasonally to work in the sesame farm areas. The rest of household members mostly remained in their home. A study done by Kibrom (2019) shows the majority of the households (80%) in the study area sent only one family member towards the lowland large-scale commercial agriculture. Despite the fact that there are families who send a maximum of four family members towards the commercial agricultural production areas, but the percentage is very low which is estimated to be only 2% (Source: *Rural-Rural Migration and Its impact to Crop Production, Commercialization and Asset Possession in North Gondar, North Western Ethiopia*).

According to the key informant and focus group discussions, commercial farmers sometimes draw in labourers from the northern highlands who traditionally work on dairy farms. These labourers hope that the big commercial farms will provide decent wage and a fair deal. When this fails to materialise, and employers default on payment there is no recourse for the labourers. They do not have the knowledge to complain to the appropriate office, and/or the lack of formal contract means they cannot seek external support. As a result of this conflict and sometimes violence arises as labourers attempt to seek justice.

In most cases, according to key informant interviews, the labour price varies a lot from *woreda* to *woreda* and *kebele* to *kebele*. Nonetheless, in all cases, the labourers do not have bargaining power.

Even though seasonal migrant labourers in sesame production activities employment process is mostly based on social networks without the involvement of traffickers, there is high involvement of traffickers for international migrants. According to a study done in Metema[15], the recruitment process mainly follows these steps. Agents or traffickers use different individuals and methods to recruit victims. Some agents use family connections and social relations to procure victims and get their consent to migrate. Some other traffickers also use the helps of *leqamies*[16] (local brokers) to get the victims. The *leqamies* bring different potential migrants from their surroundings to a trafficker who operates in the nearby town. This is done in a way that the brokers pay the *leqamies* for the service they have provided.

Victims are trafficked from their local area to Metema town by land. As soon as they arrive in the town a local broker, or *shekava*, in Metema town, who is hired by the traffickers will collect them directly from the bus station and take them to the place prepared for them to stay until departing for Sudan. To avoid risk from police inspection, places used to keep migrants are often located in the outskirts of Metema town, usually in the rural villages. There are also some traffickers who use hotel rooms and rented houses in the town to keep labourers until they travel to Khartoum.

Even before crossing the border and beginning the worst of the journey through the desert to Sudan, these migrants are lured into different inhumane situations and have their rights violated by the traffickers and their agents. Some migrants were ripped of their property, left to hunger and thirst, others raped, beaten to death, insulted and immorally treated by their handlers. Another of the extreme challenges faced by the victims in Metema town is being forced to make additional payments on top of their initial agreement.

Consequently, to pay the additional sum and get to Sudan, many victims of trafficking are trapped in debt bondage and prostitution. In order to make the additional payment many migrants either turn to prostitution in Metema town, or engage in a debt bondage agreement with the traffickers. The primary aim of these girls and women was, in most cases, to enter Sudan via Metema, not to work as prostitutes in Metema town. However, due to profit-seeking traffickers, migrants are turned into prostitutes.

3.4.3. Child labour participation (formal and informal)

[15] Hailemichael Nigusu Hagose (2014) Causes and Consequences of Human Trafficking: A Case Study in Metema Town, AAU, MSc thesis

[16] *Leqamies* are local brokers who recruit and gather different potential migrants from the nearby towns and rural villages.

Child labour refers to any form of economic activity or non-economic activity undertaken in exploitative conditions that is likely to harm children's "physical, mental, spiritual, moral, or social development, by restricting their participation in activities important to their development such as play, education or vocational training, and lowering their capacity to benefit from the instruction received."[17] This ILO definition contrasts with types of activity that fall into child work more generally, which include those engaged in light work for an accepted duration of time or in work excluded from the list of prohibited work.

According to recent estimates by the International Labour Organization, child labour affected more than 150 million children around the world in 2016, mostly in the developing countries and primarily in agricultural activities (ILO 2017).

Different literature suggests that poverty is the main cause of child labour. The ILO study further identifies cultural values as the other main cause of child labour in Ethiopia. Children, particularly in rural areas, are considered assets to generate income (ILO, 1995). Fluctuations in the income-generating capability of rural households can therefore affect the likelihood that children engage in work activities.

Cherishing childhood and shunning child labour is thought of as a luxury good, something that can only be afforded after other needs are met (Basu and Van, 1998). Therefore, higher income should reduce child labour: as income rises, families are able to purchase most of their necessities without having to resort to the revenue generated by the children.

The key hypothesis behind this mechanism is that parents would prefer to send their children to school, and to minimise the use of child labour. However, due to their income constraints, they cannot afford to express their preference if income is below a given threshold (International Coca Initiative, 2020). This "poverty hypothesis" implies that child work will be abandoned as soon as the household income rises sufficiently (Basu and Van, 1998).

However, this assumption does not apply equally to all societies. For instance, the focus group discussions and key informant interview findings in the study areas of Ethiopia indicate that there is not a strict or a habitual relationship between income and child labour. In fact, there is sometimes an increasing amount of child labour used from the higher income households, as they acquire more land (often through renting) for agriculture and require more labour, including child labour, to finish the tasks on time.

Another factor impacting the use of child labour that came to light through the focus group discussions, is family size. That is, larger families tend to use more child labour than smaller ones. This is due to the need for higher incomes requirements of larger households. One of the focus group discussants questioned said, *"How can a family head with large size (in our case more than six) sustain the daily needs of the family if child labour participation in any type of agricultural activities is not allowed."*

Children in Ethiopia are engaged in the worst form of child labour including forced labour in domestic work and performing dangerous tasks in agriculture. According to the results of a 2015 national child labour survey almost 16 million children from the ages of 5 to 17 were engaged in child labour.

[17] ILO, C138/73 Labor Proc. No.377/2003

As indicated in Table 21, more than nine million children aged between 5 and 17 were engaged in child labour, consisting of 24.2% of the total children. The majority of child labour was found in Oromia, Amhara, Afar, and the Southern Nations, Nationalities and Peoples regions.

The regions of Amhara and Afar have the highest prevalence rate of child labour with 33.3 % and 31.7% respectively. The Tigray region has the fifth highest prevalence of child labour.

This shows how the intensity of child labour of children of working age varies across Ethiopia. Somali (63.9%), Afar (31.7%), Tigray (52.8%), and Amhara (48.9%) regions have, in respective order, the highest proportion of child labour of working age children.

This finding is in contrast with (Babiker, 2002), which states that the demand for child labour is found only rarely in pastoralist regions. This study argues that this is because looking after cattle can only be performed by adults as the job involves not only feeding cattle but also ensuring their security against theft and confiscation by other tribes.[18] Nevertheless, it seems that the author focused on the activity of herding cattle only to reach this conclusion.

The results from this assessment are consistent with the findings from the ILO. The ILO estimates show that Ethiopia is a sub-Saharan African country where the participation rate of children in economic activities is very high[19] . A 1997 ILO study shows that the higher the share of agriculture in the GDP, the higher the incidence of child labour. A lack of technology in production could be an important factor contributing to the increased use of child labour.

Table 21: No and percentage of children in child labour, working children not in child labour by region

Region	Child Labour				
	Number	% of total children	% of working children	No of working children	Total children
Tigray	580,909	26.8	52.8	1,100,877	2,168,356
Amhara	2,710,345	33.3	48.9	5,544,948	8,658,915
Afar	225,848	31.7	61.1	369,606	712,326
Oromiya	4,186,298	27.7	51.0	8,209,467	15,091,991
Somali	293,563	28.1	63.9	459,600	1,045,743
Ben/ Gumuz	89,737	21.1	41.8	214,750	425,966
SNNPR	896,899	11.7	30.0	2,985,187	7,648,683
Gambella	8,642	5.1	20.2	42,742	170,572
Harari	8,364	8.7	29.4	28,451	96,179
Addis Ababa	41,893	3.7	60.3	69,450	1,133,275
DireDawa	8,913	4.9	45.4	19,612	180,731
Total	**9,051,411**	**24.2**	**47.5**	**19,044,690**	**37,332,737**

Source: Ethiopia National Child Labour Survey, 2015 (CSO/ILO)

[18] Babiker, Mustafa (2002). Resource Alienation, Militarisation and Development Case Studies from East African Drylands Proceedings of the Regional Workshop on Est African Drylands (Khartoum and Addis Ababa)

[19] The participation rate of children between the age of 10 and 14 in economic activities in the world in 1995 was around 13% while the corresponding figure for Ethiopia was more than 42 %. And although there is a declining trend in the incidence of child labour globally, by the year 2010 there were still more than 40 % of children between the age of 10 and 14 years participating in economic activities.

According to the Ethiopia National Child Labour Survey (2015), the prevalence of child labour increases with age: 22 % for children aged between five and 17 years, 32.5 % for those aged 12 to 13 years, and 34.3 % for those aged 14 to 17 years old. The rate of hazardous work for children aged 5 to 17 years old was 23.3 %, which is made up of 28 % boys compared to 18.2 % girls.

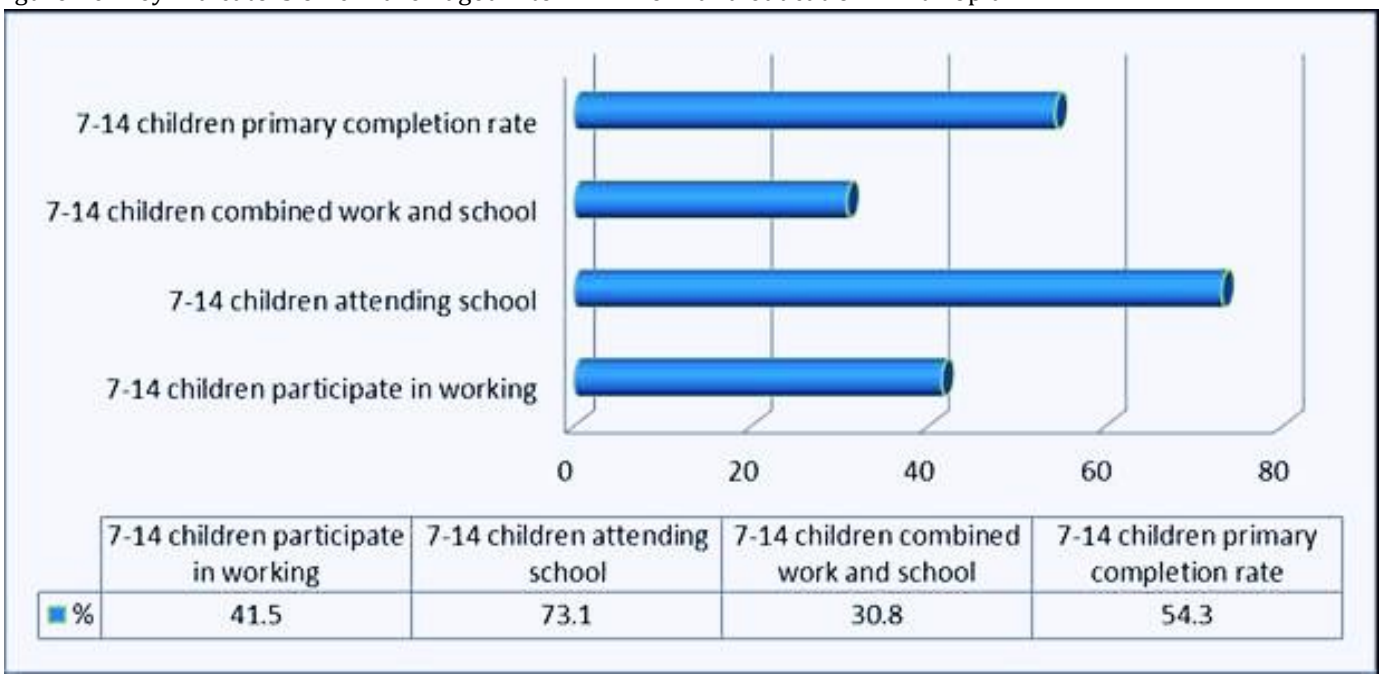
In another study[20], the participation rates for children between the age of seven and 10 were 55% and 60 % for boys and girls respectively. This rate increased to 62% and 76% respectively for the 11 to 14 age group.

As indicated in Figure 10 below, about 31 % of children aged between 7 and 14 combine work and school, while 73.1% attend school and 54.3% completed primary school. Meanwhile, 41.5%, participate in child labour with no schooling.

This finding clearly shows that education has a role in reducing child labour. Schooling is one of the crucial components that eliminate child work. This is due to time constraints: since children who attend school spend a major portion of time in schooling activities they have less time for work.

Children who do not attend school have ample time to engage in work and are expected to support their families by taking part in economic activities. Having no access to a school, having low quality education, and parents' placing low value on education were also factors pushing children into work.[21]

Figure 10: Key indicators on children aged 7 to 14 in work and education in Ethiopia



	7-14 children participate in working	7-14 children attending school	7-14 children combined work and school	7-14 children primary completion rate
%	41.5	73.1	30.8	54.3

Source: CSA, 2018 quoted from UNESCO Institute for Statistics, 2019 and International Labor Organization's analysis of Statistics from Socio-Economic Survey, 2015-2016

[20] Admassie, Assefa (2000) The incidence of child labour in Africa with empirical evidence from rural Ethiopia, ZEF Discussion Papers on Development Policy, No. 32, University of Bonn, Center for Development Research (ZEF), Bonn

[21] Sadaiqui F. Child Labour: Issues Cause and Intervention: Washington DC: World Bank: 1995

3.4.4 Working conditions of child labour in sesame production in the study areas

The level of child labour – and the extent to which it was exploitative – varied widely within the study areas, depending on the working environment of the particular sesame cluster and the level of children's involvement in the various activities at different stage of production and their respective characteristics.

In general, children are at greater risk from workplace harm than adults, because their minds and bodies are still developing.

In addition, those engaged in child labour are paid half the wage of an adult labour, despite the fact that they work in equal hours. The justification for this is that the children produce less than adult labourers. However, according to the key informant, even if some children produce nearly as much as the adult, they still get paid the child rate.

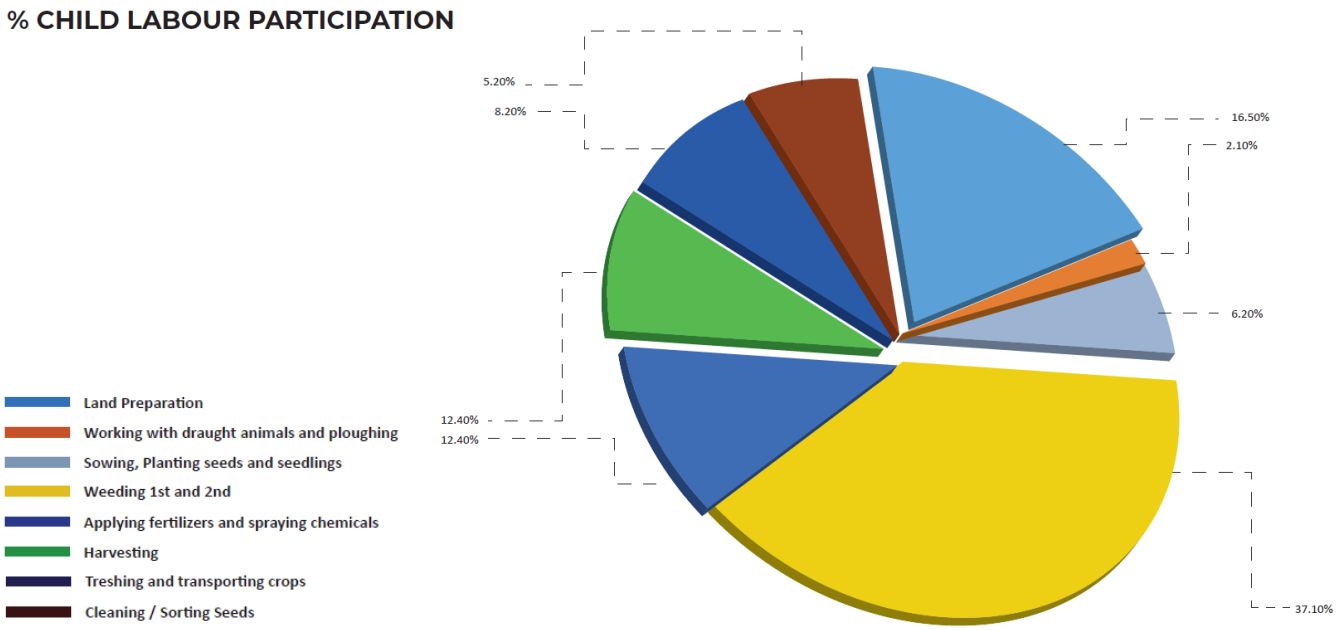
According to information from focus group discussions and key informant interviews, sesame production in Tigray and Amhara regions comprises a wide range of activities, and children's tasks are usually quite diverse and seasonal.

Children are involved in every stage of sesame production, from land preparation, planting and weeding to harvesting and processing. The work that children perform in sesame production goes unacknowledged and unpaid for many reasons. It is thought that children should help their parents, relatives or neighbours without payment.

In these arid and semi-arid sesame growing cluster areas of Tigray and Amhara regions, the incidence of health hazards and vulnerability to risks during the peak season of sesame production can be very high, depending on the specific farming environment. Potentially hazardous tasks and conditions include exposure to extreme environmental conditions, with temperatures of up to 50%; exposure to agrochemicals; long working hours in the fields; exposure to various extreme weather conditions; and physically tiring or repetitive activities. Likewise, during land preparation, ploughing and working with draught (working) animals they are exposed to sharp tools and huge and dangerous farm equipment and machinery, as well as injuries from animals.

Figure 11: List of children's tasks in sesame production in the study areas[22]

[22] Total number of children engaged in sesame production process is 622



Source: Survey Result, 2020

As indicated in Figure 11 above, according to the focus group discussions children are mostly involved in sesame production activities such as weeding in all surveyed *woredas*. 37.1% of the children were involved in this activity. Ploughing was the activity least likely to be done by children. The worst thing is that about 12.4% of the children are found to be involved in applying fertilisers and spraying agricultural chemicals, which has a harmful effect on their health.

According to key informant interviews, in contrast to other *woredas*, children in Metema participated in a wide range of sesame production agricultural activities, such as weeding, harvesting, threshing, storage, and transporting sesame crop to the market. However, in this *woreda* the hours that children work compared to adult family member is short. The average working hours are about four hours per day.

The community members sometimes involve children in harder work if their physical appearance seems older, if they are tall, for instance, or appear strong. It was found such children were more likely to migrate with the aim of selling their labour in sesame production activities. This is probably due to the fact that employers from both smallholder farms and commercial farms select labourers based on observing physical strength and the ability to resist harsh environments, thus they had a better chance of being employed. Sesame weeding and harvesting needs some skill to earn a reasonable income for short period of time, so previous experience also plays a part in whether these children get jobs.

However, there are also children who migrated simply due to poverty, and/or death or separation of parents. Such desperate children often do not track down employment in sesame production activities. In most cases, they ended up in street life.

Figure 12: Children waiting for employers for sesame field operation W/Armacho *woreda*, Amhara region

The children focus group discussion, which included participants aged between 10 and 17 years in West Gondar zone (West Armacho, Metema and Quara), explained that they are highly involved in weeding activities and sesame production. Focus group discussions indicated that some children from families who do not use oxen for farming must guide the donkeys to be used as traction.

According to the focus group discussions, this task is very tiring for children because it requires long hours and sometimes it is difficult to guide the ploughing donkeys without training. The study considered this as an example of the WFCL observed in the West Gondar lowland areas. Children also involved in ploughing with oxen, which is risky.

Figure 13: A child ploughs farmland with oxen showing involvement in risky adult job[23]

According to the key informant interviews and focus group discussions, child labour was extensively used in weeding and harvesting activities, particularly when there was a shortage of migrant labour supply. For instance, in the years between 2016 and 2018, the labour supply was critically low due to security problems, specifically ethnic-based conflict and political instability.

Currently the labour supply is extremely low due to the COVID-19 pandemic. This has brought a significant loss in sesame production. To curb this difficult situation, the small-scale sesame producers have used child labour intensively. This is not efficient, as it needs a huge amount of adult labour to finish tasks on time. In addition, traditional neighbourhood labour sharing practices (the so-called *Debo*) were practiced to overcome labour shortages. This aggravates the child labour situation, as

[23] The age of children participating in ploughing of sesame farm is usually between 14-17

when participating in these labour-sharing schemes, they are forced to work in equal conditions with adult labourers, without special treatment.

Commercial farms did not tend to participate in these labour-sharing practices: sesame weeding and harvesting is obtained through hired daily labour, hired casual labour, and contract labour.

The findings of this study reveal that child labour is common in the area, but it is more extensive in poor households. Children from poor households engage both in paid and unpaid labour to support their families' livelihood. Sometimes they were involved in the WFCL to earn income to help their family members trapped avoid severe household food insecurity. The main activities that children were involved in were contraband trade, such as smuggling items like perfume, clothes, soap and illegal drugs from the Sudanese city Port Sudan, herding livestock for other households, and agricultural activities -- particularly in weeding and harvesting. Some children even migrate to Sudan to work there, despite the danger. According to key informants, many girls faced sexual coercion and rape. Some girls exposed to this sexual exploitation evolve into prostitution. Due to this stress, many children fall victim to addictions of many kinds.

According to the key informant interviews, the majority of children aged between 5 and 17 are involved in the agricultural and domestic activities. The key informant stated, *"The number of children aged between 5 and 17 make up a high proportion of the population; therefore, not involving these children in either economic or non-economic activities means that there is labour wastage. If they do not participate, who can fill their belly? Therefore, it is logical to involve them according to their abilities."*

The data from the study areas in the Amhara region back up the assertion that much of the population is relatively youthful, as shown in Figure 2. The total population of children between the ages of five and 17 is 40,430, 47,447, and 14,726 for Metema, Quara and West Armacho in respective orders. That means 30% of the population of the region is between five and 17.

Table 22: Share of children aged between 5 and 17 in each woreda

Woreda	Total Population	% of Children (5 to 17 age)
Metema	129,659	31.2
Quara	139,053	34.1
West Armacho	14,725	28.0

Of the types of labour done by children, key informants and focus group said keeping livestock for other household members was said to be 'safe' compared to others tasks.

There are two common payment modalities for keeping cattle. The first one is known as '*Erbegna,*' which means keeping cattle in return for milk. This means, for instance, if a child keeps five dairy cows for a successive five days, the sixth day's milk of all the cows is considered as labour payment for his/her services.

The second form of payment means that if a child herds goats, he/she receives 30 ETB in return for their labour per goat per month. Usually, the children are employed for three months.

However, when children are working outside of their families, they face various difficulties, such as late payments, payment refusal, and a lacks of sufficient meals and medical treatment.

Children are also engaged in agricultural activities, particularly in peak harvesting months of sesame production. The child focus group discussion made up of children who were involved in this type of paid labour stated,

"In summer season, our labour is highly demanded for weeding activities and we work for long hours [i.e. starting from 7:00am – 6:00pm hours for about 11 hours per day]. This time is life threatening to us. Some of us are bitten by snakes, attacked by insects locally known as 'Gint', falling down from trees, and illness. Besides, we faced skin irritations and feeling dizzy because of our involvement in spraying agro-chemicals [i.e. pesticides and herbicides] on farms without safety precautions. All these conditions risked our health."

Figure 14: Children boys and girls aged between 12 and 16 working in sesame crop weeding activities in different farms

The engagement of children in child labour has also influenced the attendance of children in education. The child focus group discussion participants noted that on average a child from poor households miss class for about a month every school year, while the better off households' children attend regularly and perform better academically.

Girls are less involved in the worst forms of child labour than boys. However, girls work in domestic chores for longer hours and face sexual exploitation.

Over the past five years, there has been an upward trend in the use of child labour. According to key informant interviews, the main possible explanation for this scenario is that families' economic life is worsening (they are increasingly impoverished) and consequently, these poor households resort to forcing their children to work for other households to augment their meagre income for survival.

In alignment with this result, Pankhurst, et.al (2015) found that children from poorer and socially marginalised households and those facing shocks are much more likely to spend a greater amount of time working, though most also attend school. Some of these children face grave physical and social risks, and some tolerate unacceptable levels of work and time pressure, particularly those in poor rural households.[24]

24 Pankhurst et al (2015); Morrow and Boyden (2018)
http://younglives.org.uk/sites/www.younglives.org.uk/files/YLRespondingToChildrensWork A4-Jan18.-

As indicated in Table 22 below, the majority of respondents from all the study areas have family members involved in paid labour. Region wise, the Tigray region has a larger proportion of paid family labour compared with the Amhara region. This might be due to the fact there are more commercial farms in sesame production than in Amhara.

Table 23: Percentage of respondents by type of family labour

Employment Type	Amhara			Tigray		
	Metema (n=184)	Quara (n=123)	W/Armachio (n=36)	K/Humera (n=186)	Tsegede (n=152)	Wolkait (n=95)
Paid family labour	28	24	14	47	39	51
Not in labour force	22	8	25	29	15	20
Unpaid family labour	3	27	19	6	14	2
Unemployed family labour	47	41	52	18	32	27

Aside from poverty, another reason the focus group discussions cite as driving child labour is inflationary pressure. [25] Along with this, other pressures also fuel child labour.

Due to this, relevant government offices, particularly the Ministry of Women and Child Affairs, have tried to raise awareness among community members of the importance of sending children to school and of the importance child rights with the aim of reducing child labour.

However, it was revealed, the response was not as expected nor satisfactory. In fact, the participation of children in agriculture and domestic activities was considered an informal way of skill learning.

The children who acquire skills that are valued locally early are appreciated by the community members. The focus group discussion participants said, *"Any children who adapt skills beyond their age are appreciated by the community and those children are taken as role model to other children with limited skills."*

3.4.5. Alternative employment and self-employment by Age, Gender and Diversity (AGD) groups

The study explored whether there were safer alternatives within the WFCL by age, gender and diversity groups. While there are safer options to the current jobs that children are doing in, for example, handling, processing, transportation and logistics, warehousing or storage. However, currently, the number of children participating in these activities is negligible, and the participants did not believe these activities were appropriate or viable as realistic alternatives.

They instead suggested other economic activities that do not necessarily support the sesame value chain. According to the focus group discussion participants, the major potential employment opportunities that could improve the livelihoods of the households in such a way as to reduce the burden of the child labour are the following:

- Brick production
- Stones for flour-mills production

[25] The inflation rate in Ethiopia was recorded at 20 % in August of 2020. However, it climbed further in March 2020, to 22.6%. This was due to the pressure of food prices (which rose 26.9%). This was recorded the highest inflation rate since May 2012.

- Traditional food processing
- Poultry production
- Vegetable production
- Bakery production

3.5. Policy and Structural Challenges and Barriers to Safe Employment

Ethiopia, as a member of the United Nations, African Union, ILO and other international agencies, has signed several international conventions and laws related to child labour. Among the conventions ratified by Ethiopia and incorporated into its constitution is the protection of children from labour exploitation and their rights. The government has therefore committed to improving the plight of children in the country, especially with regard to their vulnerability to the WFCL. The US Department of Labor (2014) compiled a list of international conventions ratified by Ethiopia, as well as national laws that have been legislated in relation to child labour.

- ILO C138: Minimum Age Convention
- ILO C182: Worst Forms of Child Labor Convention
- UN CRC: Optional Protocol to the Convention on the Rights of the Child on the Sale of the Children, Child Prostitution and Child Pornography
- Palmero Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children

Ethiopia has also ratified the African Charter on the Rights and Welfare of the Child.

The key policies related to child labour include:

- The National Action Plan to Eliminate the Worst Forms of Child Labor (2016-2020)
- National Children's policy
- Education Policies
- UNDAF (2016-2020)
- The National Human Rights Action Plan II (2016-2020).
- The 1995 Ethiopian Constitution specifies that children should not be 'required nor permitted to perform work which may be hazardous or harmful to his or her education, health, or well-being'.[26]
- Ethiopia's 2003 Labour Proclamation prohibited the employment of children under the age of 14, whereas those aged between 14 and 18 were considered to be 'young workers' and the extent of their work should be regulated.[27] However, this labour proclamation has been replaced by No. 1156/2019[28] which is published on the Federal Negarit Gazette, on its issue dated 5th of September 2019. This Labour Proclamation has increased the age of the young workers from 14 to 15, but in no case it can exceed 18 years [Article 89 (1)][29]. The Proclamation

[26]Federal Democratic Republic of Ethiopia (1995): Article 36.1d.

[27] Federal Democratic Republic of Ethiopia (2004): Article 89.

[28] Benyam Tafesse, (2019) The Revised Proclamation is not a comprehensive revision of Ethiopian labour laws, which mostly remain the same. However, it has clarified certain ambiguous areas including termination on the grounds of tardiness. The new proclamation has now set a clear parameter to measure tardiness. Similarly to the old proclamation, the revised proclamation is still generic and is not sector specific. Zewdu Teshome (2020) also states a large majority of the provision of the Proclamation 377/2003 was directly transplanted to the new law verbatim. Although the Proclamation attempts to address some practical challenges encountered due to gaps in legislative drafting, the new law does not introduce a new conceptual framework or create a more private sector/investment friendly legal system.

[29] Federal Democratic Republic of Ethiopia, Labour Proclamation No. 1156/2019

raises the minimum working age from 14 years of age to 15, while maintaining the list of tasks and conditions permitted to young workers[30].

- The National Employment Policy and Strategy produced by MoLSA in 2009[31] calls for keeping a balance between allowing older children to work under decent conditions for income generation to fulfil their basic needs, and supporting them in terms of schooling and skills development.
- The Growth and Transformation Plan implementation strategy and targets aim to reduce child labour abuse, migration, and trafficking.
- In 2012 MoLSA produced the National Action Plan on the Elimination of the Worst Forms of Child Labor with the aim of eliminating the worst forms of child labour by 2015 and creating conducive environment to address all other forms of child labour in the long term.
- The 2017 National Children's Policy has a section on 'Child abuse, child trafficking, child labour and harmful traditional practices', which, in addition to preventing and controlling child trafficking and child labour, focuses on creating a favourable working environment for young workers so that they are protected from labour exploitation and hazardous working conditions.[32]

However, there is a significant challenge in implementation, which is attributed to the lack of official translation of documents in official outlets. Consequently, judges usually refrain from using the articles of conventions to prosecute violations of children's rights.

The government has not included child labour elimination and prevention strategies in the Education Sector Development Program, The National Technical and Vocational Education and Training Strategy or the Nation Youth Policy.

The key social programs to address child labour include the Engaged, Educated and Empowered Ethiopian Youth Project (2014-2018) as well as various World Bank- and UNICEF-funded programs.

However, these programs do not sufficiently target the sectors with a high incidence of child labour, such as agricultural and domestic work. There is also lack of appropriate rehabilitation and reintegration centres throughout the country for victims of child trafficking or commercial sexual exploitation.

3.6. Partnership and Coordination on Child Labour

The Ethiopian government has established mechanisms to coordinate its efforts to address child labour. The coordinating bodies include:

- The National Steering Committee on the Worst Forms of Child Labor
- Ministry of Labour and Social Affairs (MOLSA)
- The National Forum to Eliminate the Worst Forms of Child Labor
- The National Steering Committee against Sexual Exploitation of Women and Children

[30] Zewdu Teshome (2020), Review of National Employment Policy of Ethiopia: Reference to Labor Proclamation 1156/2019

[31] The new version of the NEPS is endorsed by the Council of Ministers in April 2016, which aimed at ensuring full, productive, and freely chosen decent employment is promoted in the country. The Policy and Strategy is supposed to alleviate problems of unemployment , eradicate poverty, and address labour and employment-related issues in the country. The policy also plays a critical role in facilitating an effective employment environment for employees and employers. Besides, it gives particular attention to people with disabilities and women by adopting practical and supportive strategies that ensure equal participation in labour market and income generation activities.

[32] Federal Democratic Republic of Ethiopia (2017): section 3.8.

- The National Anti-Human Trafficking and Smuggling Council
- The Task Force on National Anti-Human Trafficking and Smuggling of Migrants
- The National and Regional Task Force on Orphans and Vulnerable Children.
  According to key informant interviews, the government-established task force has failed to achieve its mission due to a lack of a structural chain from top down. Thus, the lower level administration unit or structure is neglected in implementation.

Besides, there are gaps exist that hinder the effective coordination of efforts to address child labour, including efficacy in accomplishing mandates. As reported by many experts in the field, there are limited committee budgets, overlapping mandates, and poor coordination, all of which affects their ability to operate and coordinate efforts to address child labour at a national and regional level.

3.6.1. Stakeholder mapping and interaction analysis

The government offices most significant for this assessment are those under the Ministry of Labor and Social Affairs; the Ministry of Women and Child Affairs; the Ministry of Agriculture; the Ministry of Education as well as the Ministry of Health. Civil servants and religious leaders also have an important role influencing communities' attitudes and views related to child labour.

Apart from government offices, there are various NGOs and international organisations operating in Amhara and Tigray regions. These include the International Organization for Migration (IOM); the Organization for Social Services Health and Development (OSSHD); the Organisation for Social Services for Aids (OSSA) and the local NGO Mums for Mums. However, most of these organisations and government offices mainly focus on trafficking and irregular and illegal migration, not on child labour.

Cooperatives, such as the primary cooperatives and the cooperative unions are not focused on the worst forms of child labour and/or child labour in sesame value chain. Child labour is not included in their bylaws.

This is due to a lack of awareness of child labour of the cooperative unions' members and management. Besides the regulatory body that licenses cooperatives does not put or include child welfare as a requirement. However, female-headed households are encouraged and given priority to be included in the management committee. In some cooperatives union the female-headed households comprise of about 43% of members.

More generally, neither the smallholder nor commercial farmers collaborate with key government stakeholders on the prevention of the worst forms of child labour. According to the key informant interviews and focus group discussions, there is weak linkage and coordination to implement the laws and regulations related to child labour. Most farmers lack of awareness on child rights related to child labour.

The lack of knowledge on the policies, laws and regulations related to child protection, particularly to those associated with the worst forms of child labour are major factors for entrenched child labour in north west Ethiopia (Tigray and Amhara regions). Moreover, interviews showed that there is also lack of awareness among many of the government staff at *woreda* level about the child labour particularly the different types of the worst forms of child labour.

The focus group discussion participants also revealed that a lack of awareness in sesame production on child rights has a significant role in the persistence of exploitative child labour. Another reason

cited is the lack of modern production and harvesting technology at affordable prices at the community level.

Furthermore, the existing of norms/social structure/customs that encourage using child labour in economic and non-economic activities as well as the limited participation of the communities in the child protection are also deep-rooted challenges in preventing WFCL. The focus group discussion participants reported that engaging children in different forms of agricultural activities including in sesame weeding and harvesting are taken for granted as a right to social/community norms.

This finding echoes the results of (Kelemu and et.al, 2016) which show that the positive attitude of families and communities towards engaging child labour as a normal economic activity to meet their own needs and to support their family, expose the children to child labour. The community as well as the family's lack of awareness regarding the rights of children, the illegality of sending or employing children in abusive work, and a culture of considering work as part of socialisation and upbringing without considering which types of work are appropriate escalates the use of child labour.[33]

3.6.2. Role of stakeholders related to child labour and employment (providing training, including formal, informal and on-the-job training)

According to key informant interviews and focus group discussion, there is no skill training, formal, informal or on the job training to address child labour issues. There are also no skill training programmes designed to reduce the need for child labour in agriculture in the study areas.

The existing stakeholders instead concentrate their efforts on reducing the problem of illegal migration, child trafficking and commercial exploitation.

Key informants say there are some technical and vocational training centres[34] that provide skill training, open to young people completing the 10th grade. There are also some non-governmental organisations which sent beneficiaries to take vocational training.

3.6.3. Perceived modalities for engaging downstream and upstream partners (labour opportunities and market opportunities)

According to the findings of the assessment, there are linkages among downstream and upstream partners in sesame sector. However, the linkages are not coordinated and are very disorganised.

Cooperatives and cooperative unions play a key role in supporting smallholder farmers with a supply of agricultural inputs, access to credit (through links with microfinance institutions) and marketing sesame through the ECX to the export market. Sometimes, cooperative unions directly export themselves.

However, according to the key informant interviews, the lack of specialisation among the partners in the sesame business affects the performance of the sesame market.

[33] Kelemu and etal (2016). Exploring the Socio-Economic Determinants of Child Labour Exploitation, Gondar, North West Ethiopia

[34] Technical and Vocational Centers are the training centres which are dedicated to youth training for those who do not pursue other higher education. It is run by the government. The TVET strategy of Ethiopia goal is to strengthen the culture of self-employment and support job creation in the economy. The Education Sector Development Plan IV (ESDP IV) says the aim of TVET is to train mid-level labour by so as to contribute to the vision of the country to become a middle income country in the year 2025. Thus, TVET considered as nucleus for economic development of Ethiopia.

The informants suggested that what was is needed are innovative solutions to product quality assurance, linkages, sesame-financing, the introduction of labour-saving technology, and promoting secure livelihoods.

3.6.4. Opportunities for the collaborative engagement of stakeholders

This study found that the stakeholders in the sesame sector are not well coordinated and the commercial farmers and smallholders see each other as rivals in the sesame business.

Focus group discussion participants said, "*The [commercial farmers] are in both cases competing with small holders in labour, land and other inputs for sesame production rather than supporting us. We never gained any improved technology or skill transfer from them. Besides, they usually use temporary migrant labour for their sesame agriculture weeding and harvesting. Probably, the farmers who rent out land to them may be benefiting by getting money in return for their temporary shortage of finance.*"

While the focus groups participants did not mention it, the consulting team observed and understood that sesame production, agricultural marketing does have the attention of government, non-government, and traders/exporters, from which smallholders benefited from sesame market promotion and linkages.

According to a key informant, the Sesame Business Network and Cooperatives for Change Project (C4C) has begun rolling out a project, implemented by the Dutch NGO SNV, which has created excellent results in the production and agricultural marketing of the sesame. Hence, there is the possibility of developing contract agricultural marketing with commercial farmers as well as introducing appropriate technology for sesame production, agricultural marketing, transporting and warehousing by mobilising partners resources.

The key informant said that almost all stakeholders focus on the production, sesame financing and market linkages. But none of these is strongly involved in labour issues, least of all child labour.

The consulting team did, however, find that there were efforts by the Agricultural Transformation Agency in preparing a tailored labour manual that would be serving as a guide to labour relations among sesame producers and labourers. The Sesame Business Network (SBN) also works on sesame production, agricultural marketing, and labour issues to some extent.

The major partner for the agricultural marketing of sesame are cooperatives and the ECX. These do not currently have a manual related to labour and especially not child labour.

Thus, with so little being done so far, there are plenty of opportunities to collaborate with and/or establish platforms for improving the labour market, with the aim of ending the WFCLs.

The collaboration could take the form of supplying affordable and innovative technologies for sesame production, developing development projects for sustainable alternative income opportunities, and/or providing tailored skills training based on the current labour market demands as well as for the self-employment.

3.7. Policies, Social Norms, Learning/Good Practices and Challenges

The focus group discussion participants said there are no previous local success stories to learn from in helping to free children from the WFCL.

The Office of Women and Children Affairs of the *woreda* has, however, attempted to provide some technical advice as well as raise awareness of problems of involving children in risky and difficult jobs and its consequences on the life of children. But this response is not sufficient nor adequate to overcome the present problems of child labour in the area.

3.7.1. Policies and regulations that govern labour

The government of Ethiopia has established laws and regulations related to child labour[35]. Relevant regulations and polices at national level are as follows:

- Article 89 (1 & 3) of the labour proclamation which sets a minimum legal age for hazardous work at 18 years
- Article 89 (1) of the labour proclamation which stipulates the minimum legal age for young workers as 15 years and Article 89 (2) states it is prohibited to employ a person less than 15 years of age.
- Article 89 (4) of the labour proclamation set out activities prohibited for youth workers in sub-articles a-d, which deals with prohibition of hazardous occupations or activities for children
- National Action Plan to Eliminate the Worst Forms of Child Labour (2013-2015)
- Protocols and guidelines for identification, withdrawal, rehabilitation and integration of victims of the Worst Forms of Child Labour in Solid Waste Management and the Traditional Weaving Sector (2010)

However, gaps exist in Ethiopia's legal framework to adequately protect children from WFCL, including the minimum age for work and the age for compulsory education.

Not all Ethiopian laws related to child labour comply with international standards. The Ethiopian Labour Proclamation (Labor Proc. No.1156/20l9) applies only to children who have a contract with their employer. This does not conform to international standards that require all children to be protected under the law establishing minimum age for work.

Moreover, the types of hazardous work prohibited for children do not cover traditional weaving, an area of work in which there is evidence of using dangerous machinery, equipment, and tools, nor does it cover work that involves the manual handling or transporting of heavy loads other than in transportation industry.

Lastly, Article 89.5 of the labour proclamation allows children between the ages of 15 and 18 to engage in certain forms of hazardous work as long as the child has completed a government approved and inspected vocational training course. It states, "The provision of Sub-Article (4) of this Article (89.4)[36] shall not apply to work performed by young workers in fulfilment of course requirements in vocational

[35] It includes labour proclamations/directives, The Constitution, and Criminal Codes, for instance, prohibits forced labour; the criminal code prohibits child trafficking, sexual exploitation of children and using children in illicit activities

[36] Federal Democratic Republic Ethiopia Labour Proclamation No.1156/2019. List activities prohibited for young workers which includes in particular. a) Work in the transporting of passengers and goods by road, railway, air and internal water ways, dock sides and ware houses involving heavy weight lifting, pulling or pushing or any other related type of labour; b) work connected with electric power generation plants, transformers, or transmission lines: c) Underground work such as mines and quarries: d) Work in sewers and tunnel excavation.

schools that are approved and inspected by the Competent Authority." This contradicts ILO C.138, which prohibits hazardous work for all children under age 16. However, the government of Ethiopia notes that, in practice, children may begin apprenticeships only after the completion of 10 years of schooling, or at age 17.

The government has established institutional mechanisms for the enforcement of laws and regulations on child labour. The major agencies responsible for child labour law enforcement are the Ministry of Labor and Social Affairs (MoLSA), the Ethiopian Federal Police Commission, the Office of the Attorney General, and the Ministry of Women and Children's Affairs. However, gaps exist within the authority of the Ministry of Labor and Social Affairs (MOLSA) that may hinder adequate enforcement of their child labour laws.

In 2018, labour law enforcement agencies in Ethiopia took actions to combat child labour: labour inspections were carried out by MOLSA in the agriculture and construction sectors. The number of child labour violations identified in the inspections have not been publicised. Whatever the number, the penalties for violating child labour laws range from $11 to $44 and are too low to deter violations.

Pertinent officials who deal with the child labour do not know most of labour laws. In practice, therefore, there are no penalties for non-compliance to child labour laws.

Moreover, the number of labour inspectors is likely insufficient for the size of Ethiopia's workforce. MOLSA and other stakeholders report that a lack of resources and poor coordination among agencies has hampered their ability to enforce child labour laws throughout the country.

There are also data collection problems: data is not captured by sex and age.

Most importantly, the current labour laws do not address the informal economy, where child labour is the most prevalent.

3.7.2. Social norms and rules that govern child labour

The survey findings showed that engaging child labour in agricultural activities is most common in weeding and harvesting, since these activities require the quick deployment of labour to complete the necessary tasks on time and prevent crop losses.

Parents engage their children in agriculture and domestic chores as a first form of vocational education for them. Agricultural work in Ethiopia includes activities like ploughing, weeding, harvesting, transporting, threshing, post-harvest, and marketing activities. Work in the agricultural sector is repetitive and labour intensive. The herding of cattle is also a major activity for rural children.

Domestic work is also one of the most common and traditional forms of child labour in rural Ethiopia. Domestic chores include activities like fetching of water and firewood, minding of small children, preparation of food and cleaning. It also includes work in the rural informal sector including activities like shop keeping, traditional weaving, making of agricultural tools and trading.

Domestic services can cause serious psychological and social adjustment problems like premature ageing, depression and low self-esteem.

Girls are particularly involved in domestic work, because these considered an essential component of a girl's upbringing. It is seen as part of the process of preparing the girls to become good wives that they should learn cooking and other skills from their mothers or from their older sisters through increased participation in household activities.

Even pre-school[37] children, who are normally too young to work, often participate in domestic and farm work activities.

While girls primarily work more in domestic activities, boys do a lot more farm work. Communities feel that it is important to involve children in economic activities and equip them with the basic life skills for their future survival. Thus, the subsistence nature of economic life, tradition, and cultural values force rural communities in Ethiopia to involve their children in economic activities thereby perpetuating child labour. These practices lead rural children into exploitative and hazardous work conditions and thereby limit their ability and right to grow up in a healthy and conducive environment.[38]

Due to early marriage practices, more girls usually stay out of schools than boys do. Moreover, parents' perception of the benefits of schooling linked to the expectations of the child's role when he/she grows up. According to the key informant interviews, the majority of the community members perceive that their return on an investment to a son's education is greater than for a daughter because the son remains at home after marriage whereas the daughter expected to move away.

Boys in most cases inherit the family assets and continue to support their parents in old age, whereas female children become a part of their husbands' families after marriage. Thus, investing in girls' education perceived as not being beneficial to her own family, because any benefits of her education will go to her future husband's family, rather than her own.

In some instances, unwanted or forced marriage is the other cultural condition identified in the study as a contributing factor to human trafficking. In many rural parts of Ethiopia, girls often marry at early age. In some instances, young girls given in a marriage form to a man that they barely know, often without their consent. Girls are forced to marry an individual they hardly know just to strengthen the relationship of their parents or to economically subsidise the family. This leads women to suppression and leading unpleasant life situations, which in turn leads to migration and trafficking.[39]

In general, rural people often perceive the elimination of child labour as an attempt to deny children the opportunity to help their parents and learn valuable skills. The households interpret the WFCL not as hazardous but rather as one aspect of educating children as a socialising activity and as part of life-skills acquisition.

Indeed, this is noted in an ILO organised national workshop more than two decades ago as quoted in National Child Survey (2018):
"… The work of children in the home or on the family farm under the guidance of parents is an essential part of socialization and development in traditional societies. Where access to education is limited by

[37] Pre-school children consist of mainly the inactive category. Primary schooling begins at the age of 7 years in Ethiopia. Children below seven may normally be enrolled either in traditional or religious schools in rural areas and in kindergartens in urban areas, where children learn basic literacy and numeracy.
[38] Admassie, Assefa (2000) The incidence of child labour in Africa with empirical evidence from rural Ethiopia, ZEF Discussion Papers on Development Policy, No. 32, University of Bonn, Center for Development Research (ZEF), Bonn
[39] Hailemichael Nigusu Hagose (2014), Causes and Consequences of Human Trafficking: A Case Study in Metema Town , North West Gondar Zone, AAU, MSc. thesis

other factors, and where poverty requires the contribution of children's work, the work of children in traditional family and community occupations may be on balance positive both in its contributions to family welfare and in the social and psychological development of the child."[40]

Conversely, however, there are some social norms and regulations that can help in alleviating the WFCL. For instance, female children are not involved in ploughing nor keeping cattle in areas far from home. Generally, children under the age of 12 do not work in ploughing. Otherwise, they are engaged in all economic and non-economic activities to the extent that they are capable. It should be noted though, that while these social norms are known by the community members, there are no social sanctions or penalties attached from deviating from them, beyond being criticised by society.

4. Constraints and Challenges in Sesame Value Chains

The major challenge in sesame production is to increase the productivity per unit. Several studies have indicated that, despite an increase in production, sesame yield has been stagnant for many years, at around 0.4 to 0.5 metric tonnes per hectare. According to 2019 Food and Agriculture Organisation statistics (FAOSTAT), Ethiopia's sesame yield is lower than that of world average of 5.12 metric tonnes per hectare and considerably less than China's and Nigeria's average, which is 13.93 and 10.63 tonnes per hectare respectively (FAOSTAT, 2019).

Low sesame productivity is the result of multiple factors, many of which are associated with the undersupply of appropriate farm inputs, including improved seed varieties, chemicals, and a lack farm extension support, such as education and training services.

According to key informant interviews and focus group discussions, sesame production is not a pro-poor crop, as it requires a relatively large investment, compared to other crops, with costly inputs related to land preparation, weeding and harvesting required.

In project areas, producers, including small-scale farmers and commercial farmers practiced traditional production systems, involving poor farm management practices, such as the use traditional ploughing using oxen- or donkey-driven plough. This is an expensive and labour-intensive method, results in shallow tillage and makes it difficult for row plantation and fertiliser application.

The study teams in the survey areas identify the following major challenges:

<u>At production level</u>

Shortage and untimely supply of improved seed varieties

A significant limiting factor at the production level is the fact that sesame is a naturally low yield crop. Much research indicates that the productivity of sesame varieties in Ethiopia is very low when compared with other countries. There is a serious shortage of supply of improved varieties, such as early maturing and high yielder for quality production. As a result of farmers utilising low yield seeds for successive years without replacement, yield per unit inevitably declined.

Poor extension services

[40]Ethiopia National Child Labour Survey (2015) quoting from ILO: Report of the National Workshop on Child Labour in Ethiopia; November 1995.

Agricultural extension is the application of scientific research and new knowledge to agricultural practices through farmer education. The focus groups said the extension services they have access to are inadequate.

Unpredictable rainfall

Unpredictable rainfall has significantly influenced the production, productivity and quality of sesame. The focus group participants and key informant interviews with experts stressed that even though sesame is highly drought tolerant crop, prolonged dry spells during its early growth stages affect growth and development. Cessation of rainfall during the mid-growth stages also disrupts flower initiation and grain filling, deterring pollination and the seed set process.

Traditional production practices

Mono-cropping system of sesame production without rotation and fallowing are critical constraints.

Weak monitoring and technical support to enhance sesame seed quality from the side of public extension services have worsen the low production performance of sesame.

Poor harvest and post-harvest management

Furthermore, considerable sesame yields are lost through shattering, which is when crops disperse their seeds upon becoming ripe, generally thought of as an undesirable process. Being late with harvesting can cause this to happen. Moreover, if bundled sesame (known locally as 'hilla') is left too long, it will shed it seeds.

The survey respondents stress that substantial post-harvest occurred in the study areas. The estimates of the average loss ranges between 13% and 20% of production per unit.

Therefore, introducing improved post-harvest management technologies at harvesting, drying, threshing, marketing, and storing stages will greatly reduce considerable crop losses in the study areas.

In general, attributable to the above constraints, the producers remained in a vicious circle. They produced minimal and low-quality sesame, leading to a low bargaining position for their produce on the markets.

Possible solutions to this include:

- Strengthening the capacity of Sesame Research Centres of Metema and Kafta Humera
- Improving the provision of sesame extension packages, including expansion of the capacity of farmer training centres and development assistance, in order to deliver appropriate training and information to farmers could increase the yield and quality of sesame output.

At marketing level:

Poor infrastructure

The study areas both in Amhara and Tigray regions are characterised by inadequate market infrastructure, a limited number of primary market spots, a limited number of warehouses located at

distance centres, and poor road access and networks, which raised transport costs and reduced the competitiveness of the commodity.

Lack of market information systems
Moreover, the absence of an efficient market information system on the local and international sesame price affects producers' margin by preventing them from making efficient decisions as well as negotiating on price.

Liquidity constraints
Always facing cash flow problems, producers are forced to sell their produce as soon as they harvest, when the prices are relatively low. They nearly all need money immediately to cover urgent family needs, credit repayments, tax and other obligations.

Long supply chains involving a large number of market actors at different stages of the market that reduced the profit margin of producers and thereby hindered their incentive to produce more or pushed them to produce other commodities.

Lack of credit means that cooperative unions cannot take advantage of seed prices when they are low. Some of the interviewed members have also mentioned the shortage of capital as a major constraint to involve in the ECX market.

At the processors level:

Many cooperative unions who possess oil extraction plants complain about high levels of competition from oil coming into the country through imports and food aid. The existing processing capacity is currently underutilised due to the levels of external supply.

At trader level:

The seasonal purchasing capacity appears to be a major constraint due to the absence of credit facilities. A field report by the Ethiopian Pulses, Oil Seed, and Spices Processors Exporters Association describe the present problems as follows:

- Low awareness level of producers and traders as well as a lack of market network has restricted the level of participation of actors in the exchange market.
- Problems of quality, traceability, market fluctuation, and holding back of produce during the good market season, introduction of VAT, lack of trade ethics, restrained sustainable supply.
- Price dictation by the brokers in sesame and holding back of produce by regional enterprises during peak season could not enable benefit from very good sesame price on international market.

Commercial Farmers
The use of chemicals was reported as a serious concern for Ethiopian sesame exporters, particularly those dealing with organic sesame.

This is because commercial farmers grow 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 were mentioned as a major obstacle to the organic export of sesame.

Another problem is that though sesame is usually sold within a short period after harvest, when it is not, it is susceptible to post-harvest losses, where quality and quantity decline after harvest.

COVID 19 Pandemic - Emerging Challenge
The fear of the COVID-19 pandemic and the State of Emergency in the country has prevented the free movement of labour. Many potential seasonal labourers stayed away for fear that they would become infected with COVID and transmit it to their families after they returned.

Consequently, a large number of sesame producers changed their plan and cultivated sorghum and soya beans and other crops, though it is not as profitable compared with sesame.

This shift in production was promoted and directed by *woreda* government offices, due to the expectation of low labour supply as a result of COVID-19 particularly, during weeding and harvesting season.

With the increasing importance of sesame seed as a major contributor to foreign exchange earnings, it is vital to curb the aforementioned challenges at all levels.

The exception is the COVID-19 pandemic, which is beyond local capacity and requires a national and global solution.

5. Conclusion and Recommendations

5.1 Conclusion

The results of this study show there are various constraints and challenges, as well as a huge potential to improve the sesame value chain in general and production capacity in particular: sesame producers are obtaining far lower yield than they could, considering the production potential of the areas.

There is a need for increased production and yield of sesame in the study areas through enhanced and extensive use of better agricultural practices, technologies and training for both producers and labourers. The government and development partners should give greater emphasis to supporting the availability and use of better seeds; yield-enhancing technologies; providing training programmes; improving post-harvest practices and handling; expanding opportunities to access credit and improving land use and agronomic practice, supported by technology. Value addition can be further enhanced through wider agricultural marketing capacity through expansion into processing.

These practices should enhance quality as well as boost the supply of sesame to the export market. They should also reduce the need for high levels of labour, particularly the types that are frequently undertaken by child labourers. Following these steps would also grow the profit margins for actors across the value chain.

5.2 Recommendations

Despite the legal framework and policies the Ethiopian government has put in place to address child labour, the problem persists. The relationship between child labour and school attendance is due to poor policy implementation. This failure can be ascribed to limited budgets, lack of coverage, lack of technical capacity and a low awareness of the impacts of child labour.

An additional factor has been the failure to acknowledge and address socio-cultural issues that hamper implementation efforts. Parents engage children in agriculture and domestic chores as a first form of vocational education for them. Hence, the elimination of child labour is often perceived as an attempt to deny children opportunity to help their parents and learn valuable skills.

Furthermore, strengthening the institutional and technical capacity of the sesame research centres of Metema and Kafta Humera, improving the provision of extension packages and the expansion of the capacity of farmer training centres to deliver appropriate training and information to farmers could increase the yield and quality of sesame production.

Above all, supporting the research centres and providing improved seeds should result in increased production through the provision of disease-resistant seed varieties.

The following recommendations and suggested areas of interventions seek to address the main problem areas identified in the sesame value chain, and provide potential alternatives to improve the use of labour inputs and reduce child labour exploitation in the study areas:

1. **Improve low productivity and agricultural marketing**

- *Address the shortage and unreliable supply of seeds* through the provision of improved seed varieties that would be early maturing and higher yielding. Bureaus of agriculture, the Agricultural Transformation Agency and development partners play pivotal roles in empowering the cooperatives and their members, as well as the unions, to produce quality seeds and/or provide improved seeds to farmers.

- *Improve the existing agricultural extension services on sesame production.* This should be achieved through boosting the capacity of farmer training centres and development assistants, which could then deliver appropriate training and information to producers. The sesame research centres of Metema and Kafta Humera *woredas* should also be built up.

- *Provide improved post-harvest management equipment* for help with activities such as harvesting, drying, threshing and agricultural marketing stages. This would reduce considerable crop losses in the study areas.

- *Increase the capacity of quality control systems and regional bodies, as well as improving the traceability of the seeds*. Providing guidelines and enforcing standards for all seed producers would be an important step. Farmers also need support to enable to implement internal quality control.

- *Strengthen market information systems and improve linkages between various levels of the chain.* Currently, a lack of information and a disconnect between the supply chain actors, from farmers, to cooperative unions, assemblers and collectors, means the market is operating inefficiently,

with bottlenecks frequently occurring. Information systems should be farmer-focused and accessible. The promotion of contract farming, which is an agreement between farmers and processing and/or market firms for the production and supply of agricultural products under forward agreements should be considered.

- *Establish a fairer and more stable pricing model for sesame*. The study identified unstable and unattractive prices for sesame seed producers as being critical constraints in production. The process of price setting is claimed to be unfair, typically with a lower difference between price and production costs than other grains. The study therefore recommends that existing prices are set based on actual detailed analysis of the production cost to farmers.

- *Increase warehouse space.* Lack of storage and post-harvest loss discourage producers from holding onto produce. This means they have to sell soon after the harvest, when supply is greatest and therefore the price lowest. The absence of storage services at primary cooperatives not only affects the quality of the seeds, as inadequately stored seeds are likely to degrade, but also determines the amount and speed at which the seed can be aggregated. As a temporary solution some primary cooperatives have provided transport services and aggregated seed directly to their respective unions' store. ECX and cooperative warehouses are at more distant locations.

- *Expand access to financial services.* As most smallholder producers and primary cooperatives do not have assets that can be used as collateral to access loans from banks, they are classed as ineligible to borrow even the smallest amounts of credit, even for short-term loans to assist with peak season costs. In order to improve access to sustainable financial services, facilitating partners like the Agricultural Transformation Agency, regional cooperatives, NGOs and regional government should collaborate to create a system of time-sensitive annual loan guarantees, or link producers to other credit sources such as RUSACCOs, rural microfinance institutions.

2. Improve labour efficiency and reduce/prevent child labour use

- *Address child labour through culturally appropriate awareness-raising.* Programmes should take into account cultural norms and the reasons that parents engage their children in agriculture and domestic chores. Parents often see child labour as a form of vocational education and therefore resist the elimination of child labour as an attempt to deny children opportunity to participate in family life and develop skills for future life.

- *Support the ability of sesame producers and local communities in efficient labour utilisation in a way that discourages the use of child labour.*

- *Provide technical and financial support to improve farmers' working conditions and income.* Child labour monitoring systems are crucial in identifying children engaged in child labour and support them and their parents economically. Furthermore, establishing community-based child protection and monitoring committees to track child labour situations.

- *Incentivise farmers at local level by providing credit on the condition that they do not engage in child labour*. Compliance with this condition should be monitored in collaboration with formal financial institutions (such as banks, RUFIP and RuSACCos offices), agricultural extension offices and labour officials. There is a need to devise mechanisms that ensure RUFIP III (the latest rural finance programme) end beneficiaries respect the national Proclamation No. 1156/2019, which states that children under age of 15 are not employed, and young workers aged between 15 and 18 years should not perform work that is likely to jeopardize their health or safety.

- *Implement a child labour due diligence law*, which requires companies selling sesame to end users to determine whether child labour occurs in their supply chains or not. This necessitates the private sector addressing child labour as illegal and committing their policies and procedures accordingly.
- *Mainstream child labour concerns in development strategies*. This requires a harmonised, integrated multi-stakeholder approach. It is also important to consider child labour policy and programming within wider national policies such as in education policy, agriculture policy and others. This should be supported by better coordination among relevant bodies to make sure strategies are implemented.
- *The basic principles of access to free and universal education for all children in the country* should be maintained to reduce the worst form of child labour.

6. Key Areas of Interventions and Potential Alternatives

This study recommends the following key areas of intervention and potential alternatives to support labour efficiency and reduce or prevent the use of child labour in the major sesame producing areas of the country:

1. Potential technological alternatives to child labour use

- As described in the study, sesame production is labour intensive, leading smallholders to use their own children intensively due to the absence of appropriate technological alternatives at an affordable price. This necessitates the provision of appropriate mechanisation to help reduce the use of child labour.

2. Economic intervention to reduce or prevent the use of child labour

- Poverty at household level is one of the major factors that fuel child labour and force children into the worst forms of child labour. Therefore, interventions that improve household livelihoods in a sustainable way are important. Feasible income-generating schemes that include thorough business planning, vetted for practicability and profitability can incentivise parents to find alternative sources of income rather than relying on child labour.

3. Capacity enhancement to minimise social norms that encourage child labour

- This study reveals that child labour is common practice among the farming communities in the sesame cluster *woredas*. Family work is considered local level skill apprenticeship and is encouraged to help bring additional income into the household. Community awareness on children's rights is very poor. In addition, government implementation bodies charged with enforcing child rights in relation to child labour are very weak, uncoordinated and haphazard. There is a need for awareness creation on child labour within the community and to establish child labour monitoring systems in collaboration with community and local government administration. Furthermore, community-based child protection and monitoring committees to track and combat child labour should be established. Incentive schemes should also be established. In addition, it is essential to mainstream child labour concerns in development strategies and establish better coordination between institutions. The basic principles of access to free and universal education for all children in the country must be maintained to reduce the worst forms of child labour.

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