



A study on challenges and opportunities of sesame production (With reference to sesame farmers, tigray regional state, Ethiopia)

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Abstract

The specific objective of the study was to identify challenges and opportunities of sesame production with reference to sesame producer farmers in Kafta Humera Werda, Tigray Regional state, Ethiopia. In order to acquire the relevant data, primary and secondary data were used. Cross sectional data was collected from 388 sample respondents of the Kafta Humera Werda Tigray regional state using multistage sampling technique. Besides, focused group discussions and interviews were also made with higher officials, selected model farmers and experts of various bureaus and sectors of the zone and the region of the study area. Data were analyzed descriptively to arrive at conclusion. Constraints/ challenges hindering the development of sesame value chain were identified at farm-level. Production related challenges involves labour shortage, post-harvest losses, irregular rain fall, poor linkage among value chain actors, absence sesame processing plant, lower productivity, limited access to credit, shortage of improved variety, infestation of disease and insect pests, higher fertilizer price and untimely delivery and existence weak farmer cooperatives. Apparently sesame growers indicate marketing related challenges which involves limited access to market information, poor road and telecommunication infrastructure, existence of large middle men, lack of modern packaging materials and lack of appropriate storage facility. Finally, existence of huge opportunities in the international market for sesame, agro ecology, huge demand for food oil in the country, smallholders' dominated subsistence agriculture farming practice, more focus from government as sesame one of targeted crops for development in the growth and transformation plan and agro processing plant establishment were among potential opportunities identified in this study area. Based on the findings of the study we suggest that the government and concerned stakeholders should focus on promoting improved sesame variety, encouraging the use of labour saving technology, strengthening the existing social services, promoting farmers' cooperatives, strengthening rural urban infrastructure, creating competitive market and availing market information services.

Keywords: challenges, opportunities, sesame

1. Introduction

1.1 Background of the Study

Value chain has been used to analyze the dynamics of markets and to investigate the interactions and relationships between the chain actors. The agricultural value chain approach is utilized by many development interventions that intend to engage smallholders either individually or collectively into the production of market oriented high value crops (Anandajayasekera and Berhanu, 2009)^[9].

Value chain analysis is one of the principal ways of channel mapping and a high-level model of how businesses receive raw materials as input, add value to the raw materials through various processes, and sell finished products to customers. In value chain analysis operation activities, value adding and costs are integrated phenomenon. It involves all the process from the market point back to the beginning of activities usually between input supplies and product marketing. The process of tracing a product flow through an entire channel from the point of product concept to the point of consumption highlights the pattern of inputs, constraints, value adding or

non value adding activities, associated costs and competitive advantages (Yohannes, 2005)^[28].

2. Importance of Value Chain Analysis

Value chain analysis and development approach has been widely applied to pro-poor economic development and is well suitable for addressing employment for two reasons. First, it has economic viability and sustainability at its core because along efficient value chains, the rate and the scope of industrial growth can increase significantly (Ayodele *et al.*, 2011)^[5]. Second, it is a strong qualitative diagnostic method that is capable, if employed with better skill, of identifying critical issues and challenges for specific target groups and then generating new and effective policies and development strategies.

Value chain analysis normally shows the build-up of costs along a specific commodity chain. This can be complemented with an identification of the business service providers and what are considered to be the main determining factors in the external policy environment. This reveals that value chain

analysis can be used at understanding how poor people in rural areas of developing countries like Ethiopia can engage, or improve their terms of engagement with domestic, regional or international trade issues.

According to M4P (2008) explanation a value chain exists when all of the actors in the chain operate in a way that capitalize the generation of value along the chain. In addition, it is also possible to describe it as a series of sequential activities where at each step in the process, the product passing through this chain of activities gains some value. The farm and all the intermediary processes constitute the agricultural sector. By definition, agricultural income is the farmer's value added plus value added at all the nodes of the post-harvest activity until reaching the last intermediary who interfaces with the consumer.

Value chains develop rural-urban linkages through which agricultural production in the rural areas provide the growing cities with affordable and quality food and raw materials for the industry (Adrien, 2008) ^[2]. Value chain also provides potential benefits for both rural producers and urban consumers. According to United Nations Industrial Development Organizations, (2009) value chain promotion is an effective way of fostering rural-urban linkages for several reasons. Firstly, the concept provides a useful analytical framework for market and sub-sector analysis and describes productive processes around a product from the provision of inputs to production, transportation, transformation, processing, marketing, trading, and retailing to final consumption

Secondly, value chain emphasizes that most goods are produced by a sequence of interlinked actors and activities. The approach deals on the analysis of the institutional arrangements that link the various economic players be it vertical and horizontal integration, organization and contracts at large.

Thirdly, it highlights the importance of private sector development. It provides a holistic framework which can encompass a number of different development activities for the purpose of fostering agricultural growth Hence, agricultural value chains link urban consumption with rural production. Urban-driven demand, emergence of modern consumption patterns or new trends in international trade, impacts on rural areas along value chains and spills over to marketing and production systems.

These rural-urban linkages bear challenges but also mutual benefits for producers and consumers and can be entry points for development through income and employment generation and poverty reduction. When high rates of agricultural growth through development of agricultural value chain lead to sustained increase in productive capacity, employment opportunities and rising productivity are generated (Ponsian, 2012) ^[19].

Fourthly, and related, value chain analysis identifies the core rents and barriers to entry that determine who in the chain benefits from production for diverse final markets. This helps to focus minds on how best to facilitate the participation of the poor in these chains. There may be little point in assisting producers to enter chain links characterized by excessive competition (i.e. where there are no barriers to entry). Additionally, it is an innovation that enhances or improves (in

the opinion of the consumer) an existing product, or introduces new products or new product uses. This allows the farmer to create new markets, or differentiate a product from others and thus gain an advantage over competitors.

Value chain analysis is the process of breaking a chain into its constituent parts in order to better understand its structure and functioning. Such type of analysis stick at identifying chain actors at each stage and ratifying their functions and relationships; determining the chain governance, or leadership, to facilitate chain formation and strengthening; and identifying value adding activities in the chain and assigning costs and added value to each of those activities done by each actor. According to UNIDO, (2009) ^[23] findings the flows of goods, information and finance via various stages of the chain are examined in order to identify problems or opportunities to improve the share of specific actors and the overall performance of the chain.

According to Wolday (1994) ^[24], Agricultural marketing is a key factor in economic development and lack of a well-functioning agricultural market and marketing system severely hinders the increase of social welfare, income distribution, and food security of developing countries. Moreover, markets and marketing system do not develop simultaneously with economic growth. Markets and marketing system shall be organized deliberately to enable economic development.

It is know that, having better information and marketing facility enables farmers to plan their production more in line with market demand, to schedule their harvest at the most profitable time, to decide which market to sell their produce, to negotiate on a more even footing with traders and it also enables traders to move their produce profitably from a surplus to deficit market and to make decisions about the economics of storage, where technically possible. Thus, the market information is critical to the law of one price and to the price discovery process (Khols and Uhl, 2002) ^[16].

Currently, application of value chain analysis in agriculture is growing due to market failure and non-competitive setting of small-scale agricultural production. However, value chain researches related to *sesame* products are scanty. In the past, most of the interventions to develop the *sesame* farm focused more on increasing production, especially in the so-called high potential areas and with less attention to marketing systems and *sesame* value chain. But, the development of improved marketing system and linkages among actors (including input suppliers, producers, collectors, wholesalers, retailers, and processors/exporters) are pivotal to increase production (Abebe, 2015). Therefore, in order to improve and sustain *sesame* production to satisfy the growing demand, enhancing food security, income and alleviate poverty, the identification of challenges and opportunities of sesame production are crucial.

Even though there is an immense potential for increasing domestic production of sesame to meet the current rapid demand for sesame export, but there are a number of constraints that hinder the intensification production and quality of sesame. Hence, identifying challenges and opportunities of sesame production needs to be investigated.

3. Statement of the Problem

As per findings of World Bank, (2008) ^[25] agricultural

development can be constrained by many factors. Key constraints include high transaction costs, market imperfection, lack of technology, lack of access to credit, perishability of the products and the prevalence of staple foods that are only slightly traded. These constraints may result in either exclusion of smallholders from market or unequal distribution of benefits. There is a need to manage effective participation of stakeholders in national and international economy to ensure that incomes are not reduced or further polarized (Kaplinsky and Morris, 2000) [13].

As per Azage et al., (2006) [6] finding, crop production for market requires reorientation of the production system and development of a knowledge based and responsive organizational support. Organizational support services of extension, research, input supply, rural finance and marketing and international agencies are key areas in transforming subsistence sesame crop production into market orientation.

According to Berhanu (2012) [7, 8], collaboration, cooperation and partnership of agricultural products value chain actors is needed to transform smallholder farmers. The actors can share responsibilities, pool technical resources and optimize efficient utilization of resources to achieve common objectives while avoiding conflicts. Rethinking the impact of sesame crop products production puts partnership with effective linkage among and between value chain actors (Tsedale, 2009). Inadequate physical infrastructure increases the cost of transportation, works as an informal market barrier, forms a gap between the supplier price and consumer price, and increases the loss of products. Even though the main weather roads between the major cities are often in a good condition, these roads are scarce This increases the cost of transport to these areas and creating an additional market barrier.

Problems in the sesame value chain hinder the potential gains that could have been attained from the existing opportunities. In this regard, sesame value chain analysis is an interesting process that has not been investigated so far in the study areas. Both buyers and sellers in the study areas usually do not play collective roles towards one another and there though sesame is economically and socially important, sesame value chain and its characteristics have not yet been studied and documented in the study area.

Nonetheless, the existing constraints of production, post-harvest handling and marketing such as: input utilization, productivity, poor market linkages, poor storage facility, poor packing, and distribution have played their deterring role on production, trade, and consumption of agricultural products in Ethiopia (Bezabih and Hadera, 2007) [9].

Therefore, study on analyzing sesame value chain by identifying potential constraints and opportunities is required to provide policy makers and implementers with relevant information that can help them in designing appropriate policy related to sesame value chain development so as to exploit the existing opportunity at large. There is no such empirical evidence and comprehensive study carried out on sesame value chain at zonal and Wereda level to guide policy implementations and institutional innovations. Hence, in order to bridge the research gap, this study tried to identify the constraints and opportunities of sesame value chain by addressing the following basic research objective.

4. Objective of the Study

The objective of the study is to identify challenges and opportunities of sesame production in Kafita Humera Werda, Tigray Regional State, Ethiopia.

5. Research Methodology

5.1 Research Approaches

The research problem along with the philosophy of research methodology would guide the choice of the appropriate research method. Depending on the nature of the research problem to be investigated and the research perspective, a research method could be based on the philosophy of quantitative or qualitative or a combination of these two approaches. Thus, a mixed methodology is normally adopted in their research.

5.2 Research Design

According to Bryman, (2008) [11], Research design provides a logical structure for research data gathering and analysis. To this end, the study adopted a cross-sectional survey research design as its framework to guide the process of data collection. Bryman (2008) [11] further insists that cross-sectional survey research design is the collection of data mainly using questionnaires or structured interviews to capture quantitative or qualitative data at a single point in time. To this end, cross sectional type of research design was used in this thesis.

5.3 Target Population of the Study

Target population is the complete group of specific population elements relevant to the research (Zikmund et al., 2013) [29]. The target population for a survey is the entire set of units for which the survey data are to be used to make inferences. Thus, the target population defines those units for which the findings of the survey are meant to generalize. Therefore, this section provides a description of the sample selection in Kafta-Humera Werda western zone Tigray Region Ethiopia from the total population of the study. The target population of the study was sesame producing and marketing farmers of Kafta-Humera Werda western zone, Tigray Region, Ethiopia specifically those who were living at Kafta-Humera Werda. This zone is the only zone that sesame grows dominantly and among few location of the country that sesame production areas identified country wise.

5.4 Sampling Procedure and sample size

For this study, in order to select a representative sample, a multi-stage sampling technique was used to select *Sesame* producer Zone, Werda, Tabias and sample farm households. In the first stage, Western Zone of Tigray was purposely selected based on its production centre of sesame in the region. In the second stage, from Western Zone potential sesame producer Werdas Kafta Humera Werda was selected in consultation with the zonal agricultural office and based on production capacity of each werda found in the study area, In the third stage, based on production capacity and referrals of key informants among the three Werdas found Western Zone, Kafta Humera Werda was taken since it accounts more than 85 percent of production capacity of sesame produced at zone

and Region level. In the fourth stage, depending on the probability proportional to size of sesame producing small-scale farmers from each sample Tabias, the specified numbers of respondents were obtained based on random sampling technique. Finally, using the list of *sesame* producer farmers, 388 sample farmers who produce *sesame* were selected based Yemane, (1967) sample determination formula.

5.5 Unit of Analysis

Individual farmers who produce sesame as cash crop were considered as an independent entity. Hence, the data collection was made at firm level. Therefore, farmers were the unit of analysis for this study.

5.6 Sources and Methods of Data Collection

5.6.1 Data Type and Sources

In this study, both quantitative and qualitative data were used. In order to generate these data, both primary and secondary data sources were used. Primary data were collected by using formal and informal surveys.

6. Method of Data Analysis

Both qualitative and quantitative methods of data analysis were used. The study is largely qualitative in nature. System of thematic analysis was used for the data were collected through independent questioner, focus group discussion, key informant interview, personal observation and secondary document analysis. The collected data was analyzed mainly

using descriptive data analysis method. Totally 388 questionnaires were distributed out of which 14 questionnaires were found incomplete and rejected as a result. Hence, 374 questionnaires were returned and filled correctly, which accounts 96.4% of response rate of the total sample used.

7. Major Findings of the Study

Value chain analysis has been used to examine constraints and opportunities in the enabling environment in which the chains operate and they have also been used as a tool with new methods of linking suppliers and service providers to the value chains of agricultural producers and marketers. In this thesis, value chain related constraints at production and marketing were the major constraints and opportunities at different levels of sesame value chain were briefly discussed under Table 1.1, and 1.2, respectively.

8. Farmers' Perception on Production Related Constraints

Production and marketing development of sesame was not without a problem. Understanding problems and opportunities with priorities was very important for both research and development initiatives. Production in value chain system is an important component. There are influential factors that impede the production of sesame in the study area. As it can be seen from Table 1.1 even though, production problems faced sesame producer actors were listed with severity of production. This gives clue for policy makers to focus on more critical constraints than others.

Table 1: Descriptive Statistics for Constraints of production Related Sesame Producers

Production constraints	Frequency	Percent
Labour shortage	362	96.79
Post-harvest losses	352	94.12
Irregular rain fall	350	93.58
Poor linkage among value chain actors	344	91.97
Absence sesame processing plant	341	91.17
Lower productivity	330	88.23
Limited access to credit	325	86.89
Shortage of improved variety	313	83.69
Infestation of disease and insect pests	311	83.15
Higher fertilizer price and untimely delivery	288	77.00
Existence weak farmer cooperatives	268	71.65

Source: Survey Result, 2017

It can be seen from table 1.1 that, there were serious constraints faced by sesame growers that hinders their production capacity in one way or the other. Among the most limiting factors identified by sesame growers of four Tabias, the following were found the most and critical. Such constants includes shortage of man power, postharvest loss, irregular rain fall, poor linkage among value chain actors, absence sesame processing plant, low productivity, limited access to credit, infestation of disease and insect pests, were among the most limiting constraints experienced by sesame growers at all Tabias.

The first constraint identified by respondents of this study was shortage of man power which was 96.79 percent. It is know that sesame production is labour intensive by its very nature it seeks huge labour from land preparation to threshing (Kidana, 2007). In the study area availability of man power was the

most limiting production of sesames at higher level. It is evident that every year more than 400,000 man power is required to harvest sesame produced at Kafta Humer Werdea (Mengistu, 2014) ^[17]. This result is similar to findings of Kidana (2007) and Mengistu (2014) ^[17].

The other constraint which was ranked second was post-harvest losses accounted 94.2 percent. Post-harvest loss of sesame is estimated to be high as a result of different reasons. The main reason behind having poor post harvest practice, during focused group discussion sesame growers' mention that, shortage of man power is the key factor and as result of that shattering, drying, and threshing, and in proper transportation problems were resulted. Sesame Business Network (2014) revealed that about 13% lost was observed from one hectare sesame production in 2013 production season in Kafat Humera Werda as a result pre and post

harvesting. This result is congruent with findings of other researchers (Mengistu, 2014, and Kidana, 2007) ^[17].

The other factor limiting sesame production was existence of irregular rain fall which accounts 93.58 percent. This implies that farmers are not confident in producing sesame due to uncertain weather conditions (droughts) as sesame is moderate water-demand crop with sensitive response to water. The drought will affect the emergence, while the floods will impact the seed shape. During the flowering and pod period, the water demand is large, but it is also the easiest target for staining, which will bring dysplasia, dropping flower bud and ineffective capsules. After staining, the sesame seed is small and susceptible to disease with low oil content. For sesame in maturity, the on time harvest and drying is necessary for reservation with less water content.

Existence of poor linkage among value chain actors with 91.97 percent was another limiting factor that was identified from this study. Sesame growers were complaining that, the type of linkage they have be it forward and backward linkage with chain actors was poor. This can be manifested in different forms as per their explanation. For instance, producers do not have access to search for better price and negotiate with local buyers, lack of alignment with stockholders that can be source of continuous improvement both vertical and horizontal integrations, access of financing for production and marketing functions was limited between chain actors. Most likely, each chain actor tries to maximize its own benefit at any reason which affects the degree of relationship and linkage required to have in between and at the end of the day it becomes win-lose approach instead of keeping competitive positions of chain actors at win-win level.

Lack of processing industry with 91.17 percent was also one of the limiting constraints that affect sesame growers because the possibility of value addition is low as a result the amount of benefit they earn was limited to the extent. Key informants interview with government officials in the districts indicated that a lot of work has been done by the government at sesame processing industry establishments though it is still at its initial stage to build the agro processing industry park.

Table 1.1 indicates that, diseases and pest infestation 83.15 percent were among limiting constraints that affect farmer not to produce more and this is also hinders production severely. In addition to this, sampled household indicates existence of diseases and pest can decrease production on average up to 25% in during survey year. Not only this, more than 70% of sample household said there was shortage of fungicide and other chemicals in the study area, there were no suppliers of fungicide and other chemicals in the district which limits farmer to prevent their sesame from damage of pests and insects.

Lack of improved varieties which accounts 83.69 percent were among the other limiting factors indicated by respondents especially sesame seeds with high yielding and resistant to diseases were lacking. According to districts agriculture officer there were two government owned institutions which are supplying seeds through the research and development interventions. However, all these are new varieties which are not familiar with farmers. The existing linkage between research center and a farmer is almost weak. Thus, farmers

couldn't get improved variety which is suitable to their locality.

The other type of limiting factors experience by sesame growers was having lower productivity of sesame varieties which account 88.23 percent. Since improved agronomic practice and inputs introduced by BoARD and research institutions are not introduced at required level, the level of productivity is too low when it is compared with national sesame productivity which was 8.5 quintal per hectare (CSA, 2014). During the focus group discussion conducted with key informants, they reveal that along with productivity though Humera agricultural research center is doing its best to come up with improved sesame varieties still there is research and breeding challenges. The sesame crop introduced so far is not resistant to pest and disease and needs to be harvested timely. Sesame yield level is still low and the farmers need to have pest resistant varieties to increase their yield.

As per the finding of this study depicted under table 1.1, sesame growers which accounts 86.78 percent responded that there was limited credit access. As a result, they are not able to get credit for boosting production and marketing purposes, and are thereby forced to use the informal credit system from local traders and illegal lenders at higher interest rates almost two times higher than interest rates that Dedit and credit saving institution charges which is 11 percent per 100 birr. Accessing credit from local traders forces farmers to sell their products during harvesting time when product prices are usually low. In the study area, the maximum credit limit that sesame grower can take was 15000 which was equivalent to maximum of 625 USD which is very less and of course group based type of loan in which farmers were discouraged to take not to bear risk of members of the group who fail to pay on time.

Although application of modern fertilizer like DAP plays an important role for farmers to increase production and productivity of sesame, price rise of fertilizer together with limited access to credit which accounts 77.00 percent as a limiting factor has forced farmers not to use DAP for sesame production. The increase in the price of fertilizer and untimely delivery made farmers not to use and this resulted in lowering yield and marketed surplus. Thus, the higher price and untimely delivery requires due attention by the government. To support this result a study conducted by Ayelech (2011) ^[4] stated that lack of disease control, lack of clean seedling and low yielding were the major problems affecting the production and marketing of fruits in Gomma woreda. Another study by Kindie (2007) ^[14] pointed out that lack of improved seed varieties, shortage of finance; accurate market information, poor infrastructures and high cost of transportations were the major constraints that affect the production and marketing of sesame.

Similarly, this can be supported by the findings of Ayelech (2011) ^[4] which revealed that declining prices, storage facilities, absence of market regulations and legislations, poor market integration and absence of improved technologies were major factors that affected production and marketing of fruits in the study area. Another study conducted Abraham (2013) ^[11] on value chain of vegetables in Habro and Kombolcha woreda found limited access to market, low price of product, lack of storage, lack of transport, low quality of product and lack of

policy framework to control the illegal trade route were the major marketing problems.

As depicted in table 1.1, 71.65 percent of the respondents responded that farmer cooperatives that exist in the study were weak which affects. This implies that though government is starving to build strong farmer cooperatives that can help farmers in supplying improved seeds, fertilizers, credit access, market information dissemination and buying their sesame at reasonable price etc, their actual performance were found weak and disorganized for the sesame grower farmers.

9. Farmers’ Perception on Marketing Related Challenges of Sesame

Unlike the production challenges depicted under table 1.1, sesame grower also has market related limiting factors which includes limited access to market information, lack of modern storage facilities, lack of modern packaging materials, product quality lack of enforceability of cont of producer reacts and existence of so many brokers were few to mention.

Table 2: Descriptive Statistics for Marketing Related Constraints of Sesame Producers

Marketing related constraints	Frequency	Percent
Limited access to market information	302	80.74
Poor road and telecommunication infrastructure	295	78.87
Existence of large middle men	280	75.40
Lack of modern packaging materials	255	68.18
Lack of appropriate storage facility	250	66.84

Source: Survey Result, 2017

Table 1.2 clearly shows lack of market information was among the limiting constraints of sesame producer in Kafta Humera Werda. As a result, farmers in the area were complaining that they were suffering from low price for their sesame. As the survey conducted indicates that 80.74 % of a sample farmer reported that the price they received is unfair. In addition this, during focus group discussion sesame growers indicate that, the main contributing factors was that, there were was no strong farmers cooperative that can help them at marketing their products which can help them to increase bargaining power and livelihood improvement. Majority of farmers from sampled tibias reported that, they were selling sesame on a market price where they have no power to bargaining and lowers their market margin as a result. This implies that existence of market information distribution institution was limited.

According to table 1.2, result pertaining to poor road and telecommunication infrastructure (78.8 percent) shows that it was among the limiting factor that hinders sesame growers. This can be manifested in different ways like poor transportation facilities; poor road and telecommunication infrastructure especially for producers that are located at remote areas are the major obstacles to move products and inputs to and from the markets. The problem forces the marketing costs to be higher as a result they were forced to sell at village market with lower price. This can be supported by the findings of Kodigehalli (2011)^[15]; in his study he outlined that lack of infrastructure and transportation was the major transportation problems in Coffee transportation in

India.

The other limiting marketing related factor that sesame were existence of large number of middlemen in the marketing system of sesame which accounts 75.40 percent. This indicates that, there is a need to have marketing institutions that fulfil farmers’ interest and rights over their marketable produces (e.g.cooperatives) by increase their bargaining power; minimizing imperfect pricing system practiced by sesame traders. Furthermore, they reviled that traders charge low price at peak supply periods which is not based on the real demand and supply interaction .This implies, the middlemen can decide on the price of sesame products.

As depicted in table 1.2 above, Sesame producers responded that there were facing with unavailability of adequate storage facility that will help them to keep their sesame keeping its required quality which account to 66.84 percent. In addition to this, absence of well suited storage facility results decreasing quality, weight of product in one way and it forces sesame growers to sell their products as soon as they harvest it irrespective of the price value that exist in the market which limits their return.

10. Opportunities in Sesame Value Chain at Input Supply and Production Stage

As far as sesame value chain is considered, not only the constraint but also opportunities are there along the chain, therefore in this study opportunities were identified at producer level.

According to survey conducted Agriculture office in the District is provide seedling on credit base for the farmer of seedling of sampled household is supplied by public ,availability of extension worker , availability of irrigation water, environmental suitability of area for sesame production, experience of farmers in seedling and sesame production are the major opportunities identified by this study. According to districts agriculture office there are there is a room for further increasing production and productivity of sesame and also increasing sesame quality to generate more income through expansion of government owned nursiers and encouraging model farmers and cooperative to participate in seedling production and others inputs.

11. Opportunities in Domestic Sesame Market and Export Market

The major sesame producing areas in Tigray Region are the western zone followed by northwest zone. To help the sesame production and trade in the region, the regional government together with pertinent bodies has been constructing different marketing centres that are intended to facilitate the marketing of this exportable and second source of hard currency commodity. As the main producers of the commodity are smallholder farmers, the regional government has strived to help the smooth marketing of the commodity by providing technical supports and expansion of different infrastructures. Opportunities in the international market are expansion of new market for sesame. As the interview result from sesame exporters and union indicates recently they are start sending sesame to Holland, china, turkey, Saudi Arabia, Egypt among few countries. There is growing demand for this organic and unique sesame or specialty Humera sesame both through fair

trade by cooperative union and exporters.

Agro ecology: Kafta Humera werda has suitable climate for annual and perennial oil plants. Kafta Humera is endowed with multifaceted micro climates suitable for many types of oil crop cultivation and perennial oil tree plantation; which attracts any level of investment.

Huge demand for food oil in the country: It is believed that, Ethiopia imports 80% of its food oil demand from abroad. The high demand of food oil is one of the potential business opportunities in Kafta Humera werda. The huge oil demand in the country could be an attractive investment for private investors, thus sesame seed markets will be competitive and attractive.

Smallholders' dominated subsistence agriculture farming practice. Oil crop cultivation is dependent on smallholders farming subsistence agriculture. There is enough space with less competition for commercial farming practice.

More focus from government; sesame one of targeted crops for development in the growth and transformation plan (GTP) that can be manifested through inauguration of Baeker agricultural processing industry 2016 which has huge sesame and other agricultural products processing industry.

Processing sesame within the study area and Ethiopia has the potential to both increase overall sesame revenue and open up new markets. Demand for high-quality hulled sesame for use in bakery, confectionary, and tahini applications is increasing.

12. Summary of Findings

At the farm-level, *sesame* producers faced production related which involves labour shortage, post-harvest losses, irregular rain fall, poor linkage among value chain actors, absence sesame processing plant, lower productivity, limited access to credit, shortage of improved variety, infestation of disease and insect pests, higher fertilizer price and untimely delivery and existence weak farmer cooperatives. Apparently sesame growers indicate marketing related challenge which involves limited access to market information, poor road and telecommunication infrastructure, existence of large middle men, lack of modern packaging materials and lack of appropriate storage facility the major problems.

Finally opportunities interims of agro ecology, huge demand for food oil in the country, smallholders' dominated subsistence agriculture farming practice, more focus from government; sesame one of targeted crops for development in the growth and transformation plan and establishing agro processing plant were among potential opportunities identified in this study area.

13. Suggestions

In the study area, larger proportions of farmers have reported the existence of labor shortage problem. The presence of labor shortage created frequent yield reduction and hampered market supply because farmers were unable to handle sesame production related activities on time and it would be better if the government can provide tractors to farmers so that farmers will have possibility of doing things with less amount of labor demanded using available options. In order to avoid the frequent reduction in output and increase supply, in the short run, major diseases should be controlled by strengthening the present crop protection services through availing important

chemicals required to prevent the disease at reasonable price. In the long run, development of high yielding and disease resistant varieties is a solution to the prevalence of *sesame* crop disease.

Dissemination and provision of required amount of improved seed technologies is essential in increasing the productivity, production and thereby increase volume of sesame supply. As the sesame breeders develop new varieties, producers' constraints should be considered. It is, therefore, clearly indicated that varieties should be developed by considering attributes related to quality based on local production requirements, maximum yields, resistant to drought and disease. And also regional governments and responsible stakeholder should be provided continuous training, follow up and other supports to the district seed multiplier farmers thereby increase seed provision in the area. Private and government investments on agro processing factory is highly demanded considering the existing potentials and convinces of sesame production interims of ecology, market demand and policy environments. This will help smallholder producers to enhance their competitiveness.

In order to strengthen and to make good linkage with chain actors adequate and easy way of credit access, production and marketing related training should be provided to the existing sesame growing farmers, and farmer's cooperatives. Not only this, strengthen research-extension linkages at different levels to speed up technology dissemination is highly recommended. It is vital to establish linkage mechanisms to channel information from the source to the users. This requires systematic approach that enables the research and extension to meet their target beneficiaries. In the process, these linkage activities help to improve resource use by avoiding the duplication of effort and ensuring that critical tasks do not fall through the institutional cracks.

Strengthen access of farmers and cooperatives to credit for inputs and labour. Establishing and strengthening rural savings and credit cooperatives (RuSACCOs) becomes very critical. Farmers need access to financial services to purchase inputs required for the implementation of the full package of sesame technologies. Therefore, building the capacity of farmers' cooperatives to deliver the required inputs and machinery can be one of the solutions to solve the problem. Finally, it is better to conduct marketable surplus of sesame in the study area building agro processing factory considering the existing opportunity at Werda level and high demand of Kafat Humera sesame at international level and this in turn will help smallholder producers to enhance their competitiveness.

14. References

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