Journal of Marketing and Consumer Research
ISSN 2422-8451 An International Peer-reviewed Journal
Vol.89, 2023

Soybean Production and Marketing in North-Western Ethiopia: In the Case of Jawi Distrcit Amhara Regional State

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Abstract
Soybean is one of the industrial crops that have been given high emphasis on GTP II to enhance its production and productivity through improved soybean varieties development and/or adaptation with different management and agronomic practices. Although Soybean has plenty importance to enhance soil fertility, source of nutrient to human and animals, main source of income to smallholder farmers and traders at household level as well as main source of income and foreign currency to Ethiopian economy as whole, smallholder farmers complain about its lowest output price relative to its production cost, other pulses and oil crops prices. This is due to one kilogram of soybean price could not cover the cost of one kilogram of faba bean, chicken pea, grass pea and other beans that purchased for "wet" purpose by selling soybean outputs. This research investigated the major opportunity and challenges of soybean production and marketing along value chain actors using focus group discussion, key informant interview and desk review. Storable ability, required less organic fertilizer, used as input for oil and feed industries and ongoing to enter ECX among major opportunity whereas low output price, poor linkage along value chain actors, lack of certified seed multiplier, limited usage of newly released improved soybean varieties were among major challenges of soybean sector. Therefore to stimulate the soybean sector GO and NGO should be focused on the strong linkage between soybean producers and oil and feed industries, soybean marketing agents and soybean seed multipliers with price ceiling.
Keywords: Soybean, Production, Marketing Focus group and Key informant Interview
DOI: 10.7176/JMCR/89-01
Publication date: April 30th 2023

Introduction

In Ethiopia Agriculture is the backbone of Ethiopian economy which generated foreign currency, source of food for its rural and urban population, supplied raw material for domestic agro-industries like brewery, feed, food and oil factories. Due to these facts, Government of Ethiopia has been given high emphasis on production of industrial and food security crops which has high market demand, nutrient value and productivity potentials.

Soybean is one of the industrial crops that have been given high emphasis on GTP II to enhance its production and productivity through improved soybean varieties development and/or adaptation with different management and agronomic practices since 1950 in the Ethiopian Institute of Agricultural Research (EIAR) Addisu, 2016. Pawe Agricultural Research Center(PARC) as part of the Federal Agricultural Research, it has been made huge efforts on developing, promoting and disseminating of improved soybean varieties in North western of Ethiopia for more than three decades and released nine new improved soybean varieties naming Wegayen, Gishama, Gizo, Pawe1, Pawe2 and Pawe3 varieties which played vital role on the enhancement of soybean production, productivity, generating income at household level as well foreign currency at country level. Awi Zone is among the potential areas which produced soybean potentially, introduced and disseminated improved soybean varieties in Amhara regional state, North western Ethiopia. Since 1986 soybean becomes the main source of income and nutrient to smallholder farmers, consumers, assemblers, retailer and whole seller in North western Ethiopia. During 2018/19 cropping season, more than 30,000 smallholder soybean producers were cultivated 55,317 ha of land and produced 1, 472,452 quintal soybean outputs in North western Ethiopia. Smallholder soybean producers were earned 17.67 million Ethiopian birr (ETB) of gross revenue by selling their soybean outputs at produce price in the same cropping season.

Market played crucial role on creating new agricultural product, employment opportunity across the value chain and generating income at household level. It also encourages small holder farmers to produce soybean product and contribute their role on generating of income and foreign currency for the country since it is exportable crop. Supporting the existing soybean market and developing new soybean market approach is crucial to benefit smallholder farmers as well as the whole chain actors. Hence, investigating the current soybean production and marketing approach and developing alternative marketing approach is crucial to benefit the smallholder farmers as well as the country as whole. Adisu and Tefera (2016) was conducted research in different part of the country

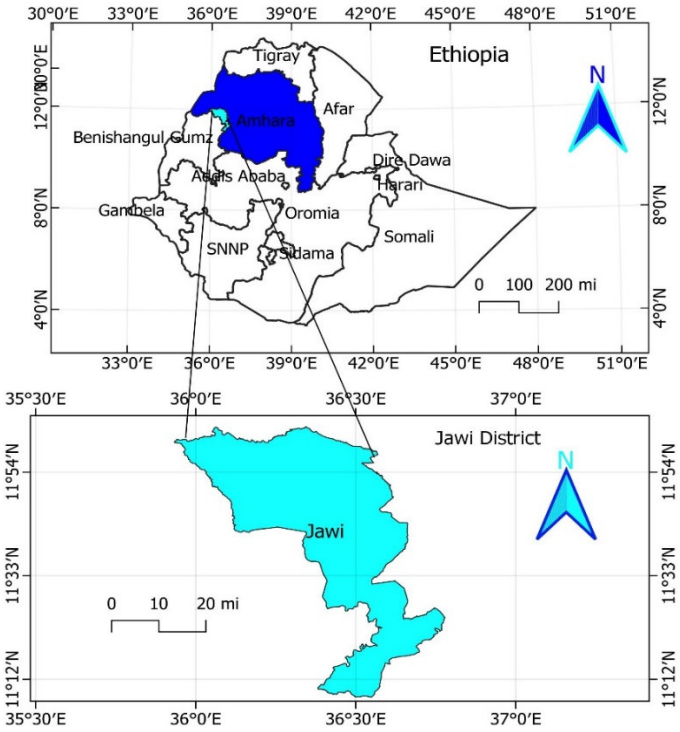
point out the importance of market access of smallholder farmers.

Although Soybean has plenty importance to enhance soil fertility, source of nutrient to human and animals, main source of income to smallholder farmers and traders at household level as well as main source of income and foreign currency to Ethiopian economy as whole, smallholder farmers complain about its lowest output price relative to its production cost, other pulses and oil crops prices. This is due to one kilogram of soybean price could not cover the cost of one kilogram of faba bean, chicken pea, grass pea and other beans that purchased for "wet" purpose by selling soybean outputs. Therefore, investigating of production and marketing of soybean, developing of soybean value chain and alternative market option is necessary with the aim of developing value chain map, identifying major actors and their roles, identifying major opportunity and constraints of soybean value chain as well as to recommend possible value chain options to benefit smallholder farmers, chain actors as well as the country as whole.

Research Methodology

Description of the study area

Jawi is found at 602 Km to North West direction far away from Addis Ababa with geographical location at 36029'17.58'' longitude and latitude of 11033'22.68''. Fendika is the capital city of Jawi district. It covers an area of 515,400 hectare with estimate population of 122,259(53.08% male) inhabitants (JDAO, 2018). The farming system of the district is characterized as mixed crop-livestock farming system dominated by cereal and pulses crops. Among the pulses, soybean takes a lion share in terms of production and area coverage (CSA, 2018). Jawi district is bounded in East by Dangla district, in South by Dangur and pawe district, in West by Quara districts and in North by Alefa Taqusa district. It is characterized as warm humid low land area with high rain fall. The district has 25 kebeles and the climate of the area is hot humid and characterized by unimodal rainfall pattern with high and heavy rainfall that exceeds from May to October. The area receives mean annual rainfall of 1250 mm and its altitude ranges from 700 to 1500 m.a.s.l with mean annual temperature of 160c to 320c which ranges 120c to 40 0c Jawi district agricultural offices (JDAO, 2018).



Data source (Sampling technique)

The study was used focus group discussion 8 up to 12 soybean producers at Jawi districts with focus group discussion, key informant interview with Agricultural experts, soybean researchers, marketing experts and ECX Manage with deeply document review.

Table Method of searching qualitative data

Sample data source	Amhara Region
Farm households (FGD)	1
Commercial farms	1
Traders/commission agents	4
Coops/unions	4
Supermarkets and consumers	3
Processors (FGD)	1
ECX	
Mistry of trade	
Agriculture Office	2
Research Center	1

Source: (Survey 2020)

Data type and collection methods

The sampling frame for the study was soybean producing and marketing population in the locations under consideration. Farmers for focus group discussion were selected randomly from the sample frame using simple random sampling technique. Actors in soybean value chain were selected randomly in collaboration with *Zone*, *Woreda* and *Kebele* experts. The actors include input suppliers, traders, coops, processors, NGOs, and etc.

Qualitative data was collected from the sampled zones, districts and kebeles using key informant interview (KII) and focus group discussion (FGD). On other hands, both primary and secondary data was collected and compiled. Primary data was collected from sample respondents (actors) using checklists. Secondary data was collected using desk review. The major data collected for the study was farmers' access to land, labor, inputs, credit, extension services, markets and technology/inputs/, farmers soybean production practices, technology use, harvesting and post harvesting issues and agricultural output transporting, marketing, processing, consumption and value addition issues. Soybean supply chains, market outlets, market share and market chain, major constraints and opportunities in soybean production and marketing was also collected.

Method of data analysis

The qualitative and quantitative data collected from value chain actors through focus group discussion and key informant interview was summarized using descriptive statistics. Constraints and opportunities of soybean production and marketing/trade was also summarized for all actors.

Result and Discussion

Composition of the Focus discussion groups In Jawi district

The focus group members' were selected based on their experience on soy bean production in the last years. The group members contain nine all are male headed households'. Ages of the group were ranges from 25 years old up to 56 years old with a mean of 37.56 years old. Education level of group members were six not able to read and write while three of them were able to read and write that were ranges from zero class up to 7 classes. Except one of them they were able to remember their phone number without seen their cell-phone. Experience of group members on soy bean production were ranges from 3 years to 11 years old with average experience of 5.11 years. During 2017/18 cropping season the group member cultivated 10.5 ha and produced 189.6 quintal of soy bean. Group member cultivated minimum 0.5 ha upto 2 ha with mean of 1.17 ha. Group members' Production of soy bean ranges from 9.6 qt to 45.6 qt with a mean production of 21.07 qt. the focus group discussion participants(FGDP) said that " Natural hazard was affected their Soy bean production during the cropping season". 66.67 %(6 out of 9) FGDP told that our soy bean production was decreased due to snow rain.

Trend of Actors and Institutions of supporting soy bean production

Soy bean production needs special integration within the producers and supporting staff to produce at its potential and marketing at appropriate producer price as well as to benefit the primary producers. Soy bean as one of cash crops it has many stakeholders' and supporting staffs should integrated and work collaborated to success soy bean crop as a sector.

Role of Agricultural Office on soybean production

Agricultural office is one of the key supporting staff that facilitated supplying of fertilizer, supply seed, access of market information, Agronomic information, credit, technical advice and training. Jawi district and kebele experts were provided different services to soy bean producers during the 2017/18 cropping season. Soy bean agronomic information, fertilizer supplying, training and technical advice services were strong enough. After these service

producers used fertilizer/NPS or DAP/ for soy bean production, sow in row and ploughing two times and weeding well. However services like market information, available of credit and demanded seed supply was weak linkage. Even the soy bean producers did not have much knowledge.

Research Center Role on soybean production

Soy bean production could be increased by using different technology methods. Some of them are using new productive and disease tolerance variety, sowing by row, using recommended fertilizer and seed, using appropriated agronomic practices. Research center give high priority on new variety release in cereal and oil crops particularly soy bean crop in the study area. Among the newly released varieties were pawe1, pawe2, pawe3, TGX and Belesa 95. These varieties were disseminated and used by the soy bean producers to increase their production and productivity levels. Research center was medium linkage on Generation of innovation, technology and providing trainings.

In addition this research center organized pre extension demonstration and stakeholder conductive meetings. This is give good opportunity to soy bean producers to select appropriate variety to their particular land. 22.22% of FGDP were participated on field day and stakeholder consulted meeting. They visited pawe1, pawe2 and pawe3 varieties. They prefer pawe3 due to its fruit setting and performance. But they argue that such experience sharing should give to all farmers. But it is weak to link others soy bean producers on oil factory and terminal markets.

Cooperative Role on soybean production

District cooperative has been delivered improved seed, fertilizer as well as has been bought soy bean products as appropriate price to link producers with terminal markets. Among the services input market service and information was better service during the cropping season. According to FGDP the services provided by cooperative was weak linkage with beneficiaries. Except input market service and information all services (output market service and information, Processing service and information, facilitating and collection soy bean production and financial service linkage) have been provided by cooperative were weak. Cooperatives always bought soy bean at 20% increment of current market price. But it gives priority for non-members of cooperative who have large amount of soy bean product to be salable and it take too much time to sell. Only one FGD participants was sold 5 qt of soy bean to the cooperatives due to such be too much time taken in the service of cooperatives.

The Role of Marketing Agency, University/colleges, Seed enterprise, Processor and Exporters

Marketing Agency, Nongovernmental organization, Universities, seed enterprises exporter and processors expected to support massive role on the soy bean production and productivity. Unfortunately NGOs, university, formal seed enterprises, processors and exporter were completely absent near the study area. As result that all service that has been expected to deliver was not delivered during 2017/18 cropping season.

Role of Informal Seed suppliers

Many farmers prefer to buy seed from relative and neighbor farmers. Two focus group members were sold 7 qt of soy bean for seed purpose to four soy bean producers This is due farmer to farmer experience sharing conducted at my soy bean farm during 2017/18 cropping season and farmer prefer my product and asked to sell for seed. Many of Soy bean producers prefer informal seed source to buy easily without many too much taken in governmental seed supplies.

The role of Agro-service dealers

In the study area, it is common buying and selling of agro-chemical supplier with many formal traders in the near town of Jawi. The traders buy from terminal and National markets and supply to soy bean producers as well as to the whole the district smallholder farmers.

According to the focus group discussion participants assured that they buy agro-chemical from the district traders. Their preference were Glay phosit chemical or ‘’metro geday’’. According to the participants Not only preference but also bought and spraying the chemical after one ploughing to eliminate existing weed and growing of new weeds. The agro dealers were support to the soy bean producers by supplying the preferable chemical inputs during 2017/18 cropping season. However, agro dealer were not support in providing of training, providing credit on agro-chemical at all.

The role of traders on soy bean producers

Jawi district is among the potential soy bean producer in Awi zone. it covers ha of land and produced qt of soy bean during 2017/18 cropping season(JARDO,2018). Many of traders started their business based on their districts potential. Formal traders in district only support in terms of purchasing soy bean grain, informal credit service for the purpose of to sell his product to himself. However, formal traders were not provide service to soy bean

producers in terms of providing information, contract agreement on grain supply, facilitating market linkages for the benefit of soy bean producers and identification of potential markets.

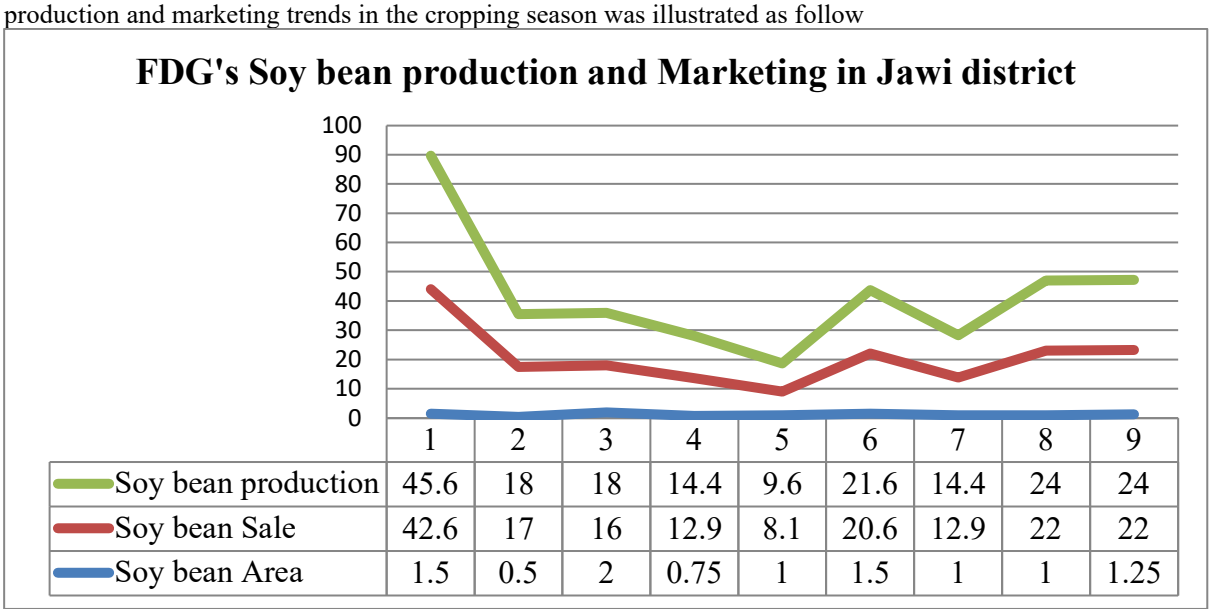
Availability of Infrastructure in study area

Focus group participants agreed that most of infrastructure has been paved and installed at District and kebele levels. Electricity, mobile network, Farmer training center, market place and storage facilities were there. Among the FGP pariticpants said that "Two of them have private storage facility for their soy bean product"

Production and Marketing of Soy bean in Argabo kebele

Soy bean production was started since 2008. Soy bean was introduced to the kebele by collaboration of Jawi District Agricultural office and Pawe research center. During that time price of soy bean was 4 birr per kilo. Even there was not demand of soy bean products District, terminal and national markets.

The productivity of soy bean in Argabo kebele was ranges from 8 qt/ha to 30qt/ha During 2017/18 cropping season. The producers sold their soy bean product from 84.38 up to 95.37%. They left 4.63% - 15.62% of their products for seed based on their products purity. Even they sold their product 100% if they were untrusted about their products purity and bought seed from other farmers or Governmental organization. According to the FGP they have been produced 189.6 qt of soy bean during 2017/18 cropping season. FGP have been produced 252 qt of soy bean during the cropping and 174.10 qt(91.83%) were sold in the district market levels. Nine participants' were left 15.5 qt(8.17%)of soy bean seed for following year. According to participants of FGD, even if they have experience of consumption of soy bean products in "Dabo, Kollo, Wot, and injera".forms they were not consumed at all during the cropping season. All of the participants plough two times including planting, 100% plant in row, 100% of them used their own saved seed, they recognized soy bean were improved their soil fertility when they sow. soy bean improved soil fertility through decomposing of its leaf in the soil. They were used 60 up to 100 kg of seed per ha based on the seed size, planting method and soil fertility of cultivated land. FGDP's soy bean production and marketing trends in the cropping season was illustrated as follow



	1	2	3	4	5	6	7	8	9
Soy bean production	45.6	18	18	14.4	9.6	21.6	14.4	24	24
Soy bean Sale	42.6	17	16	12.9	8.1	20.6	12.9	22	22
Soy bean Area	1.5	0.5	2	0.75	1	1.5	1	1	1.25

Fig2 Soy bean Production and marketing in Jawi district

Gender Role of Soy bean production

Participation of gender on soy bean production depends on culture, location the farm land whether it is near or far, labor division like male must worked at field and women must worked home. Culturally and in tradition way of think Females considered as simple and homestead workers. Based on these reasons women participant only on soy bean production process of planting, fertilizer application and weeding whereas did not participate directly on land preparation, harvesting, and threshing, selling soy bean and pesticide application. However, women participated decision making of how much to sell when and where to sell and control over the income gained from the sold of soy bean by discussed with her husband. Youth has more half role in both activities of soy bean production process except decision making and income control over the gained income from soy bean.

Rate of inputs used for soy bean

Soy bean production and productivity can be increased through usage of recommended of DAP/NPS, Urea, Bio fertilizer, Compost/Manure Herbicides and Fungicide if disease has been occurred. According to FGDP except

DAP/NPS (100% were used), all of members were not used (100%) all inputs like Herbicide, Urea, Bio fertilizer, Compost/Manure and Fungicide Producers prefer pre-emergency herbicide method of weeding and 77.78% them were used this method due to high control of not only on the existing weeds but also on new emergency weeds for present and following cropping seasons. 100 % of them were weeded their soy bean farm twice.

The main constraints of soy bean productions

Soy bean production faces different obstacles to produce effectively and efficiently. Producing the required output within the recommended of inputs and agronomic practice. Producing efficient soy bean product exhibits' the producers as well as the country's economy as whole from additional inputs costs and increased his/her annual income. However, producing efficient product is not cinch activities due to human and natural factors. Especially smallholder soy bean producers used rain fed cropping season. According the focus group discussion the bottleneck of soy bean production was

- Producers to exporters of factory of soy bean oil processer market linkage is poor
- Low price during harvesting time
- Fluctuation of soy bean price from 7 to 22 birr per kilo during the cropping season
- Lack of improved seed

The cropping calendar of soy bean production

Soy bean producers determined their sowing periods from June 20 to July 10 based on their experience. Normally this is in line with researcher recommendation of sowing period of soy bean. According the FGDP perception and practical experience the cropping calendar of soy bean production is illustrated with tick in the following table.

Main Activities	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.
Land clearing							✓	✓				
First plough									✓			
second plough										✓		
Third plough												
Sowing										✓	✓	
Fertilizer application										✓	✓	
Thinning											✓	
weeding											✓	✓
Harvesting		✓	✓									
Threshing			✓	✓								
marketing				✓	✓							
Low price				✓	✓							
Medium price						✓						
High price							✓	✓	✓			

The price of soy bean was fluctuated from 7 birr/kg to 22 birr/kg during 2017/18 cropping season. The minimum price was occurred during November and December and the highest price was occurred in May.

Access to extension service of soy bean producer

Soy bean producers how to produce, how many qt to produce for whom to produce with quality and quantity of soy bean needs great effort from governmental bodies. District agriculture office and research center try to deliver different training to capacitate skills and knowledge of soy bean producers. 22.22 % of the focus group discussion participants(FGDP) have been accessed to soy bean production, soy bean postharvest handling, seed production, expert follow up and participated in field days whereas 78.78 % of FGDP Have not been accessed to these services during the cropping season. Only 11.11% or one out of nine participantes were exposed by default to Soy bean promotion through TV. However, FGDP have not been accessed to input facilitation, Soy bean food preparation and Medias at all

Market segment of soy bean

Soy bean producers sold their soy bean product at Fendika town the capital city of Jawi district. According to FGDP some producers prefer to sell their product for those whose traders lend money during planting period. Based on this they sold their products to Wholesale traders and cooperative respectively according to their importance. The whole buyers and cooperative bought at district of Fendika town. Out of 174.10 qt of soy bean sold during the cropping season, 169.1 qt, and 5 qt was sold to whole buyers and cooperative respectively. During the cropping season the market share of whole buyers and cooperatives was 97.13 % and 2.87 % respectively. 100% of FGDP Producers know soy bean producers before sell using their cell phone, neighbor and relative farmers.

However Traders were set the price of soy bean by degrading the product of soy bean.

Source of soy bean market information

Smallholder producers search the current market price of agricultural commodities through their personal observation, using their phone, from neighbor/friend who visited the last market day and customer traders. According the FGDP all of source of information was really reliable. On average the district market place of soy bean takes 60 minute. 100 % of FGDP grading their soy bean products before selling. This practice is common in order to sell relatively high price. However producers of good quality of soy bean have not been gained premium price increment.

Traders lend money to the soy bean producers from 1,000 up to 10,000 birr without interest rate in order to sell their soy bean products after harvest during the cropping season. They agreed each other informally at the growing stage of soy bean farm. The price of soy bean was increasing year to year staring 7 per kilo reaches 22 birr per kilo now.

Production of soy bean trends

Soy bean production has been increased up to now through the increment of allocated land for soy bean and management of soy bean field very well such as row planting, weeding and using herbicides. 100% of FGDP has been increased their soy bean production via the increment of allocated land for soy bean applying inputs like DAP/NPS/ and management of soy bean field very well. 77.78 % of FGDP argue that I will decrease soy bean production by little allocation of land to soy bean whereas 22.22% said that I could increase my production with expectation of increment of price. On the other side 22.22% of FGDP I will not change my production by allocate similar cultivated land for soy bean while 77.78 % said that I will changed my production status.

Criteria of traders to buy soy bean product

Traders graded the soy bean product by their imaginary. First prefer relatively large size of soy bean product that did not mix with any crops and sand. Next prefers any product of soy bean that has not been broken seed, rust seed and wet seed. 100% of FGDP has been stored soy bean in private storage with expectation of price increment. Only one FGDP (2%) has been occurred loss of 3.79 qt soy bean during the cropping season.

Processing and consumption of soy bean

100% of FGDP said that we did not know any soy bean processing factor. So it is difficult to sell our product to processing factor directly without knowing their address. Soy bean products have been sold at district market level for local traders.

Major constraints of Soy bean production and marketing constraints

Soy bean production faces different production and marketing problem. FGDP prioritized these bottlenecks of soy bean production and marketing according their influence to the annual income.

Problem analysis of Soy bean production and Marketing constraints

Problem ranking	Types of problem	Cause of problems	Effect of problems	Possible solution	Actors that will solve this problem
1	Lack of plough machinery	Variability of plant growth and cultivated small hectare	Decrease soy bean productivity and production	Medium farm machinery should be accessed	Agriculture, cooperatives and traders
2	Harvesting machine	Broken and loss of soy bean during harvesting and threshing	Impurity soy bean product and decrease its price	Medium farm machinery should be accessed	Agriculture, cooperatives and traders
3	Lack Nearest soy bean plant	Non–competitive price and shortage of edible oil	Decrease producers income and oil consumption	Government should launch medium or large soy bean factory	Agriculture, Investor, transport and trade office
4	Lately seed supply and off season training	Inaccessible to improved variety and forced to sow their save seed	Decrease soy bean productivity and production	Timely supply improved variety and conduct off season training	Agriculture, cooperative and research centers
5	Lack of linkage with EXC	Low price of soy bean	Decrease soy bean producers income	Link with EXC	Agriculture and transport and trade office
6	Limited knowledge and skills of credit management and access	Exposed to informal money lenders	Forced to sell after harvest immediately	Financial management training should be given to soy bean producers	Agriculture and cooperative and MFI

Soy bean Marketing Actors

Jawi Trade and Transport office has been delivered many services to small holder soy bean producers as well as traders. It has been given 121 new soy bean licenses to sell and buy soy bean during the 2017/18 cropping season. 1,000,098 qt was sold to terminal market via 121 soy bean whole traders and cooperatives during the same cropping season. This traded quantity is greater than the 641,393.5qt of soybean produced in the district during the cropping season. This is may be due to improper measuring of the soybean sown area as well as the quantity produced that May be rise from knowledge and skill gap of experts. It gives soy bean trade license based on the requirement of warehouse, trade license(tin Number), Kebele identification card, working capital, asset mapping, and sometimes considered at least one employed quality control expert. It does not consider processing machine, longevity, success, trade volume and trends, sanitary certification and trade skills as requite to involve in soy bean business.

The district office has not been identified potential soy bean marketing centers during cropping season. But now it identified eighteen soy bean marketing centers and sends to Amhara trade and transport beauro to be established for 2008/19 cropping season. These are Finkika, kezkazit, kentelie and bakksa of soy bean marketing centers. There were not new trading regulations regardless to soy bean product. Rather they were given license of soy bean under bean crops trading system.

Traders paid ten birr fee for service per quintal. Jawi district has not been demarked formal soy bean market centers. But now the districts identify eighteen potential soy bean trade centers for 2018/19 cropping season. The market centers are sending to Amhara trade and transport regional beauro for formal establishment. These are divided in two main trading routs. Kezkazit and Kebtelie kebeles are Qura rout and other sixteen kebeles are Fendika town routs.Fendika is the capital city of the district. Addis Ababa, Adama and Bisheftus, Gondar city are more potential soy bean consumption areas.

Soy bean trade transaction points in Jawi district

- Finkika → Fendika town → Addis Ababa → exporters/ Oil and Food factory
- Others 15 Kebeles → Fendika town → Addis Ababa → exporters/ Oil and Food factory
- Kezkazit → Quara town → Gondar city → Addis Ababa city → exporters/ Oil and Food factory
- kebtelie → Quara town → Gondar city → Addis Ababa city → exporters/ Oil and Food factory

Opportunities of soy bean Business

- Storable ability. It did not eaten by pests in storage
- Soy bean production requires less amount of inputs like fertilizer and labor
- Used as raw material for oil and food factory

Challenges of soy bean Business

- Lack of modern soy bean trading system
- Lack of infrastructure to connect kebele with main road. Sixteen kebeles have not permanent as well as temporary roads
- Shortage of improved soy bean seed variety particularly in Jawi district
- Shortage of loanable capital
- lack of contractual farming systems

Jawi district Soybean production and Marketing during 2011 Ethiopian fiscal year (EFY)

During 2011 EFY the district cultivated about 66,402.5ha of land which 63.54 % is covered by cash crops like soybean, groundnut and sesame and among the cash crops Soybean only take covers 28.03% out of the total area cultivated that indicated an important cash crop in the district. It is also the first preferable in terms of yield gained per ha as well as cash earn. According the district Agriculture office yield assessment 733,412.75 quintal of soybean was produced during this cropping season. According The district Agriculture office report this yield is even under estimated due to some capacity and technical gaps in recording and estimating of the real soybean cultivated area as well as its yield. According the district trade and industry office report that recorded only from December to June 840,626.47 quintal of soybeans were transacted and it is greater that the soybean yield estimated by Agricultural office. According, Jawi trade and industry office there is also about 200,000 quintal of soybean turnover from 2011 EFY to 2012 EFY that could be transacted up to September 30, 2012 EFY.

Crop type	Cultivated in ha	Production in qt	Month of sell	Average price per qt in ETB	Transacted soy in qt
Maize	8,390	629,147	December	1120.92	801.89
Sorghum	7,410	391,360	January	1140.83	90,133.29
Sesame	1,1095.25	77,175.9	February	1112	166,790.13
Groundnut	12,483	349,524	March	1085	118,640.25
Soybean	18,613	733,412.75	April	1254.66	138,059.68
Finger millet	4,263.5	116,272	May	1406.5	249,248.6
Others	4,147.75	186,578.6	June	1360.75	76,952.63
Total	66,402.5	2,483,470.25			840,626.47

Source: Jawi Agriculture and Trade office, 2020

Role of Jawi district trade and industry office and soybean marketing characteristics

The district office has given various services to smallholder soybean producers as well as soybean traders at district and kebele level. Its main role is identifying of marketing centers, giving new trade license and renewed, hired market and quality control experts. The district of was identified eighteen soybean market centers, assigned ten market experts and gives 420 new and renewed soybean trade license under the pulse whole seller with the requirement of owning or renting warehouse, working capital, keble identification card and trade tin number. Ten soybean market centers namely Findika, Work meda, Dek, Sewahta*T*p, Babluk, Kezkazit, Filfil, Kebtle, Kezkez and Humbir, were started and well functioned the soybean trading at kebele and district levels where as the rest were not started formally due to poor infrastructure, long distance to walk on foot and lack of experts to create awareness at keble level. Market experts were giving market information to traders and producers as well as checked ware house and cleaned car for loading.

Jawi trade and industry office gave 420 soybean trade licenses under pulses whole sellers 280, 70, and 70 of the traders were 1st , 2nd and 3rd level traders respectively. Traders gained daily market information from Wollega Burie market information centers through message text and jawi district market experts. According the traders, the bought soybean grain was cleaned and sold before entering of New Year soybean production until September 30 by the fear of decreasing soybean selling price due to increasing of soybean surplus. In the market survey interview, traders assured that no one stored previous year soybean production until October as well as no one was started

buying of new soybean grain until November 30. In the 2011 EFY the were started buying of soybean grain since December 1 and loaded 20 car with 400 quintal of soybean each to Addis Ababa Centeral market on december 18 and 19 before starting of Ethiopian Commodity exchange(ECX) due to fear of its rules and regulation as well as decreasing of soybean selling price and bankruptcy. In this fiscal year 840,626.47 quintals were transacted at the district to Bure ECX center, Addiss Ababa central market and directly export through Admas union.

Gross margin of soybean traders at different price level in Jawi district

Trader's margin	Measurement	Lowe price	Average price	Maximum price
Purchasing cost	ETB/qt	1120	1300	1400
Sack cost	ETB/qt	11	11	11
Transport cost	ETB/qt	70	90	150
Loading and unloading	ETB/qt	28	33	38
Ranking fee	ETB/qt	3	3	3
Commission fee	ETB/qt	5	5	5
Others fee	ETB/qt	4	4	4
Gross revenue	ETB/qt	1350	1550	1750
Net revenue	ETB/qt	109	104	150

Source: (Market survey, 2020)

Major marketing challenges

- Shortage of ware houses at marketing centers as well as Ethiopia commodity exchange
- Even the market center was not well delineated and regulated by rules
- There is no well cleaning checking space at the ECX centers epically at Burie center due to long rainy season and mud.
- Increasing of loading and unloading costs
- It takes time to unload at ECX centers and exposes the trader for additional expense

Conclusion and Recommendation

The study was conducted at Jawi district in Amhara region North western Ethiopia, with the purpose of investigating the major opportunities and challenges of soybean production and marketing along different actor of soybean sector to boost the production and productivity of soybean as well as to benefit soybean producers by focusing on production and marketing of soybean sectors and linking in to agro-industries. According to the focus group discussion and key informant interview conducted on soybean producers and soybean researchers, keble and district experts even though the soybean sector has many opportunities such as require few plowing frequency, gives high yield per hectare in the study area than other beans, low organic fertilizer, storable ability, used as input for oil, food and feed industries, the sector faced with low and fluctuated output price, poor linkage among soybean actors, lack certified private or governmental soybean seed multiplier, limited usage of newly released soybean varieties particularly $Pawe_1$, $Pawe_2$ and $Pawe_3$ which has high yielding and oil contents, lack of contractual farming systems.

Although different market sectors were involved at district soybean marketing, the sector faced different challenges at district level such as lack of standardize ware soybean ware house, soybean market centers were nor well delineated and functioning, does no well cleaning checking at ECX centers and it take time to unload and expose to additional costs for traders. Despite trader's faces different challenges to transact their soybean commodity, they are more profitable than soybean producers in collectivity that earned 104 ETHB per quintal with simple transaction costs.

This needs to be faire soybean sector in order to continue the production and marketing of the sector. Hence governmental organization should focus on productivity and production of soybean in the study area in order to supply enough amount of soybean output to domestic agro industries as well as to fill the demand of edible oil in the country. Therefore to stimulate the soybean sector GO and NGO should be focused on the strong linkage between soybean producers and oil and feed industries, soybean marketing agents and soybean seed multipliers with price ceiling.

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