

St. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES



INSTITUTE OF QUALITY AND PRODUCTIVITY MANAGEMENT

**CHALLENGES OF PRODUCERS AND EXPORTERS OF PULSE AND
OILSEEDS ON QUALITY CONFORMITY PROCESSES IN ETHIOPIA**

BY
ABDO ASHUTA WAKO

DECEMBER, 2020
ADDIS ABABA, EHTIOPIA

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**A THESIS SUBMITTED TO St. MARY'S UNIVERSITY, SHOOLOF OF
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ADDIS ABABA, ETHIOPIA**

**St. MARY UNIVERSITY, SCHOOL OF GRAGUATE STUDIES,
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**DECEMBER, 2020
ADDIS ABABA, ETHIOPIA**

DECLARATION

I the undersigned, declare that this thesis is my original work, prepared under the guidance of my Advisor Dr.Malaku Girma. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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December, 2020

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LIST OF ABBREVIATIONS

CABs – Conformity Assessment Bodies

CBE - Commercial Bank of Ethiopia

EPOSPEA - Ethiopia Pulses Oilseeds & Spices Processors Exporters Association

ERCA – Ethiopian Revenue and Customs Authority

ES/ISO – Ethiopian Standards/ International Standard Organization

ESA – Ethiopian Statistics Authority

FAO - Food and Agricultural Organization

GDP – Gross National Product

MOT – Ministry of Trade

NBE – National Bank of Ethiopia

NCOQ - National Cost of Quality

NQI - National Quality Infrastructure

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ABSTRACT

The purpose of the study is to assess the challenges of producers and exporters on quality conformity assessment process of pulse and oilseeds. The study attempts to provide the stakeholders the examined and identified main challenges on the export operation of the quality conformity process for pulse and oilseeds exports.

Primary data was collected using questionnaires from 385 experts from the population of 10,350 exporters through purposive sampling method; the same questionnaires were collected from 12 CABs. In addition interview was held with selected 25 managements and quality experts from Exporters to strength and supports the idea got from questionnaires. Moreover document analysis of 12 CABs was analyzed that helps the researchers to triangulated and crosschecked the data. The secondary data was collected from related literatures, websites and researches. The primary Data gathered has analyzed using descriptive and SPSS statistics and presented using tables and figures.

Though this study tried to examine and identify the major challenges of the exporters regarding to quality conformity process of pulse and oilseeds summarized in four divisions, One product related: poor trashing and transportation, proper warehouse and management system, high moisture product, insect damage, impurities of the product, aflatoxin, MRL, poor stitching and bags, weight loss and marking and timely delivery etc. Two Management and Staff related: lack trained staff, Awareness and understanding, management commitment and management system etc. Three Customer feedbacks related: Collected indirectly through interview of exporters and CABs. Four CABs service related.

Finally this study concluded that as the main challenge or Non conformity of these product identified above the policy makers and stakeholders to work on it so as to minimize the challenges and non-conformity to minimize again the non- conformance cost of the exporters and NCoQ in the country's economy since no one has been able to see and measure it so

CHAPTER ONE

INTRODUCTION

This chapter deals with the background of the study, the statement of the problem, the objectives, the significance of the research work, the limitation and its scope, definition of basic terms and the organization of the study.

1.1. Background of the Study

The crops grown in Ethiopia are diverse following the mosaic agro-ecologies derived from the soil types -ranging from fertile soils to sand and cropping altitude from more than 3000 mt to less than 600 mt asl. About 146 crop types in Ethiopia and oilseeds are among the major ones. Sesame and Niger seed dominate largely the oil seeds category. Niger seed is oil crop of Ethiopian origin like coffee. (EPSPEA, 2017)

Oilseeds are a mainstay of the rural and national economy in Ethiopia. After coffee oilseeds are the second largest export earner for the country and already more than 3 million smallholders are involved in its production (Dawit, 2017). Includes Sesame seeds, Niger seeds, Linseeds, Soya beans, Pumpkin seeds, Hemp seeds, Safflower seeds, Mustard seeds, Poppy seeds and Pulses are a traditional crop and a staple food in diets around the world and represent over sixty species of “grain legumes”, which are typically boiled and eaten. The climate smart crops with little water requirements are grown in climate zones ranging from tropic to temperate. Main pulse crops are Kidney beans, Chickpeas, Mung beans, Lentils, Broad beans, dried leguminous vegetables (IMF, 2018).

The annual production of pulses is estimated at 2.5 million metric tons, according to official government figures reported by the (CSA, 2017). While year-to-year production levels fluctuate mostly because of weather conditions, overall pulse production during the last decade has increased about 700,000 metric tons. This growth is mostly attributed increased plantings due to strong prices resulting from steady local and international demand. Pulse crops cover an estimated 1.5 million hectares, accounting for 12 percent of total grain crop area, and have relatively low average yields, ranging from 1.2-2.0 metric tons per hectare.

Faba beans accounted for nearly one-third of pulse production, at 855,000 metric tons in 2016/17. The next most widely-produced pulses were red kidney beans, field peas, and chickpeas, each

with similar production levels, ranging from about 340,000-355,000 metric tons. Other major pulses being produced are grass peas, lentils, and white pea beans (CSA, 2017).

Crop productivity per unit area of land in Ethiopia remains very low due to various constraints including the limited use of appropriate productivity boosting technologies and appropriate crop production husbandry practices. Crop pests and diseases do also contribute to the low level of productivity and huge post-harvest losses of up to 30%. For the majority of the smallholder producers, the economic benefit derived from the cropping enterprise is unsatisfactory because of the limited level of value addition to the produce and the inadequate integration with market (FAO 2019, Addis Ababa).

In terms of quality, the study of oil seed and pulses storability and the effect of various factors are of great importance. Since, oilseeds and pulses have great economic value; the storability can be understood in the perspectives of germination as well as oil content and oil quality. Oilseeds and pulses quality is affected by several factors like environmental conditions during seed production, pests, diseases, seed oil content, seed moisture content, mechanical damages of seed during processing, packaging materials, pesticides, air temperature and relative air humidity in storage. (Jaya Singh, .2011).

However, this paper mainly concentrated on the main challenges of producers and exporters on pulses and oilseeds in relation to quality conformity assessment process from production post-harvest to export. The main producers and exporters companies were assessed to collect challenges on meeting the quality standards of pulse and oilseeds. The study covers Producers, Exporters and CABs organization in Ethiopia and to assess what challenges they face on the process of quality conformity assessments of pulse and oilseeds for export, so that the concerned organization to minimize or eliminate this challenges to increase the profit for the producers and exporters as well as the nation economy. This paper was concerned and taken the domestic activities and the data collected and analyzed with domestic respondents and data only.

1.2. Statement of the Problem

The pulse and oilseeds exporters and producers face challenges of quality conformity assessment aspects throughout processing and delivering of their product to end customers to meet customer expectations, as some study and report state Ethiopian pulse and oilseeds banned and rejected by many countries. Moreover many buyers complaining on Ethiopian pulse and oilseeds quality

(Asefa,2018) Pulses and Oilseeds quality is affected by several factors like environmental conditions on seed production, and poor postharvest management like pests, diseases, seed oil content, seed moisture content, mechanical damages of seed. Others like packaging materials, pesticides, air temperature and relative air humidity in storage (Singh, 2011).

Thus, this study attempted to identify and address the challenges on quality conformity assessment processes through investigation on producers, exporters and CABs organization by means of questioners, interview and document analysis on this organization and secondary data so that the concerned organization to minimize or eliminate this challenges to increase the profit for the producers and exporters as well as the nation economy.

1.2.1. Basic Questions

- What is the extent of awareness of the producers and exporters in providing quality Pulse and Oilseeds?
- What are the challenges regarding the competencies of staffs in producers and exporters implementing quality of products?
- What are the complaints and feedbacks of buyers or client on the qualities of the pulse and oilseeds?
- To what extent do CABs provide support to the producers and exporters of the pulse and oilseeds?

1.3. Objectives of the Study

1.3.1. General Objective

The major objective of this study was to examine challenges of the producers and exporters in quality conformity process of pulses and oilseeds

1.3.2. Specific Objectives

The specific objectives of the study are

- ✓ To map out the extent of awareness of the producers and exporters in providing quality pulse and oilseeds.
- ✓ Examine the competencies of the staff in producers and exporters on pulse and oilseeds quality.

- ✓ To apprise the extent of complains and feedbacks of buyers on producers and exporters quality of pulse and oilseeds.
- ✓ To examine the extent of CAB's perception on producers and exporters quality of pulse and oilseeds.

1.4. Significance of the Study

To provide information on major challenges of pules and oilseeds quality conformity assessment process for producers and exporters.

To examine and map out the gap and challenges that hinder exporters to provide the quality product, so that the producers and exporters have to act on it to reduce these challenges and outline intervention area by the government and private bodies.

Identified and addressed challenges to be used by NQI, policy makers, private CABs, producers and exporters so that reduce cost of production and export, thus increase the profit of exporters as well as the economy of the country.

1.5. Delimitations of Study

Pules and oilseed are the main exported commodities from Ethiopia next to coffee with more than ten thousands Producers and exporters from different part of Ethiopia. However the study covered only the challenges of Producer's post-harvest (having their own production area and exports it) and the Producers and Exporters in Ethiopia on the year 2020. Specifically, the study has been focused on the assessing, identifying, organizing, analyzing, and compiling the challenges related to quality of pulse and oilseeds at national level that hinder producers and exporters to meet needs of their customers. Thus to map out these challenges the producers, exporters, government and private CABs (conformity assessment body) that participate on pulse and oilseeds export were identified and assessed for data collection. Moreover covers the challenges happened from post-harvest up to exports of pulse and oilseed in relation to quality conformity assessment process. Furthermore, institutions involved directly or indirectly in pulse and oilseeds marketing have been assessed to generate relevant secondary data.

1.6. Organization of the Study

This study was structured into five chapters. The first chapter, which is the introductory part, deals with the background of the study, overview of the study area, statement of the problem,

objectives and significance of the study, scope of the study and definition of the key terms used in the study. Chapter two presents the review of the related literature which treats the fundamental of the quality challenges on pulse and oilseeds. Moreover, the literature review describes theoretical issues regarding quality inspection and certification emphasizing on the two products. The research design and methodology is explicitly presented in the chapter three of the research document. Chapter four is dedicated to the Finding and Results of the research outputs. Finally, the summary of major findings, conclusions and recommendations are explained in chapter five. List of reference materials used for the study, sample questionnaire, Interview, observation, are attached as appendices at the end.

1.7. Limitation of Study

There were some boundaries that had to be set as this research completion was limited to a specified time frame and also there were some obstacles faced during data collection that affected output of the research.

These were the pandemic disease (COVID-19) affect the collection of data on time and restrict the respondent on study process. The response rate could not obtained 100% as some respondents hesitate to give information and was not willing to dedicate their time to fill the questionnaires and interview. There were absences of clear data that show exporters that have their own production area and that have not to assess their post-harvest quality challenges.

1.8. Definitions of Key Terms

Product inspection: - An inspection is an activity such as measuring, examining, testing or gauging one or more characteristics of a product and comparing the results with specified requirements in order to establish whether conformity is achieved for each characteristic. (This definition comes from the ISO 2859 standard)

Product certification is the process of certifying that a certain product has passed performance tests and quality assurance tests, and meets qualification criteria stipulated in contracts, regulations, or specifications (typically called "certification schemes" in the product certification industry)

Product Testing:- also called consumer testing or comparative testing, is a process of measuring the properties or performance of products (mostly chemical, biological character of the product)

Exporters: - a person, country, or business that sells goods to another country: 2. a person, country, or.... Learn more. Or one that exports; specifically : a wholesaler who sells to merchants or industrial consumers in foreign countries

Producers: - one that grows agricultural products (pulse and oilseeds) or manufactures, processes these product for further uses in land or to export

Pulses and Oilseeds: - Pulse comes from the Latin word **pulse** meaning thick soup. Beans, peas, lentils, and chickpeas are all very nutritious. All pulses are very high sources of fibre, an excellent source of folate, an excellent source of iron if eaten with a source of vitamin C, high in complex carbohydrates, and low in fat. Oilseeds A seed oil is a vegetable oil that is obtained from the seed (endosperm) of some plant, rather than the fruit (pericarp)

Conformity: - assessment provides the means to verify compliance of products to these expectations, in accordance with relevant standards

Conformity assessment body: - company who performs the assessment of the quality on product with the given standard or requirement

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Production of Pulse and Oilseeds in Ethiopia

Crop production

Historically, international trade in agriculture has been heavily distorted due to the nature of the production and products and the huge subsidies in developed countries and taxation in developing countries following the different importance in the economic contribution of the sector in respective countries and still the improvements in trade distortion are minimal (Dawit, 2017). Crop productivity per unit area of land in Ethiopia remains very low due to various constraints including the limited use of appropriate productivity boosting technologies and appropriate crop production husbandry practices (Dawit, 2017). Crop pests and diseases do also contribute to the low level of productivity and huge post-harvest losses of up to 30%. For the majority of the smallholder producers, the economic benefit derived from the cropping enterprise is unsatisfactory because of the limited level of value addition to the produce and the inadequate integration with market (FAO 2019, Addis Ababa).

2.2. Production Survey of Pulse and Oilseeds

Ethiopia is among the world's top 10 pulses producers, the second-biggest Faba beans producer after China and the sixth biggest chickpea producer. In total, 2,980 tons of pulses have been produced on 1,600 hectares in Ethiopia (NBE, 2019). Pulses play a critical role in agricultural production as a driver of economic growth and food security. As Pulses constitute approximately 13% of the cultivated land and account for approximately 10% of the agricultural value addition, they are critical to smallholder livelihoods in Ethiopia. Pulses contribute to smallholder income as a higher-value crop than cereals and to diet (especially for peri-urban and rural consumers) as a cost-effective source of protein which accounts for approximately 15 percent of protein intake. Moreover, pulses offer benefits for natural soil maintenance via nitrogen fixation, which improves the yields of cereals through crop rotation and which can also result in savings for smallholder farmers from reduced fertilizer use by a maximum of 60% (NABC and FME-CWM 2015; Yirga and Rashid 2010; Yayo Negasi 2016).

The results of the year 2017/18 (2010 E.C.), Meher Season Post-harvest Crop Production Survey has been summarized and quantitative information with regard to farm management practice, land use and Utilization of agricultural produce will be made available at national and regional reporting levels, consecutively, following this report. This report, however, presents quantitative information on cropped land area and production of both temporary and permanent crops at Country and Regional reporting levels. In this section of the report, therefore, brief discussions on the major findings of the Survey are presented (Source Central Statistics Agency, 2018). Production has expanded over the last decade to 2.5 million metric tons in 16/17 (Jun-Jul). Almost 14 percent of pulse production or 340,000 metric tons was exported, generating \$255 million in foreign exchange earnings. Pulse exports are the third largest forex earner after Coffee and Oilseeds. Pulses are imported for humanitarian food relief. Pulses play an important role in Ethiopia's food security and economy. Most Ethiopians eat protein-rich pulses every day in a variety of traditional dishes. In 2017/2018, Ethiopia's major exports included coffee (29.5%), oil seeds (14.9%), pulses (9.5%), Chat (9.3%), cut flowers (8%), and gold (3.5%) Ethiopia's total export earnings by value declined by 2.3% in 2017/2018 from the previous year depressed commodity prices are the leading cause of this drop in export. The Oil seed and Pulse export is one of the principal sources of Ethiopia's foreign earnings next to Coffee, Chat, Hides and Skins., besides the export most of the Pulses and Oilseeds are used for domestic consumption, and further processing (Oil extraction, Fortified food, Corn soybean blended). Among the various Oil seed and Pulse crops, the following are the major ones exported to foreign countries (Central Statistics Authority (CSA, 2018) and Ethiopian Revenue & Customs Authority (ERCA, 2018).

Production summary of Pulse and Oilseeds 2016/17 - 2018/19 Years

The Crop Production of total area and production survey of 2016/17 (2009 E.C) years summarized below Survey indicate that a total land area of about 12,486,270.87 hectares are covered by grain Crops i.e. Cereals, Pulses and Oilseeds, from which a total volume of about 266,828,807.04 Quintals of grains are obtained, from private peasant holdings (See Table 1 below).The 2017/18 (2010 E.C.) of Meher Season Post-harvest Crop Production Survey indicates that total land areas of about 12,677,882.27 hectares are covered by grain crops i.e. Cereals, Pulses and Oilseeds, from which a total volume of about 306,126,383.06 quintals of grains are obtained, from private peasant holdings (See Table 1 below). The 2018/19 (2011 E.C.) of Meher Season Post-harvest Crop Production Survey indicate that a total land area of about 12,727,191.21 hectares are

covered by grain crops i.e. Cereals, Pulses and Oilseeds, from which a total volume of about 315,602,058.49 quintals of grains are obtained, from private peasant holdings (See Table 1 below).

Table 1. Total Area and Production of Grain Crops for Private

<i>Crop Category</i>	2016/17 (2009 E.C.)_Total Area		Total Production	
	<i>In Hectares</i>	<i>%</i>	<i>In Quintals</i>	<i>%</i>
Cereals	9,974,316.28	79.88	231,287,970.83	86.68
Pulses	1,652,844.19	13.24	27,692,743.11	10.38
Oil Seeds	859,110.39	6.88	7,848,093.10	2.94
Grain Crops	12,486,270.87	100.00	266,828,807.04	100.00
Crop Category	2017/18 (2010 E.C.) Total Area in Hectares	%	Total Production in Quintals	%
Cereals.....	10,232,582.23	80.71	267,789,764.02	87.48
<i>Pulses.....</i>	1,598,806.51	12.61	29,785,880.89	9.73
<i>Oil Seeds</i>	846,493.53	6.68	8,550,738.16	2.79
Grain Crops ...	12,677,882.27	100.00	306,126,383.06	100.00
Crop Category	2018/19 (2011 E.C.) Total Area in Hectares	%	Total Production in Quintals	%
Cereals.....	10,358,890.13	81.39	277,638,380.98	87.97
<i>Pulses.....</i>	1,620,497.30	12.73	30,113,480.57	9.54
<i>Oil Seeds</i>	747,803.78	5.88	7,850,196.94	2.49
Grain Crops ...	12,727,191.21	100.00	315,602,058.49	100.00

(Central Statistics Authority (CSA, 2018))

2.3. Export of Pulse and Oilseeds from Ethiopia

According to information received from individual exporters as well as trade associations and confirmed by the Ministry of Trade, exports of oilseeds and pulses including sesame have not been profitable for the last three to five years and many specialist agricultural exporters have gone out of business, including a large number that previously exported to the European Union. Ethiopia is one of the centers of biodiversity for several oilseeds (Sesame seed, Niger seed, Mustard seed, Pumpkin seed, Sunflower seed, Rape seed, Castor seed and Groundnuts) which can be considered specialty high-value seeds on the international market. Oilseeds are the second-largest export commodity from Ethiopia and sesame seed is the main oilseed export product (Ayana 2015). Within Ethiopian agriculture, oilseeds are the most important export crop in terms of volume and are almost on par with coffee in terms of export value (NABC and FME-CWM 2015). The growth and improvement of the oilseeds sector can substantially contribute to the economic development at the national, regional and family level. This fact has been recognized by the Ethiopian government, which is enhancing the oilseeds sector by investment incentives such as duty and tax income exemptions from 2 to 8 years for foreign investments (Wijnands, Biersteker, and Van Loo 2009).

The Export of pulse and oilseeds from Ethiopia to different countries in the 2016-2019 fiscal years in below

Table 2. The Export of Pulse and Oilseeds from Ethiopia to different countries

Crop Category	Export quantity KG	Percentage	Year of export	Value in USD
Pulses	346,828,678	59.86	(2018/19 (2012 E.C))	223,506,220
Oil Seeds	228,580,573.2	39.45	(2018/19 (2012 E.C))	330,952,571.4
Oil Seed Processed	4,021,930.71	0.70	(2018/19 (2012 E.C))	5,974,738.922
Total of pulse & oil seeds	579,431,182	100.00		560,433,530.3
Crop Category	Export quantity In Quintals	Percentage	Year	Value in USD
Pulses	459,697,708.7	65.06	(2017/18 (2011 E.C))	265,458,926.4
Oil Seeds	243,072,894.3	34.40	(2017/18 (2011 E.C))	363,128,474.8
Oil Seed Processed	3,841,798.89	0.54	(2017/18 (2011 E.C))	5,576,411.458
Total of pulse & oilseeds	706,612,401.9	100.00		634,163,812.7
Crop Category	Export quantity In Quintals	Percentage	Year	Value in USD
Pulses	438,412,601.1	57.22	(2016/17 (2010 E.C))	268,123,197.1
Oil Seeds	320,750,867.5	41.86	(2016/17 (2010 E.C))	395,788,352.4
Oil Seed Processed	7,055,675.11	0.92	(2016/17 (2010 E.C))	6,079,239.41
Total of pulse & oilseeds	766,219,143.7	100.00		669,990,788.9
Crop Category	Export quantity In Quintals	Percentage	Year	Value in USD
Pulses	392,921,938.7	54.03	(2015/16 (2009 E.C))	280,082,268
Oil Seeds	319,862,482.1	43.98	(2015/16 (2009 E.C))	344,849,151.1
Oil Seed Processed	14,400,698	1.97	(2015/16 (2009 E.C))	6,746,873.849
Total of pulse & oilseeds	727,185,118.8	100.00		631,678,293

(Central Statistics Authority (CSA), 2018)

2.4. Quality of Pulse and Oilseeds

Though the oilseeds and pulses industry has grown, more progress is expected to increase yields, improve farm gate prices, and increase income from exports. To fulfill such needs, ensuring of the quality aspects of agricultural produce plays a critical role. In terms of quality, the study of oil seed and pulses storability and the effect of various factors are of great importance. Since, oilseeds and pulses have great economic value; the storability can be understood in the perspectives of germination as well as oil content and oil quality. Despite the high potential for increased production of sesame and the rapidly growing demand in the international market for Ethiopian sesame, it has been observed that the supply chain of sesame also suffers from different challenges including the adulteration of sesame or mixing of sesame with different sources of varying quality and a lack of transparency among chain actors Sesame being sold as plain seed while quality characteristics such as oil content, percentage of admixture, fatty acid profile are not commonly analyzed due to lack of capacity to accurately measure the quality standards of sesame (Zerihun, 2012).

Oilseeds and pulses quality is affected by several factors like environmental conditions during seed production, pests, diseases, seed oil content, seed moisture content, mechanical damages of seed during processing, packaging materials, pesticides, air temperature and relative air humidity in storage. (Jaya Singh, .2011). The low productivity and quality, poor market infrastructure, long and traditional marketing channels, poor warehouse facilities are identified as the major challenges for the Ethiopian oil seed and pulse export and producers (Abera, 2009).

2.5. Export-related National Cost of Quality (NCoQ)

Based on the data collected, the average annual conformance cost for export products was about 1.3 million US dollars; of which, 95% was associated only with four products: oil seeds, cereals, leather, and anti-mortem sheep and goat also revealed that conformance cost for export-related products had been continuously increasing since 2009/2010. This shows that quality infrastructure has been deployed in the sector by the government and other stakeholders in the export market. Also, the export-related nonconformance cost was much higher in the coffee market when compared to the other export products. On average, it constituted more than 269 million US dollars. The average annual sale from coffee was estimated to be more than 650 million US dollars. This suggests that the nonconformity quality cost of coffee export market was

much severe when compared to the average annual income that the country gets from the export market. Although coffee constituted the majority of Ethiopia's export value, customers in the world are also becoming more and more sensitive to the quality of products and services, as a result of which the government is largely investing in quality conformance of coffee. Unfortunately, the nonconformance cost of coffee became higher than that of its conformance cost. This is not good news for the Ethiopian export market since failure costs are by nature more dangerous than that of conformance quality costs which are basically incurred to protect the occurrence of nonconformance quality costs. Recently, however, the price of coffee has been decreasing while this could be as a result of the recession in the global economy, the decrease in quality of coffee may also contribute to the market price fall, though this needs further investigation, also showed that the trend of nonconformance costs drastically increases from time to time. Though not as overstated as that of the nonconformance cost from coffee products, exporting live animals and meat exhibited average annual costs of 3.04 and 16.80 million of US dollars, respectively. Generally, the nonconformance quality cost of these three exported products increased at an average rate of 33% of their total export value from 2008/2009 up to 2012/2013. The main problems incurring high nonconformance costs of quality in the coffee export market include poor quality of washed coffee; defects in unwashed coffee; reprocessing; and other problems which disqualify coffee from the export market, but only fit for local markets. Of these, 54% was caused from the failures observed in the export of unwashed coffee products. On the contrary, in the hope of not to losing with global markets, intensive controls are being held in export products. In these instances, there is high probability of rejecting products with comparable high quality. This however resulted from the lack of adequate quality regulation systems in the country. To some extent, the low nonconformance quality cost of imported products might be due to the disorganized data management of the concerned government offices. Now, it becomes clear that investing only in infrastructure for inspection and control requirements would be of no value. While such costs principally belong to the appraisal part of the conformance cost, the study revealed that all stakeholders in the sector should primarily focus on preventing the existence of quality problems or preventive part of the conformance cost (Assefa Leta, 2015).

Lastly, the competence of conformity assessment and regulation bodies in the country should be evaluated and enhanced soon. Especially, those institutions set to regulate the quality of exported

products which have mandatory quality requirements need immediate remedies. Therefore, the NCoQ determined in this study will help to clearly identify the national losses due to nonconformity and also the investment made to comply with customers' requirements and standards. It will then help to prepare a future course of action. In general, the following important points are forwarded as policies in a nation.

Investment in NQI so as to minimize losses from poor quality, devising appropriate policy options on NCoQ; and Education of the public about quality/standards of products/services so that the national investment or the national conformance cost decrease with time (Assefa Leta, 2015).

The Ethiopian government places higher focus on export-oriented markets so as to get good revenue, and sustain its economy. Foreign currency can be increased either by increasing the export volume or reducing nonconforming products. In this regard, efforts have been underway to increase production; but, efforts towards reducing the nonconformance of products were, as such, not exciting. On average, the country is spending around 272 million of US dollars every year from quality problems only in the import–export market of which 99% is incurred due to the nonconformance of export products. The NCoQ measurement made in this study signifies the severity of nonconformance costs and the importance of investing in quality infrastructures. It was also observed that the conformance system for export products was much tighter than the conformance system for import products (Birhanu Beshah, Ephrem Gidey & Assefa Leta, 2015).

2.6. Standards or Requirement for Pulses and Oilseeds

This topics elaborates different standards used locally and internationally to checks the quality of pulses and oilseeds trough testing, inspection and certification body, and how many of the standards and requirement were satisfied and why it will not met by the suppliers. Exporters of oilseeds and pulses must comply with strict requirements to be fully accepted on the European market. In both groups of products, food safety (including mechanisms to prevent contamination) is a major concern and is an important focus in legislative and additional requirements. In terms of niche requirements, the growing importance of organic and fair trade schemes follows the European trend towards ethical consumption (CBI Ministry of Foreign Affairs, 2016).

The following requirements apply in general to oilseeds, as well as grains and pulses.

Certification schemes (ISO: 17065:2012)

Food Safety Certification (ISO 22000):- schemes that used to verify the hygiene and safety of the product in the processing factory

HACCP Certification An important aspect involved in controlling food-safety hazards is defining critical control points (HACCP) by implementing food

To ensure food safety and avoid environmental damage restricted the use of certain chemicals (MRLs. There are three types of checks: a) Documentary checks b) Identity checks c) Physical checks

Organic Certification: - Schemes used to verify the product produced without chemical naturally

GLOBALG.A.P. a pre-farm-gate standard covering the process from farm input to non-processed product.

GMO-free certification the production of non-genetically modified organism

Fair trade products are produced with an extra focus on the social conditions in the producing areas.

Fair for Life has a similar proposition and is a standard for companies which demonstrate decent working conditions and commit to fair sourcing and responsibilities towards their primary producers. **Purity/grade certification**

SMETA certification SEDEX Members Ethical Trade Audit (SMETA) is an important tool to some of the main European/international companies. This could be used as a tool to streamline exporter's information to multiple customers around four pillars: Labor Standards, Health & Safety, Environment and Business Ethics (CBI Ministry of Foreign Affairs 2016).

Inspection parameters (ISO: 17020:2012)

Inspection mostly physical judgment requires the expert knowledge to analysis the parameters required during analysis and some of the specification sets for pulse and oilseeds as Ethiopian standards (ES)

Table 3. Standards for pulse and oilseeds

Product	Standards no.	Standards Title
Beans	CES 07-2013	Pulses Grading Of Beans
Green Peas	CES 122-2013	Green peas-Specification
Lentils	CES 08-2013	Pulses Grading Of Lentils
Chickpeas	CES 09-2013	Pulses Grading Of Dry Peas
Oil seeds	CES 05-2013	Oil Seeds-Specification
Oil seeds	CES 06-2013	Oil Seeds Method Of Packaging

Some of the most important quality factors concerning oil seeds and pulses inspected by above specification are: Color, Odor, Flavor, Oil content, Moisture content, Size, Uniformity of seeds, Purity and damaged/moldy

Other requirement

Labeling requirements

Packaging requirements

Corporate social responsibility and sustainability

Testing or laboratory inspection (ISO: 17025:2012)

Testing includes the chemical and biological analysis of the product in a laboratory not by the expert judgments some of the parameters analyzed by lab listed below

Chemical test

Maximum residue levels of pesticides (MRL) and other substances

Metals

Crude Protein and Crude Ash

Crude Fat, Urea's Index and per oxide value

Biological test: - Aflatoxin (G1, G2, B1 B2), Total Aflatoxin, Yeast & Mold count, Total coliform count, Salmonella;

2.7. Differences between Testing, Inspection and Certification Company

Generally the CABs perform and assure the quality of products in three different ways these are

Testing

Inspection
Certification

The differences between the three conformity assessment bodies and how they are overlapping in providing services Conformity Assessment body on ISO 17025, 17020, and 17065 how they overlap as picture shown Figure 1



Figure 1. Model demonstrating the overlapping activities of the three bodies in relation to the determination of conformity with the requirements

2.7.1. Private and governmental Testing, Inspection and Certification Company

This section explained the private conformity assessments bodies' local and international registered company in Ethiopia and performing agricultural product quality assessments activities. This bodies performing Testing, inspection and certification are called Quality conformity assessments bodies (CABs).

2.7.2. Private CABS (Testing, Inspection and Certification Company)

The conformity assessments bodies that registered to operate on the agricultural product quality assessments from private are fifteen local companies and five are international companies which also registered in Ethiopia to perform product quality conformity assessment.

(Refers Annex 1)

2.7.3. Governmental CABS (Testing, Inspection and Certification Company)

The government conformity assessment which perform agricultural quality conformity assessment activities are two as listed below

ECAE (Ethiopian Conformity Assessment Enterprise)

Ethiopian public health institute (Paster)

2.8. Conformity Assessment Bodies (Testing, Inspection and Certification body)

The Certification, Inspection and Testing are called the conformity assessment bodies that verifies the quality of product either based on defined or general requirements of Products by using 5M which are Machines/equipment, Men/experts, Methods, Environment and materials

Testing Bodies (ISO: 17025:2012):- are conformity assesment of product mainly based on laboratory result and slitley expert djugement.

Inspection Bodies (ISO: 17020:2012):- are aims at demonstrating the safety and functionality of the inspected target. Typical examples of inspected targets include lifts, hoisting gears, various pressure devices, measuring slightly by devices and more on expert djugement. In connection with accreditation, inspection bodies are classified into three different types, A, B and C. The type is specified based on the interdependence between the inspection body and the target of the inspection. Inspection bodies that are independent and impartial third party operators belong to type A. Type B inspection bodies are separate sections in an organization and they perform inspections only for their own organization or an organization belonging to the same Group. The same kind of separation from the organization is not expected of type C inspection bodies as with type B inspection bodies. In addition, type C inspection bodies can perform inspections on both their own organization and external organizations

Certification Bodies (ISO/IEC 17065:2012) are the businesses that employ the auditors that conduct product audits/assessment. Certification bodies are required to be accredited to the international standard ISO/IEC 17065:2012 (or subsequent versions as applicable) and be subject to annual assessments of their certification activities by licensed accreditation bodies to make conformity assesment of product through inspection, testing..

2.9. Challenges of Conformity with the Standards of Pulses and Oilseeds

The researches and some literecher stated the challenges with conformity assessment in relation to quality conformity process of pulses and oilseeds in providing the services to producers and exporters.

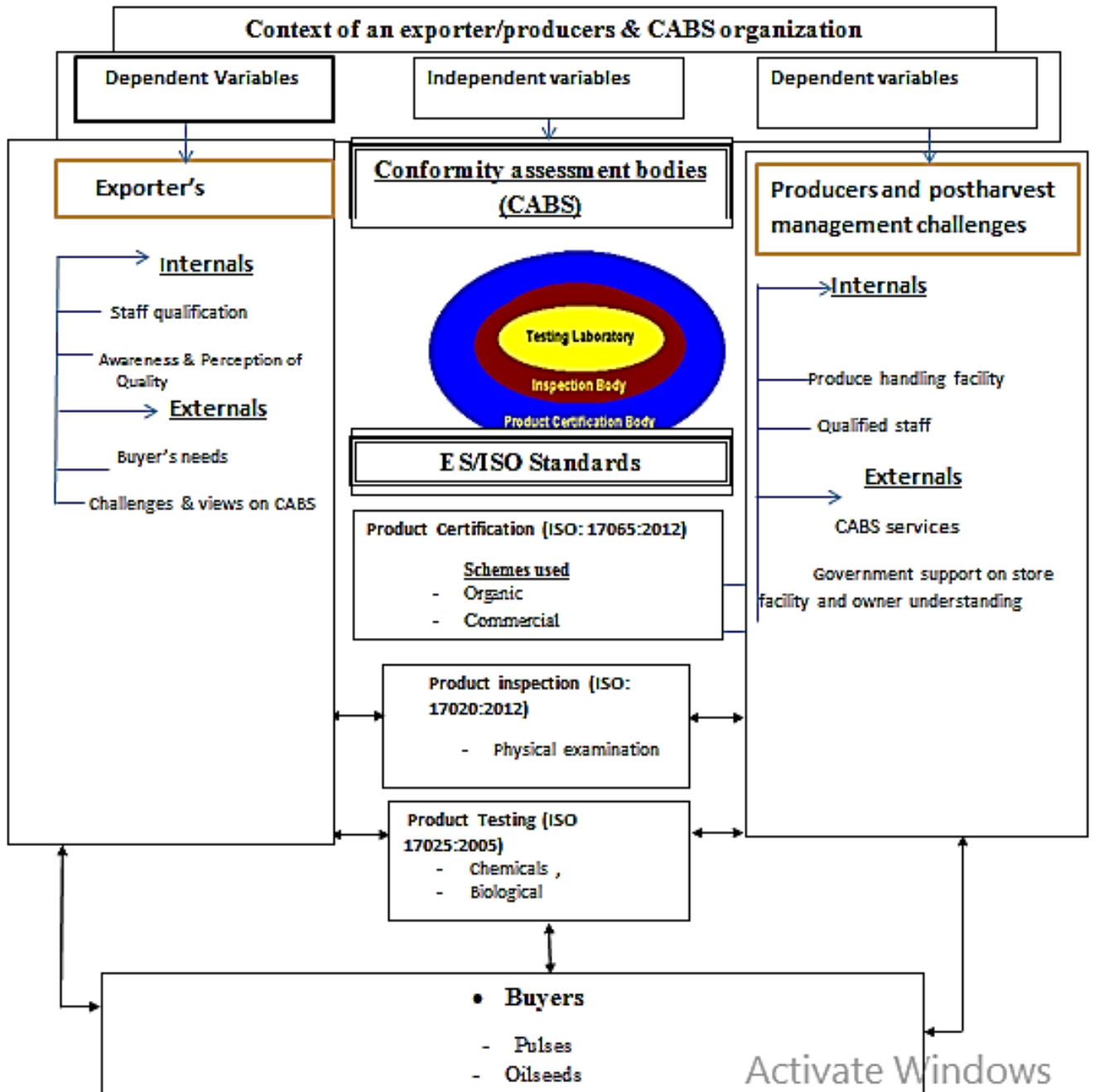
Poor quality pulse seeds: - The most important quality parameters of pulses are related to seed size, color, appearance, and existence of mixture (Impurities or Defect) (EIAR, 2010).

Capacity of exporters and wholesalers to store quality seeds:- Given the declining world demand and market price, the increased capacity of exporters and wholesalers to store without quality loss, the domestic price decrease in subsequent months as compared to the pick purchase time (EIAR, 2010)

Relatively long market chain and awareness of quality: - Most of the pulses pass a long market chain starting from rural markets to urban retail and supermarkets, which has an implication on the level of costs and final wholesale and consumer prices

Decline of demand in importing countries: - Following the financial crises in developed countries and the subsequent economic impact on their respective economies, overall international demand for agricultural commodities as it is for other industrial products had declined considerably (EIAR, 2010).

Misbehavior of brokers and suppliers: - The exporters and wholesalers reported that there is considerable number of brokers that create the market to misbehave and market actors to make wrong marketing decision especially through provision of unreliable and confusing market information to genuine market actors (EIAR, 2010).



Activate Windows

Figure 2. Conceptual framework for exporters/producers challenges on product certification process

CHAPTER THREE

RESEARCH DESIGN AND METHODS

The research design and methods encompass the research method, source of data, samples and sampling techniques, population, data gathering instruments, procedure of data collection, methods of data analysis and ethical considerations.

3.1. The Research Design

The primary data collected by using questionnaires and interviews. The secondary data were gathered through document analysis and relevant organization (MOTI, ESA, CABs and EPAPPEA) reports, journals, researches and websites. Accordingly, in this study, both closed and open ended questionnaires and semi structured interviews were employed. A Likert Scale, which is a five point scale was used to allow the individual to express how much they agree or disagree with a particular statement in the questionnaire.

3.2. The Research Method

Descriptive survey research method was used; the method enables to understand the existing conditions, practices, beliefs, and attitudes of the respondents on the issue under the study. This study used a mixed type of design. Mixed design start with a mixed type of research questions, to shape the methods and the overall design of a study. Mixed type of approach used both qualitative and quantitative methods as the overall strength of the study were greater than employing either qualitative or quantitative research. The method enables to draw generalization on both qualitative and quantitative research and minimizing the limitations of both approaches. Moreover, mixed methods provide a sophisticated, complex approach to research that appeal to those on the forefront of new research procedures. More specifically, the study has employed QUAN-Qual approach with the aim of supporting the quantitative data by the qualitative ones.

3.3. Source of Data

In this study both the primary and secondary sources of data were used. Primary source of data collected from exporter, Producers exporters and CABs through questionnaires and interviews. Moreover, Secondary data was collected through literature review, journals, periodicals, Organization (CABs, MOT, EPOSPEA, & CSA) records, report and websites.

3.4. Samples and Sampling Techniques

In spite of the application of scientific method and refinement of research techniques and tools, sample size calculation for a study, the target population, parameters interested, sampling frame, appropriate sampling method and required sample size determined. The target population includes Producers, Exporters and CABs managements and technical experts. The researcher used the formula below to calculate from these big populations the appropriate sample size.

Target Population

The population used for the quantitative and qualitative method from producers and Exporters were 10,350 and CABs 15 governmental and private organization. The population proportionally and purposively sampled as per the calculated sample. 230 exporters and 155 producers having their own production, and the 15 CABs making quality conformity the total population were used as shown in table below.

The researcher purposefully selects respondents which are professionals and technical experts from Exporters, producers and conformity assessments body (private and government) in Addis Ababa. The selected professionals include experts from management, senior technical staffs, production, quality control, and logistics.

3.4.1. How the study sample calculated ((Yemane, 1967).

$$n = \frac{N}{1 + N(e)^2} \quad 10,350 / 26.87 = 385$$

Where, **n** is number of respondent exporters and CABs,

N is the total number of producers and exporters involved in the export process = 10,350 **e** is the precision level. A 95% confidence level was taken and **e= 0.05**,

Then **n= 385**

The total sample size of respond based on the above sample size determination was 385

Table 4. Sample population of producers, exporters and conformity assessment body

Name of the samples and population	Total population size 10,350	Sample size proportionally allocated =385
Producers and Exporters	4,180	155
Exporters	6,170	230
CABS	15	15
Total population & sample	10,365	400
Responded questioners from dispatched one		
Responded questioners (producers)	155	130
Responded Exporters	230	190
Responded CABS	15	12
Total questioners & responses	400	332

3.5. Instruments of Data Collection

3.5.1. Questionnaire

The questionnaire questions were designed in two forms, questionnaires I was for 385 producers and exporters and questionnaires II was for 15 CABS. It is important to determine the exporter's requirements and challenges in quality conformity and the expectation of customer from service, then the ultimate goal of a questionnaire allows respondent freely express their idea and obtain variety opinions with in a relatively short period of time and the assessment of specific information about the exporter's challenges and perception.

3.5.2. Interview

The second data collection tool in this study was Interview, which helps to triangulate the data obtained through questionnaires. Most of the interview questions conducted was similar to the questions in the questionnaires; this helped to cross-check the response given on both methods of the assessment.

The interviewees were selected technical experts purposely from organizations entirely sampled. This method was selected because it provides clear and same information, which ensures the

comparability of data. Twenty five depth interviews were made with the operational, technical expert and managers. These twenty five interviewed technical experts were purposively selected from the Producers and Exporters Company entirely sampled from total population.

3.5.3. Document Analysis

It is a process of classifying, quantifying and analyzing data presented in written form which a supportive document to the main research. The document analysis was conducted on 12 CABs and records relevant data related to challenges or problem stated on quality conformity process of exporters. The documents were manuals, written procedures, standards, reports, records of customer complaints, records of non-conformities, management review and audit documents recorded by 12 CABs to strength the data collected by questioners and interview.

3.6. Validity and Reliability

The quality of research design determined by different dimensions, these are validity and reliability.

3.6.1. Validity

Therefore this research tried to check validity of the instruments to enhance the possibility of generalizability of the results, by using intensive literature review and selected technical experts to review the questionnaires to ensure the degree of the acceptance of the results.

Moreover, before the formal data collection was undertaken, preliminary studies in the form of interviews and pilot testing of questionnaires were conducted using 20 technical experts from producers and exporters and 20 technical experts from CAB's. During the designing of questionnaires, relevant experts' opinion from the sample industries was asked to ensure validity of instruments prepared by the researcher. Primary data both from the conformity assessment service providers, producers & exporters.

The researcher believes that data obtained by these tools were valid and reliable as it was triangulated to each other and the technical expert responded similar opinion on it.

3.6.2. Reliability

Cronbach's alpha ranges in value between zero and one. Values closer to one indicate a higher internal consistency; values closer to zero indicate a lower internal consistency. It is a measurement of internal consistency among the items and its range is from 0 to 1 with a minimum of 0.7 (McMillan & Schumacher, 2001).

The reliability test was conducted for five degree of Likert scale survey questionnaires using Cronbach's alpha in order to determine the internal consistency of the variables, indicating the coefficient value with 0.73 for exporters and 0.75 for CABs averagely 0.74 implying that the scale used was reliable. This indicates that there was an internal consistency.

Table 5. Reliability statistics for Pilot-Test for challenges of exporters and producers on quality conformity process of pulse and oilseeds with respect to the given parameters.

Case Processing Summary			
		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	0.0
	Total	20	100.0
a. Listwise deletion based on all variables in the procedure.			
Reliability Statistics for Producers and Exporters tested			
Tests	Cronbach's Alpha	N of Items	
Questionnaires part I	0.73	27	
Reliability Statistics for CABs			
Questionnaires part II	0.75	14	
Overall average	0.74		

3.7. Procedures of Data Collection

The Questionnaires were designed, approved and disseminated to respondents for primary data and for secondary data the letter was asked and collected from St. Merry University to organization that secondary data requested, and then both primary and secondary data analyzed and compiled accordingly.

Pilot Study

Pilot study was conducted through distributing the research questionnaire to randomly sampled 20 technical and managerial level staff of Producers and exporters CABs in order to check the applicability, reliability and understandability of the questionnaire before distribution of study questionnaires.

3.8. Methods of Data Analysis

The quantitative data first has been organized and put into tables to suit for analysis. Then after these data analyzed using descriptive statistical methods like mean, standard deviation and percentages and calculated using SPSS version 20. Other than this, the qualitative data were transcribed and then organized put into categories with group mean, standard deviation, percentage and discussed. The qualitative data from interview collected and analyzed according to the literature and quality requirement and standards of pulse and oilseeds. Summary tables and figures were used for describing data.

3.9. Ethical Consideration

The researcher informed the respondents that the information collected from them will not be used for any other purpose other than this research objective. The researcher prepared and collected an official letter from St. Mary's University in order to inform and assure the respective organs who are taking part in the study that the data collection is mainly for academic purpose. During data collection a brief explanation were given to the respondents about the benefit obtained from the research activity. Confidentiality and anonymity of the respondents were ensured throughout the execution of the study. Participants were not forced to disclose their personal information.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1. Introduction

This paper was mainly concentrated on the producers and exporters quality challenges on pulse and oilseeds. This chapter presents data gathered and results of data analysis. As indicated earlier data are presented in tables, figures, and discussion on the findings of the study. The quantitative analyze were on the questionnaires from exporters and CABs have been discussed. Moreover in addition to questionnaires the interviews were conducted on exporters to strength and cross check the validity of the study. The response of questionnaires analyzed using SPSS version 20 as presented below. The document analysis were made and presented on CABs to triangulated and support the questionnaires and interviews. The reliability was checked by dispatching 20 questions to respondents before the main study question dispatched and these respondents were not included in the main research question responses.

Response Rate

The response rate of the respondents from the distributed research questionnaire was 83 percent out of the total 400 technical staff of working at different responsibility levels in producers and exporters organization.

4.2. Questionnaire for Producers and Exporters Challenges

This questionnaires survey was conducted on producers and exporters who have been engaged on the export of pulse and oilseeds. The survey was planned to conduct on 385 producers and exporters accordingly the printed versions of the questionnaires were distributed and 332 question papers collected back. The respondents were urged to provide their valuable responses and these responses organized and analyzed as below table and figure.

4.2.1. Socio Demographic Characteristics of the Respondents on Producers and Exporters challenges

4.2.1.1. The Gender status of the Respondents

The Gender status of the respondents was dominated by male; i.e., the overwhelming majority of the respondents 63.13% were male as indicated in the table 6. Therefore the producers and exporters uses male these helps researchers generally to know the characters of respondent

4.2.1.2. Age group of the Respondent

Age group of the respondent, as this study revealed the profile of sample respondents as shown in the table 6 that the majority of the sampled respondents 151(47.2%) were aged between 26-35, followed by age group of 18-25 with 76 (23.8%) and age group 36-45 and 46-55 which accounts to 73(22.8%) and 20(6.3%) respectively, Therefore, the majority (151) of the sampled respondents were laid in the range from 26-35 this show that the quality inspection and management process were managed by middle age and helps researchers to know the general characters of respondents.

4.2.1.3. Educational level/ Profession of the Respondent

Educational level/ professional status of the respondents as this study revealed the profile of sample respondents as shown in the table 6 that the majority of the sampled respondents 136(42.5%) were grade twelve, followed by below grade 12 with 69 (21.6%) and diploma and first degree holder which accounts to 62(19.4%) and 53(16.6%) respectively, while the remaining educational level, master holders were not recorded on these study Therefore, the majority of the sampled respondents were laid in the range from 0-10/12 (around grade 12) this show that the quality of these export product majorly controlled or led by less educational level as it was one of the research problem.

4.2.1.4. Experience of the Expert of the Respondent

Experience of the Expert of the respondent their work experience, 72(22.5%) of sampled respondents had 0 -5 years' experience, 112(35%) of the respondents had 6-10 years, 87(27.2%) had 11-15 years' experience, 42 (13.1%) had 16-25 years' experience the last group with a greater than 26 years were 7 (2.2%) years' work experience respectively, the majority (112 experts) of the experts that perform on the area of pulse and oilseeds export quality issue related process were around 6 – 10 years' work experience as shown in table 6. These problems or challenges were one of the research studies which stated on the introduction and literature part of the study as Experienced, Trained warehouse management system.

4.2.1.5. Service year of Company of the Respondent

Service year of company of the respondent of sampled respondents company's service years were 99 (30.9%), ranged between 6-10 which was the majority of the exporters company aged young and followed by 92(28.8%) service years between 16-25 age 86(26.9%) ragged between 11-15 years', 31 (9.7%) ranged between 0 – 5 which was the most youngest company and the last one were 12 (3.6%) had greater than 25 years' experience of the that shows the aged and experienced company in this sector or pulse and oilseeds export process were minimal as shown in the table 6 below.

4.2.1.6. Summary of Socio Demographic Characteristics of the Respondents

The summary of Socio demographic characteristics of the respondents on exporters and producers challenges were summarized in table 6 below.

Table 6. Summarized demographical information of the respondents exporter

Variable	Category	Frequency	Percent
Gender	Male	202	63.1
	Female	118	36.9
Age group	18-25	76	23.8
	26-35	151	47.2
	36-45	73	22.8
	46-55	20	6.3
	>56	0	0
Education Level	<12	69	21.6
	Grade 12	136	42.5
	Diploma	62	19.4
	Frist Degree	53	16.6
Experience of the Expert	0-5	72	22.5
	6-10	112	35
	11-15	87	27.2
	16- 25	42	13.1
	>26	7	2.2
Service year of the company	0—5	31	9.7
	6 – 10	99	30.9
	11—15	86	26.9
	16 – 25	92	28.8
	>26	12	3.8

4.2.1.7. Challenges Regarding to Quality on Producers Management

In determining the major challenges in the pulse and oilseeds export regarding to quality issues, the questioners tried to examine the question part by part this parts examines challenges related to the producers post-harvest regarding to quality parameters issues as seen in table below.

The proper warehouse management most of the respondent 162 (50.63%) agreed and 63 (19.68%) strongly agree as the quality of the pulse and oilseeds caused by it and a challenges for them with the mean 3.866 and st. deviation of 0.76.

It is evident that on the **Experienced and Trained warehouse management** in relation to quality of pulse and oilseeds the respondent react as stated in table 7 below 155 (48.4%) agree and 83 (25.9%) strongly agree with mean 3.99 and stdv 0.74. Therefore as the respondent responses majority of the respondent laid on 238(74.3%) ‘agree and strongly agree’ which was experienced and trained warehouse management system a challenge for quality of pulse and oilseeds for exports.

Product fumigation and pest control system also analyzed as a challenge for quality of product for export stated as table 7 below was 147 (45.94%) Agree and 68(21.25%) Strongly Agree, Hence the majority 215(67.19%) of the respondent were react to ‘Agree and strongly agree’, Therefore Product fumigation and pest control system a challenge for quality of pulse and oilseeds for exports.

Management commitment in relation to the quality challenges of the pulse and oilseeds for export were responded as in table 7 below 146 (45.63%) Agree and 45(14.06%) Strongly Agree. The majority 191(59.69%) were react to ‘agree and strongly agree’; Therefore management commitment was one of the challenges on the producers of pulse and oilseeds.

Recognition and Awards in relation to the quality challenges of the pulse and oilseeds for export were responded as in table below 162 (50.62%) Agree and 52 (16.25%) Strongly Agree. Hence the majority of the respondent 214(66.87%) said ‘agree and strongly agree’ recognition and awards was challenges for producers of pulse and oilseeds in maintaining quality.

Table 7. Challenges related producers postharvest in relation to quality parameters above

Producers post-harvest management challenges regarding quality management												
Variables	Rating Scale										Mean	Stdv.
	Strongly disagree		Disagree		Moderate		Agree		Strongly agree			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
proper warehouse management	0	0	11	3.44	84	26.25	162	50.63	63	19.68	3.866	0.76199
Experienced, Trained warehouse management system	0	0	4	1.25	78	24.38	155	48.4	83	25.9	3.990	0.7448
Product fumigation and pest control	0	0	12	3.75	93	29.06	147	45.94	68	21.25	3.847	0.7948
Management commitment	0	0	11	3.44	118	36.88	146	45.63	45	14.06	3.703	0.7487
Recognition and Awards	0	0	6	1.88	100	31.25	162	50.62	52	16.25	3.813	0.7186
Transportation and trashing mechanism	0	0	18	5.63	120	37.50	119	37.19	63	19.68	3.709	0.84537
Awareness and Understanding	0	0	6	1.86	100	31.25	162	50.63	52	16.25	3.781	0.8049
Grand mean & standard deviation											3.82	0.77

Transportation and trashing mechanism in relation to the quality challenges of the pulse and oilseeds for export were responded as in table below, 162 (50.62%) Agree and 63 (19.68%) Strongly Agree. Therefore majority 70.3% of the respondent ‘agree and strongly agree’ as transportation and trashing is challenges for producers.

Awareness and Understanding in relation to the quality challenges of the pulse and oilseeds for export were responded as in table below 66.88% ‘‘Strongly Agree and agree’’ with the grand mean and standard deviation ‘‘3.82 and ‘‘0.77’’ respectively, Generally the evidence from respondent analyzed and show that the challenges related producers postharvest in relation to quality parameters were agreed by majority of the respondent.

4.2.1.8. Challenges to Exporters Meeting customers' quality needs

Table 8. Challenges related to exporters on quality parameters below

Challenges to exporters Meeting customers' quality needs.												
Variables	Rating Scale (Likert scale)										Mean	Stdv.
	Strongly disagree		Disagree		Moderate		Agree		Strongly agree			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
Defects or impurities	0	0	5	1.56	51	15.94	164	51.25	100	31.25	4.122	0.7219
Moisture of the product	0	0	18	5.63	115	35.94	133	41.56	54	16.88	3.697	0.8144
MRL (minimum residue level)	0	0	41	12.8	143	44.69	126	39.38	10	3.13	3.328	0.7355
Aflatoxin of the product	0	0	13	4.06	110	34.38	155	48.44	42	13.13	3.706	0.7436
weight loss of the product	0	0	15	4.69	88	27.50	131	40.94	86	26.88	3.90	0.8506
Timely delivery	0	0	30	9.37	108	33.75	136	42.50	46	14.38	3.619	0.8445
Labeling and marking of the product	0	0	44	13.75	118	36.88	126	39.38	32	10	3.456	0.8517
Stitching of the bags	1	0.3	62	19.37	96	30	127	39.68	34	10.6	3.409	0.9291
proper fumigation	0	0	35	10.93	102	31.87	122	38.12	61	19.06	3.653	0.9106
proper warehouse management	0	0	16	5	100	31.25	158	49.37	46	14.37	3.731	0.7654
poor packing of the product	0	0	16	5	90	28.12	132	41.25	82	25.61	3.878	0.8569
Grand mean & standard deviation											3.68	0.82

Defects or impurities with 82.5% 'agree and strongly agree', Moisture of the product 58.44% agree and strongly agree' MRL (minimum residue level) 44.69% moderate, Aflatoxin of the product 61.57% 'agree and strongly agree' Weight loss of the product 67.82% agree and strongly agree', Timely delivery 56.88% agree and strongly agree', Labeling and marking of the product 49.38% agree and strongly agree', Stitching of the bags 50.28% agree and strongly agree', Proper fumigation 57.18% agree and strongly agree', Proper warehouse management 63.74% 'agree and strongly agree', Poor packing of the product 66.86% agree and strongly agree'

Generally it were evident that as Table 8 above the majority of the respondent “agree and strongly agree” the parameters stated are causes for quality loss or a challenges for the exporters and producers except “MRL” laid on moderate with a Grand mean & standard deviation of 3.68 and 0.82 respectively.

4.2.1.9. Staff Competency and Management Commitments on Regarding to Quality of product (pulse and oilseeds for export)

Challenges related to staff competency and management commitment on quality (conformity assessment) on pules and oilseeds for export analyzed as table 9.

Lack of trained and experienced staff: - The majority of the respondents as table 9 indicated “Agree and strongly agree” 69.7% on lacks of trained and experienced staff.

Awareness and understanding: - The majority again responded “Agree and strongly agree” 69.3%. On awareness and understanding

Commitment and management: - The majority of the respondents replied “agree and strongly agree” 74.1% on commitment of management

Recognition and awards: - The majority of respondent accounts 75.1% reacts to “Agree and strongly agree” on recognition and awards that a challenge for quality of pulse and oilseeds for exporters

Experience of QMS: - As table 9 the majority of respondents 84.4% “Agree and strongly agree” It were evident that from respondent assessments as table 9 below generalized the majority of the respondent react to “Agree and strongly agree” with the grand mean and standard deviation “3.90” and “0.82” respectively, that the parameters listed in table were a challenges for exporters and producers of pulse and oilseeds in assuring quality of the product for export market.

Table 9. Challenges related to staff competency and management commitment on quality

Staff competency and management commitments												
Variables	Rating Scale										Mean	Stdv.
	Strongly disagree		Disagree		Moderate		Agree		Strongly agree			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
lack trained staff	0	0	17	5.3	80	25.0	141	44.1	82	25.6	3.9	0.8432
Awareness and understanding	1	0.3	19	5.9	78	24.4	163	50.9	59	18.4	3.813	0.8128
commitment and management	0	0	16	5.0	67	20.9	135	42.2	102	31.9	4.009	0.8546
Recognition and awards	0	0	12	3.8	68	21.3	156	48.8	84	26.3	3.975	0.7914
experience of QMS	0	0	14	4.4	102	31.9	135	42.2	135	42.2	3.809	0.8217
Grand mean & standard deviation											3.90	0.82

4.2.1.10. Views of exporters and producers post-harvest on the CABs services/assessments

The Challenges related to Views of exporters and producers postharvest on the CABs services/assessments on the support they proved for the exporter’s quality conformity assessments and the respondent from selected potential exporters and producers as table 10 below

Strong and accessed CABs: - As the table 10 below the majority of respondent replied 55.4% ‘‘agreed and strongly agreed’’ Hence most of the respondent react to ‘‘Agree and strongly Agree’’ that the parameters stated were the challenges for exporters and producers on assuring the quality of pulse and oilseeds for exports.

Insufficient and competent CABs: - The respondent react the majorities were also on ‘‘Agree strongly Agree’’ with 52.2% that insufficient and competent CABs were the challenges for exporters.

Service of CABS was Support: - The respondent react the majorities were also on ‘‘Agree strongly Agree’’ with 53.7% that the service of CABS was supportive were the challenges for exporters.

Impartiality of CABS: - The respondents react to ‘‘Agree and strongly agree’’ 52.2% on the impartiality of the CABS delivering the quality assurance service hence it was one of the challenges for producers and exporters.

Generally as table 10 it were evident that from respondent assessments generalized the majority of the respondent react to ‘‘Agree’’ with the grand mean and standard deviation ‘‘3.61’’ and ‘‘0.89’’ respectively, that the parameters listed in table were a challenges for exporters and producers of pulse and oilseeds in assuring quality faced from CABS (conformity assessments bodies). These challenges were the main challenges stated on the introduction and literature of the study that the research going to check and analysis and the respondent analysis more correlated with it.

Table 10. Views of exporters and producers on the CABS

Views of exporters and producers on the CABS services/assessments												
Variables	Rating Scale										Mean	Stdv.
	Strongly disagree		Disagree		Moderate		Agree		Strongly agree			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
Strong and accessed CABS	1	.3	33	10.3	109	34.1	116	36.3	61	19.1	3.6344	.9169
Insufficient and competent CABS	0	0	32	10.0	121	37.8	120	37.5	47	14.7	3.5688	.8610
Service of CABS was Support	0	0	35	10.9	122	38.1	122	38.1	50	15.6	3.5563	.8835
Impartiality of CABS	0	0	32	10.0	121	37.8	120	37.5	47	14.7	3.6781	.8885
Grand mean & standard deviation											3.61	0.89

4.2.1.11. Summary of Challenges of Exporters and Producers Postharvest on Pulse and Oilseeds Quality

Generally as per the survey made at potential exporters and producers experts and managers to assess challenges of exporters and producers post-harvest management in relation to quality of pulses and oilseeds for export and the Table 7, 8, 9, and 10 above on main topics, mean and standard deviation Producer's post-harvest management challenges regarding quality management (3.82 & 0.77), Challenges to exporters Meeting customers' quality needs (3.68 & 0.82), Staff competency and management commitments (3.90 & 0.82), Views of exporters and producers postharvest on the CABs services/assessments (3.61 & 0.89) majority of the respondent agreed on the parameters listed in table '7-10' were challenges for the exporters and producers on assuring quality of pulse and oilseeds for export with summary of Grand mean and standard deviation '**3.75**' and '**0.83**' except 'MRL' laid on moderately agree.

Hence according to the above analysis on exporters and producers the listed challenges or perceived problem in the introduction and Literature of the study assured by the respondent and data analysis

4.3. Questionnaire Response from CABs

4.3.1. Socio Demographic Characteristics of the Respondents on CABs (conformity assessments)

4.3.1.1. Gender of the Respondent

The Gender status of the respondents were dominated by male; i.e., the overwhelming majority of the respondents 8 (66.7%) were male, followed by female which accounts for 4 (33.3%) From the table we can understand that the majority respondents are male.

4.3.1.2. Age group of the Respondent

Age group of the respondent, as this study revealed the profile of sample respondents as shown in the table eight and figure 7 that the majority of the sampled respondents 4(33.3%) were aged between 36-45, followed by age group of >56 with 3 (25%) and age group 26-35, 46-55 and 18-25 which accounts to 2(16.7%), 2(16.7%) and 1(8.3%) respectively, Therefore, the majority 4(33.3%) of the sampled respondents were laid in the range from 36-45 this show that the quality inspection and management process in the CABs were managed by matured age group.

4.3.1.3. Educational level/ Profession of the Respondent

Educational level/ professional status of the respondents as this study revealed the profile of sample respondents as shown in the table 12 that the majority of the sampled respondents 5(41.7%) were grade twelve and diploma, followed by below grade twelve 1 (8.3%) and first degree holder which accounts to 1(8.3%) respectively, while the remaining educational level, master holders were not recorded on these study Therefore, the majority of the sampled respondents were laid in the range from 0-10/12 (around grade 12 and below).

4.3.1.4. Experience of the Expert of the Respondent

Experience of the Expert of the respondent as the profiled revealed the majority of respondent work experience, laid between 6-10 years and account 6 (50%) followed by work experience of 0-5 (25%) and 11-15 (25%) the experts experience more than 16 years were not recorded in this study as shown in table 11.

4.3.1.5. Service year of Company of the Respondent

Service year of company of the respondent of sampled respondents company's service years were 6(50%), ranged between 16-25 which was the majority of the CABs company aged medium and followed by service years between 6-15 age and >26 both accounts 3(25%) respondents of the total or 12 respondents from CABs company. There for the experienced company in this sector or pulse and oilseeds export inspection process were middle aged companies as shown in the table 12 below.

Table 11. Demographical information of the respondents of CABs

Variable	Category	Frequency	Percent
Gender	Male	8	66.7
	Female	4	33.3
Age group	18-25	1	8.3
	26-35	2	16.7
	36-45	4	33.3
	46-55	2	16.7
	>56	3	25
Education Level	<12	1	8.3
	Grade 12	5	41.7
	Diploma	5	41.7
	Frist Degree	1	8.3
Experience of the Expert	0-5	3	25.0
	6-10	6	50.0
	11-15	3	25.0
	16- 25	0	0
	>26	0	0
Service year of the company	0—5	0	0
	6 – 10	3	25.0
	11—15	6	50.0
	16 – 25	3	25.0
	>26	0	0

4.3.2. Questionnaires Analysis that Responded by CABS

Challenges that recorded by the CABS on the exporters and producers of pulses and oilseeds quality during quality conformity assurance for export.

Defect of product: - The majority of the respondent as table below replied Agree and ‘‘Strongly Agree’’ 7 (58.3%), Hence poor packing and marking a challenge for exporters.

Timely Readiness and delivery: - As table 12 challenges recorded by CABS on exporters staff respondent replied that ‘‘Moderate’’7(58%), Hence the majority replied moderate with 58% therefore timely readiness and delivery no challenges for exporters as CABS respondents.

Proper warehouse management system for quality survey: - The majority (50%) of respondent replied ‘‘Moderate’’. therefore it challenges moderately the exporters as CABS respondents.

Aflatoxin of the product: - As table 12 the Aflatoxin of the product on quality assurance were a cause for poor quality and majority (58.3%) respondents from CABS replied ‘‘Agree and strongly agree’’.

The MRL: - The majority of the respondent were replied on Moderate 5 (41.7%), and ‘‘Agree’’ 4 (33.3%). therefore MRL moderately challenges the exporters as CABS respondents.

The high moisture content of the product: - The majority of the respondents as table 12 below replied moderately agree (50.0%) on its challenges

Poor packing and material; - The majority of the respondent as table below replied Agree and ‘‘Strongly Agree’’ 7 (58.3%), Hence poor packing and marking a challenge for exporters.

The labeling and marking of the product: - The majority of the respondent as table 12 below replied ‘‘Moderate’’ 6 (50.0%), ‘‘Agree and Strongly Agree’’ 6(50%) respectively hence labeling and marking was challenge for exporters and producers.

The Stitching: - The majority of the respondent as table below replied ‘‘Agree’’ 7 (58.3%), therefore stitching is a challenges for producers and exporters.

The weight loss: - The majority of the respondent as table below replied ‘‘ Agree and ‘‘Strongly Agree’’ 7 (58.3%) respectively therefore stitching is a challenges for producers and exporters.

Awareness and Understanding of QMS (ISO: 9001):- The majority of the respondent as table 12 below replied ‘‘Moderate, 6 (50.0%), and ‘‘Agree and Strongly Agree’’6 (50%), respectively therefore the awareness and understanding was a challenge for exporters

Lack of Proper Fumigation system: - In relation to proper fumigation the respondent from CABs replied ‘‘Moderately Agree’’ 6 (50.0%) and ‘‘agree and strongly agree’’ 50%, Hence half of the respondent ‘moderately agreed’ half agreed and strongly agreed with Mean and Standard Deviation 3.42 and 0.792 the fumigation was the challenge for producers and exporters of pulse and oilseeds.

Recognitions and awards of expert: - The respondent as per table 12 the Half of respondents ‘‘Moderately Agree’’, 6 (50.0%), ‘‘Agree’’ 3 (25.0%), ‘‘strongly agree’’ 2 (16.7%) and the last one ‘‘Disagree’’ 1 (8.3%), thus as majority replied ‘moderate’ the recognition and awards were moderately challenge the exporters on quality assurance

Willingness for quality Improvement & resistance to CABs NC’S:- As per the table 12 below replied on ‘‘Agree’’ 6(50.0%), and ‘‘Moderately Agree’’ 5 (41.7%), lastly one respondent replied ‘‘Disagree’’ 1(8.3%). Therefore the majority 50% replied ‘‘agree’’ it is a challenge for producers and exporters.

Generally as per the survey made at CABs experts and managers to assess challenges of exporters and producers post-harvest management in relation to quality of pulses and oilseeds for export and the table 12 bellows summarize using SPSS software the majority of the respondent ‘‘agreed and strongly agreed’’ on the parameters listed below in the table were challenges for the producers and Exporters on assuring quality of pulse and oilseeds for export with Grand mean and standard deviation ‘‘3.55’ and ‘‘0.733’’.while Timely Readiness and delivery, Proper warehouse management system, MR, moisture contents, labeling, awareness and understanding, lack of proper fumigation and recognition and awards are moderately a challenges for a producers and exporters of pulse and oilseeds.

Table 12. Challenges recorded by CABs on exporters of pulse and oilseeds

Survey of challenges faced exporters in quality of pulse and oilseeds Recorded by CABs												
Variables	Rating Scale										Mean	Stdv.
	Strongly disagree		Disagree		Moderate		Agree		Strongly agree			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
Defect of product	0	0	0	0	5	42	6	50	1	8.3	3.67	0.65
Timely Readiness and delivery	0	0	1	8.3	7	58	3	25	1	8.3	3.33	0.779
Proper warehouse management system for quality survey	0	0	0	0	6	50	5	42	1	8.3	3.58	0.669
Aflatoxin of the product	0	0	1	8.3	4	33.3	6	50.0	1	8.3	3.58	0.793
The MRL	0	0	2	16.7	5	41.7	4	33.3	1	8.3	3.33	0.889
The high moisture content of the product	0	0	0	0	6	50.0	4	33.3	2	16	3.67	0.779
Poor packing and material	0	0	0	0	5	41.7	6	50.0	1	8.3	3.67	0.651
The labeling and marking of the product	0	0	0	0	6	50.0	5	41.7	1	8.3	3.58	0.669
The Stitching	0	0	0	0	5	41.7	7	58.3	0	0	3.58	0.515
The weight loss	0	0	0	0	5	41.7	4	33.3	3	25	3.83	0.835
Awareness and Understanding of QMS (ISO:9001)	0	0	0	0	6	50.0	5	41.7	1	8.3	3.58	0.669
Lack of Proper Fumigation system	0	0	1	8.3	6	50.0	4	33.3	1	8.3	3.42	0.792
Recognitions and awards of expert			1	8.3	6	50.0	3	25.0	2	16.7	3.5	0.904
Willingness for quality Improvement & resistance to CABs NC'S	0	0	1	8.3	5	41.7	6	50.0	0	0	3.42	0.669
Grand mean & standard deviation											3.55	0.733

4.3.3. Interview Response Analysis from Producers and Exporters

As far as the interview questions were concerned, the interviews were done in addition to the questionnaires to strength and support the study by different methods. The interviewees have expressed great regards to the ethical values associated with their positions. The interviews were concentrated on the main challenges of quality regarding to the pulse and oilseeds for export. The individual interviews were conducted on twenty five organizational bodies of technical experts that produce and export pulse and oilseeds.

The interviews were made to 25 respondents dividing in to two themes to address the question correctly and get correct responses. Theme 1 was about the challenges of producers that exporter having their own production area. Theme 2 was Exporters that not have their own production area. According the fifteen (15) technical experts and managers purposively selected and interviewed. Interviewee was asked six interview questions both themes that focused on the main challenges of producers exporters regarding to the quality conformity process.

The analysis of theme 1 indicates that the

1. What are the main challenges or perceived problem of post-harvest of exporters (Exporters that have their own production area) in your view?

Accordingly the majority of respondents responded;- - Poor trashing and transportation, Proper and standardized warehouse and management system, High moisture product, Insect and insect damage, Impurities of the product, Aflatoxin, MRL, Poor stitching and bags, Weight loss and marking Timely delivery.

2. What support and changes needed to be improved, to address the expectation of your customers/buyers?

As per the interview question asked and responded by all of the respondent stated below

Support and advice the production of pulse and oilseeds to use machine trashing and suitable transport that not compromise quality of product, Check the product moisture before harvest, Manage the insect by using appropriate person, equipment and medicine, Use proper warehouse and management system, Uses calibrated equipment, person, and standards for the product to manage and grade the impurities., Assure the dryness of the product by using calibrated moister

tester, Use appropriate chemical and dosage, Checks the weight of the product by appropriate and calibrated scale or weigh bridge before delivery to customer.

3. What are the views of the exporters/producers in encouraging awareness on Quality product, professionals and technology usage?

As the replay of the most respondents the management not committed and encourages the profession and use technologies because of additional cost assumed.

4. What kind of support does exporter needs from CABS (conformity assessments bodies) for improving their services?

Timely collecting sample and transparently provide the grading, analysis of certificate, Clear statement and document of ES/ISO standards before raising the non-conformance, Competent and professional expert, judgment impartially and independency, Providing the standard requirement before sampling and awareness training of the system, Low experienced, trained staff and delay in service delivery

5. What are the main complains and feedbacks received from your customers?

Poor trashing and transportation, Moisture of the product, insect and insect damage, impurities of the product, timely delivery, aflatoxin and MRL, Poor stitching and bags, weight loss and marking

6. What are the main challenges of post-harvest management in keeping quality of the product?

Poor trashing and transportation, proper and standardized warehouse and management system, Chemicals, fumigation sheet and personals on pest control system (fumigation)

As per the response from the interview almost all mentioned or perceived problem were the same to the challenges discussed on the Introduction, literatures and main questioners rated by five Likert scale.

In theme 2 Exporters not involved on production, According to the Ten (10) experts and managers purposively selected and interviewed. Interviewee was asked six interview question (the same as above) focused on the main challenges of exporters regarding to quality conformity process.

Transportation, proper and standardized warehouse and management system, high moisture product, Insect and insect damage, impurities of the product, aflatoxin, MRL, poor stitching and bags, weight loss and marking, timely delivery. This mentioned challenges above are the one contributed for the post-harvest losses and degraded quality of product and increase the non-conformance cost. ((FAO 2019 Addis Ababa), (Assefa 2015)

4.3.4. Document Response Analysis from CABs

The researcher has tried to obtain the relevant information from primary data which means survey questionnaire and interview, In addition to these two methods document analysis on CABs was conducted to strength and triangulate the data with from primary data. The documents analysis especially done on the document recorded 2018 up to 2020 the annual reports, certificates issued, policies, procedures and complaint records were analyzed in this section. According to the three years testing, certification and inspection documents were analyzed and summarized at CABs facility, the challenges or non-conformities on producers and exporters of pulse and oilseed quality conformity process were stated as follow,

High moisture contents above the standards (> 13.5%), impurities (insect damage, immature cornel, foreign matter, broken cornel, etc), live insect (un-fumigated or poor fumigation), weight losses (underweight from the agreed weight), poor stitching of bags, poor stacking and difficulty for sampling and counting system, marking and packing, aflatoxin, MRL (Minimum residue Level), timely readiness and delivery of the product were the main challenges or non-conformities that recorded by CABs inspection and certification report moreover proper assignment of the experts and committed staff also issues that raised by the respondents on discussion of interview.

As the document review the listed challenges (non-conformities) from one to seven were the main and repeatedly recorded non conformities by CABs reports. Hence the challenges recorded on the document analysis almost all were perceived problems supportive with what discussed and documented on the questioners, interview and the literature part of the study by author (Singh, 2011) Oilseeds and pulses quality is affected by several factors like pests, diseases, seed oil content, seed moisture content, mechanical damages of seed during processing, packaging materials, pesticides, air temperature and relative air humidity in storage.((Birhanu Beshah, Ephrem Gidey & Assefa Leta, 2015)

4.4. Discussion and findings

Despite the fact that the challenges of the exporters were too many this study concentrated on challenges of exporters from post-harvest up to export process of the pulses and oilseeds in relation to quality conformity processes. This study tries to identify and analyze the related challenges by collected data through different methods (questioners, interview and document analysis) from producers, exporters and CABs purposely identified and listed from the population. The discussion made based on the four basic study questions, accordingly the first findings and discussion was on the producer's post-harvest management challenges regarding quality managements, which are the, experienced personals, trained personals, proper warehouse management system, product fumigation and pest control, management commitment, recognition and awards, transportation and trashing mechanism, awareness and understanding. Hence this challenges according to the respondents responses analyzed most respondent replied "Agree and strongly agree" on the challenges with the grand mean and standard deviation "3.82 and "0.77" respectively as shown in Table 7, more over these challenges were triangulated and supported by interview and document analysis. The selected respondent of Producers, exporters, CABs agreed on challenges and as discussed on Literature review by different author's, post-harvest losses (FAO 2019, Addis Ababa), Oilseeds and pulses quality is affected by several factors like pests, diseases, seed oil content, seed moisture content, mechanical damages of seed during processing, packaging materials, pesticides, air temperature and relative air humidity in storage. (Singh, 2011) and the low productivity and quality, poor warehouse facilities are major challenges for the Ethiopian oil seed and pulse export and producers (Abera, 2009).

The second main basic question of the study also revealed that the Challenges of exporters to Meet customers' need in quality conformity process. The study examined in detail on challenges (Defects or impurities, Moisture of the product, MRL/minimum residue level, Aflatoxin of the product, weight loss of the product, Timely delivery, Labeling and marking of the product, Stitching of the bags, proper fumigation, proper warehouse management, poor packing of the product) by using primary and secondary data from questioner, interview and document analysis. Accordingly the data identified and analyzed almost all respondents "agree and strongly agreed" on identified and analyzed challenges of exporters with a Grand mean & standard deviation of 3.68 and 0.82 respectively except "MRL" laid on moderate as shown in Table 8.

This also strangled by interview and document analysis. Moreover these finding supported by literature review of different authors stated on chapter two for instance (Singh, 2011) Stated that Oilseeds and pulses quality is affected by several factors like pests, diseases, seed oil content, seed moisture content, mechanical damages of seed during processing, packaging materials, pesticides, air temperature and relative air humidity in storage.

The third basic question of study also extended and verified on the challenges related to Staff competency and management commitments in relation to quality conformity process of pulse and oilseeds for export with the listed and perceived problems (lack trained staff, Awareness and understanding, commitment and management, Recognition and awards, experience of QMS). Accordingly the respondent in the producers, exporters and CABs organization experts and managers responded to questioners. Thus data examined and analyzed brought the finding with the grand mean and standard deviation ‘‘3.90’’ and ‘‘0.82’’ respectively as shown in table 9, of Likert five scale, which ‘‘agree’’ to the challenges stated and triangulated with the interview and document analysis responses. It also supported by literature of various authors cited above like the (Abera, 2009) Low productivity and quality, management commitment, poor warehouse facilities are major challenges for the Ethiopian oil seed and pulse export and producers.

The fourth and last main study problem to examine Views of exporters and producers on the CABs services/assessments, the pre stated challenges (Strong and accessed CABS, Insufficient and competent CABs, Service of CABs was not Supportive, Impartiality of CABs) by using the same methods (Questioners and Interview). The respondent from the sampled organization responded, hence the response of respondent analyzed as shown in table 10, ‘‘Agreed’’ on the challenges stated with the grand mean and standard deviation ‘‘3.61’’ and ‘‘0.89’’ respectively. The challenges agreed and confirmed were, timely collecting sample and transparently provide the grading, analysis of certificate clear statement and document of ES/ISO standards before raising the non-conformance competent and professional expert, judgment impartially and independency, providing the standard requirement before sampling and awareness training of the system. The CABs questionnaires also assure the same challenges as producers and exporters as explained and indicated on table 12.

Generally the respondents responded as discussed above and map out that the challenges of producers and Exporters in relation to quality conformity process of Pulses and Oilseeds through

sample selected of respondent 385 from producers and exporters 12 from CABs by justified methods for questionnaires, interview on 25 exporters and document analysis on 12 CABs and come up with the identified summarized problems of producers and exporters

Product related:-, high moisture product, insect and insect damage, impurities of the product, aflatoxin, MRL, weight loss.

Facilities related: - poor trashing, transportation system, proper and standardized warehouse, warehouse management system, proper fumigation.

Management and Staff related: - lack of trained staff, awareness and understanding, commitment, management system, recognition and awards and experience of QMS.

CABs service and Customer feedback related: - Insect and insect damage, impurities of the product, aflatoxin, weight loss collecting sample, transparently provide the grading system, analysis of certificate, clear ES/ISO standards before raising the non-conformance, Low experienced and trained staff, delay in service delivery, Competent and professional expert, judgment impartially and independency, while Timely Readiness and delivery, Proper warehouse management system, MR, moisture contents, labeling, awareness and understanding, lack of proper fumigation and recognition and awards are moderately challenges the exporters.

This means that the collective challenges mentioned and examined above are causes of non-conformity and this again increases the non-conformance quality cost of the product, hence it decreases the income of exporters from export and the country as well. As supported by literature (*Birhanu Beshah, Ephrem Gidey & Assefa Leta (2015)*) The Ethiopian government places higher focus on export-oriented markets so as to get good revenue, and sustain its economy. Foreign currency can be increased either by increasing the export volume or reducing nonconforming products. In this regard, efforts have been underway to increase production; but, efforts towards reducing the nonconformance of products were, as such, not exciting. On average, the country is spending around 272 million of US dollars every year from quality problems only in the import–export market of which 99% is incurred due to the nonconformance of export products. The NCoQ measurement made in this study signifies the severity of nonconformance costs and the importance of investing in quality infrastructures.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

The study examined the various aspects the major challenges encountered on Producers exporters and Exporters quality conformity process from production post-harvest to export chain particularly the case of pulse and oilseeds .The Major findings are summarized as follows.

Evaluating the socio demographic characteristics of the respondents, the overwhelming majority of the respondents were male, followed by female. The age group of the respondents were majorly laid between 26-35 ages and followed by 18-25 and 36-45 respectively.

The educational status of the respondents the majorities were grade twelve and followed by below grade 12 and diploma. The respondent their work experience the majority from the sampled respondents were 6-10 years, 0 -5 years, and 11-15 years' experience respectively. The Service year of company of the respondent of sampled respondents company's service the majorities were ranged between 6-10 followed by 16-25 and 11-15 experience years respectively.

The challenges of Quality conformity process from product post-harvest to export chain particularly the case of pulse and oilseeds summarized in four divisions below.

Product related:-, high moisture product, insect and insect damage, impurities of the product, aflatoxin, MRL, weight loss.

Facilities related: - Poor trashing, transportation system, proper and standardized warehouse, warehouse management system, proper fumigation.

Management and Staff related: - lack of trained staff, awareness and understanding, commitment, management system, recognition and awards and experience of QMS.

CABs service and Customer feedback related: - Moisture of the product, insect and insect damage, Impurities of the product, timely delivery, aflatoxin and MRL, weight loss collecting sample, transparently provide the grading system, analysis of certificate, clear ES/ISO standards before raising the non-conformance, low experienced and trained staff, delay in service delivery, competent and professional expert, judgment impartially and independency.

The study also revealed that the Challenges to exporters Meeting customers' quality needs with detailed questioner and interview (Defects or impurities, Moisture of the product, MRL (minimum residue level), Aflatoxin of the product, weight loss of the product, Timely delivery, Labeling and marking of the product, Stitching of the bags, proper fumigation, proper warehouse management, poor packing of the product) The study also verified on Staff competency and management commitments on regarding to quality of pulse and oilseeds for export (lack trained staff, Awareness and understanding, commitment and management, Recognition and awards, experience of QMS). The last problem dispatched for respondent to study the challenges of exporters was Views of exporters and producers postharvest on the CABs services/assessments (Strong and accessed CABS, Insufficient and competent CABS, Service of CABs was Support, Impartiality of CABS).

5.2. Conclusions

The followings were concluded based on the research results:

The major problems on quality conformity process of pulse and oilseeds were addressed in four divisions for simplicity and easy understanding

1. **Product related:-** Poor thrashing and transportation, proper and standardized warehouse and management system, high moisture product, insect and insect damage, impurities of the product, aflatoxin, MRL, poor stitching and poor bags, weight loss, marking, packing and timely delivery.
2. **Management and Staff related:** - lack of trained staff, awareness and understanding, management commitment and management system, recognition and awards and experience of QMS of the organization.
3. **Customer feedback related:** - Collected indirectly through interview of exporters and CABs These are moisture of the product, insect and insect damage, impurities of the product, timely delivery, aflatoxin and MRL, poor stitching and poor bags and weight loss, marking and packing.
4. **CABs service related:-** Timely collecting sample, transparently provide the grading, analysis of certificate, clear ES/ISO standards before raising the non-conformance, low

experienced and trained staff, delay in service delivery, competent and professional expert, judgment impartially and independency.

Remember that Timely Readiness and delivery, Proper warehouse management system, MR, moisture contents, labeling, awareness and understanding, lack of proper fumigation and recognition and awards are moderately challenges the exporters as questionnaires collected from CABs expert but still remain challenges as questionnaires collected from Producers and exporters.

Though the Ethiopian government places higher focus on export-oriented markets so as to get good revenue, and sustain its economy. Foreign currency can be increased either by increasing the export volume or reducing non-conforming products. In this regard, efforts have been underway to increase production; but, efforts towards reducing the quality and non-conformance of products were, as such, not exciting.

The Crop pests and diseases do also contribute to the low level of productivity and huge post-harvest losses of up to 30%.

Though the this study will help policy-makers to foresee the severity and negative influence of main problems or challenge on the quality of export product and NCoQ in the country's economy since no one has been able to see and measure it so.

Through developing and managing the institutional, human and technical resource of from the government and private on NQI on addressing quality conformity process of the pulse and oilseeds for export market.

5.3. Recommendation

Based on the summarized findings and conclusions of the study, the following recommendations that could calls for policy measures (interventions) so as to improve and smooth the quality conformity process of pulse and oilseeds to enhance export market, Hence will increase profitability for producer's exporters and Exports by minimizing the non-conformance cost and income of the country as well.

1. Producers Exporters related.

- Improve the knowledge of producer's exporters on post-harvest management system (Proper warehouse, Pest control and fumigation, Proper trashing and transportation system) of the product.
- Assistance and support from Government, NGOs and Donners working on post-harvest and Agricultures' improvement area.
- Provide training and capacity building on standards and quality conformity of pulse and oilseeds.

2. Exporters related.

- The commitment of Management in relation to quality conformity process and allocation of resource shall be improved.
- Improve the knowledge of exporter's staff on quality management system, quality conformity process and staff competency (Standards, impurity of the product, grading system, quality control system, training and qualification).
- Cooperation of exporters, government and NGOs in improving and supporting on the quality conformity process of the product so as to boost export market and the income generated from export market of pulse and oilseeds.
- Improve communication between the exporters, CABs and NQI to work on and address quality conformity process gaps so as increase quality product and boost export market.

3. CABs related

- Review Quality policy of the country so that to manage the enhancement and improvement of the quality of the product as a whole, especially that widely earns currency for the exporters and the country as well.
- The private and government NQI shall cooperate and collaborate in enhancing and providing better service of quality conformity process of the product.
- Improve the capacity of CABs in providing standardized and full scopes of quality conformity assessments specially product testing (ISO: 17025:2012).

Build the capacity of the CABs management system and staff competency by providing training, recognition and awards.

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APPENDICES

APPENDIX A: QUESTIONNAIRE I

Questionnaire on Challenges Faced to Exporters of Pulse & Oilseeds Quality
To be responded by Producers/Exporters

Dear respondent,

The information that you respond shall be used as a primary data for partial requirements of master's degree at St Mary's university under Institute of Quality and Productivity Management Hence Kindly interested systematically collecting yours opinion on quality of pulse and oilseeds.

Thus thoughtfully yours responses to this questioner is very important

You are part of the sample of producers and exporters in pulse & oilseed about your quality challenges experienced in the sectors.

Yours responses give me insight about the evidences of challenges in quality management of pulse & oilseed.

To preserve confidentiality your name is not requested.

Thank you for your participation

General Instruction

- ❖ In all cases where answer options are available **please tick (X)** in the appropriate box for part one and circle for part two
- ❖ If the space provided is not enough for your opinions, please use the back side of the paper by writing the question number.

Part One: Demographical Information

1.1 Sex:

Male		Female	
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1.2 Age Group:

18 – 25		26 - 35		36 – 45		46-55		> 56	
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1.3 Educational status:

Below Grade 12		Grade 12 Complete		Diploma		First Degree		Second degree & above	
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If other, Please specify _____

1.4 Work Experience of the respondent

0 – 5		6 – 10		11 - 15		16-25	>26	
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1.5 Organization: _____

1.6 Service year in the organization:

0 – 5		6 – 10		11 - 15		16- 25	>26	
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1.7. Your current position (Job grade) -----

1.8. Years of service on the current job.....

1.9. If graduated educational background.....

Part Two: Survey of Challenges Faced Exporter in Quality of Pulse & Oilseed:

Where: 1 = Strongly Disagree; 2 = Disagree; 3 = Moderate; 4 = Agree; and 5 = strongly agree.

Survey concept Item	S/n	Question	Rating				
			1	2	3	4	5
Producers post-harvest management challenges regarding quality management	1	Lack of proper warehouse for post-harvest management	1	2	3	4	5
	2	Ineffective warehouse management system by trained and experienced expert deteriorates quality	1	2	3	4	5
	3	Lack of Proper Fumigation and pest control of the product before export	1	2	3	4	5

	4	The Commitment of the management	1	2	3	4	5
	5	Recognition and awards	1	2	3	4	5
	6	Poor product crashing/Trash and transportation mechanism	1	2	3	4	5
	7	Awareness and Understanding	1	2	3	4	5
Challenges to exporters Meeting customers' quality needs.	8	Defects/Impurities on the quality of Pulse and oilseeds	1	2	3	4	5
	9	Moisture of the product	1	2	3	4	5
	10	MLR (minimum residue level) of the product	1	2	3	4	5
	11	Aflatoxin of the product	1	2	3	4	5
	12	Weight loss of the product	1	2	3	4	5
	13	Timely delivery	1	2	3	4	5
	14	The labeling, marking of the product	1	2	3	4	5
	15	The Stitching	1	2	3	4	5
	16	Lack of Proper Fumigation	1	2	3	4	5
	17	Proper warehouse management system	1	2	3	4	5
	18	Poor packing of the product	1	2	3	4	5
Staff competency and management commitments	19	Lack of trained and qualified staff	1	2	3	4	5
	20	Awareness and Understanding	1	2	3	4	5
	21	Commitment of the management	1	2	3	4	5
	22	Recognition and awards					
	23	Lack of applying and experiencing product quality management system (QMS)	1	2	3	4	5
Views of exporters and producers postharvest on the CABS services/assessments	24	There were strong, accessed and supportive government and private CABS	1	2	3	4	5
	25	There were Insufficient and Competent CABS in the country	1	2	3	4	5
	26	The service provided supports the exporters and producers to provide the quality product to their customer	1	2	3	4	5
	27	Impartiality/ CABS assigned by buyers	1	2	3	4	5

NB. 1. CABS- Conformity assessment body

2. MRL- Minimum Residue Level
3. Moisture - moisture in the kernel

APPENDIX B: QUESTIONNAIRE II

Questioner on Challenges Faced to Exporters of Pulse & Oilseeds Quality

To be answered by CABS

Dear respondent,

- ❖ The information that you respond shall be used as a primary data for partial requirements of master's degree at St Mary's university under Institute of Quality and Productivity Management Hence Kindly interested systematically collecting yours opinion on quality of pulse and oilseeds.
- ❖ Thus thoughtfully yours responses to this questioner is very important
- ❖ You are part of the sample of producers and exporters in pulse & oilseed about your quality challenges experienced in the sectors.
- ❖ Yours responses give me insight about the evidences of challenges in quality management of pulse & oilseed.
- ❖ To preserve confidentiality your name is not requested.

Thank you for your participation

General Instructions:

- ❖ In all cases where answer options are available **please tick (X)** in the appropriate box for part one and circle for part two
- ❖ If the space provided is not enough for your opinions, please use the back side of the paper by writing the question number.

Part One: Demographical Information

1.1 Sex:

Male		Female	
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1.2 Age Group:

18 – 25		26 - 35		36 – 45		46-55		> 56	
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1.3 Educational status:

Below Grade 12		Grade 12 Complete		Diploma		First Degree		Second degree & above	
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If other, Please specify _____

1.4 Work Experience of the respondent

0 – 5		6 – 10		11 - 15		16-25	>26	
-------	--	--------	--	---------	--	-------	-----	--

1.5 Organization: _____

1.6 Service year in the organization:

0 – 5		6 – 10		11 - 15		16- 25	>26	
-------	--	--------	--	---------	--	--------	-----	--

1.7. Your current position (Job grade) -----

1.8. Years of service on the current job.....

1.9. If graduated educational background.....

Part Two: Survey of Challenges Faced Exporter in Quality of Pulse & Oilseed:

Where: 1 = Strongly Disagree; 2 = Disagree; 3 = Moderate; 4 = Agree; and 5 = strongly agree.

The CABS assessment and recorded non conformities on export pulse and oilseeds product	1	The defect/impurities	1	2	3	4	5
	2	Timely Readiness and delivery	1	2	3	4	5
	3	Proper warehouse management system for quality survey	1	2	3	4	5
	4	The Aflatoxin	1	2	3	4	5
	5	The MRL	1	2	3	4	5
	6	The high moisture content of the product	1	2	3	4	5
	7	Poor packing	1	2	3	4	5
	8	The labeling and marking of the product	1	2	3	4	5
	9	The Stitching	1	2	3	4	5
	10	The weight loss	1	2	3	4	5
	11	Awareness and Understanding of QMS (ISO:9001)	1	2	3	4	5
	12	Lack of Proper Fumigation system	1	2	3	4	5
	13	Recognitions and awards	1	2	3	4	5
	14	Willingness for quality Improvement & resistance to CABS NC'S	1	2	3	4	5
	15		1	2	3	4	5

NB. 1. CABS- Conformity assessment body

2. MRL- Minimum Residue Level

3. Moisture - moisture in the kernel

APPENDIX C: INTERVIEW QUESTIONS

INTERVIEW QUESTIONS

Challenges Faced to Exporters of Pulse & Oilseeds Quality

Introduction

- Introduce yourself and Thanks for availing the respondent
- Confirm the time to be taken, Inform the purposes and question numbers
- Inform the confidentiality and only the group result compiled and presented

1) What are the main challenges or perceived problem of exporters in your view?

2) What support and changes needed to be improved, to address the expectation of your customers/buyers?

3) What are the views of the exporters/producers in encouraging awareness on Quality product, professionals and technology usage?

4) What kind of support does exporter needs from CABS (conformity assessments bodies) for improving their services?

5) What are the main complains and feedbacks received from your customers?

6) What are the main challenges of post-harvest management in keeping quality of the product?

Thank you for giving your precious time

APPENDIX D: DOCUMENT ANALYSIS

Document Analysis on Challenges of Pulse and oilseed quality process

Dear respondent,

The information that you respond shall be used as a primary data for partial requirements of master's degree at St Mary's university under Institute of Quality and Productivity Management Hence Kindly interested systematically collecting yours opinion on quality of pulse and oilseeds.

Introduce yourself and Thanks for availing the respondent

Confirm the time to be taken, Inform the purposes and question numbers

Inform the confidentiality and only the group result compiled and presented

Thank you for your participation

Schedules

S/N	Document type	Non conformities Recorded	CABs
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

APPENDIX E: INTERNATIONAL CABS

No.	International & also have office in Ethiopia	Services they provide (ISO 17020, 17065, 17025)	National Accredited	International Accreditation	Remark
1.	Intertek worldwide	Product inspection (ISO 17020)	Not	Yes	
2.	Baltic worldwide	Product inspection (ISO 17020)	Not	Yes	
3.	Cotecna worldwide	Product inspection (ISO 17020)	Not	Yes	
4.	Geochem Worldwide	Product inspection (ISO 17020)	Not	Yes	
5.	SGS worldwide	Product inspection (ISO 17020)	Not	Yes	
6.	Bureau Veritas worldwide	System & Product Certification (ISO 9001, 22001 & ISO 17065)	Not	Yes	
7.	Control union (CU)	Product inspection & Certification	Yes	Yes	
8	CIS	Product inspection (ISO 17020)	Not	Yes	

APPENDIX F: LOCAL CABS

S/No	Local Company	Services they provided (Scope) (ISO 17025, 17020, 17065)	Accredited (local)	Accredited (international)	Remark
1	Afro star	Product inspection(ISO 17020)	Not	No	
2	GISA(Global inspection survey agency)	Product inspection(ISO 17020)	Yes	No	
3	A.Y Noble surveillance	Product inspection(ISO 17020)	Yes	No	
4	ECAE	Product inspection & Certification(ISO 17020& ISO 17065)	Yes	No	
5	IUS	Product inspection(ISO 17020)	Yes	No	
6	Star Ethiopia	Product inspection(ISO 17020)	Yes	No	
7	QITS	Product inspection(ISO 17020)	Yes	No	
8	Bless Agri food	Product inspection & Certification(ISO 17020& ISO 17065)	yes	Yes	
9.	Control union (CU)	Product inspection & Certification	Yes	Yes	

APPENDIX G: GOVERNMENT CABS

S/No	Government Company	Services they provided (Scope) (ISO 17025, 17020, 17065)	Accredited (local)	Accredited (international)	Remark
1	ECAE	Product inspection & Certification(ISO 17025, 17020, 17065	Yes	No	