THE UNITED REPUBLIC OF TANZANIA
NATIONAL AUDIT OFFICE

PERFORMANCE AUDIT REPORT ON AVAILABILITY AND ACCESSIBILITY OF GOOD QUALITY AGRICULTURAL INPUTS (SEEDS AND FERTILIZERS) TO FARMERS

REPORT OF THE CONTROLLER AND AUDITOR GENERAL OF THE UNITED REPUBLIC OF TANZANIA

MARCH, 2019

NATIONAL AUDIT OFFICE

Vision

To be a highly regarded Institution that excels in Public Sector Auditing

Mission

To provide high quality audit services that improves public sector performance, accountability and transparency in the management of public resources

Our core values

Objectivity

We are an impartial organization, offering services to our clients in an objective and unbiased manner

Excellence

We are professionals providing high quality audit services based on best practices

Integrity

We observe and maintain the highest standards of ethical behavior and the rule of law and a strong sense of purpose

People focus

We value, respect and recognize interest of our stakeholders.

Innovation

We are a learning and creative public institution that promotes value added ideas within and outside the institution

Results Oriented

We are an organization that focuses on achievement based on performance targets

PREFACE

The Public Audit Act No. 11 of 2008, Section 28 authorizes the Controller and Auditor General to carry-out Performance Audit (Value-for-Money Audit) for the purposes of establishing the economy, efficiency and effectiveness of any expenditure or use of resources in the MDAs, LGAs and Public Authorities and other Bodies which involves enquiring, examining, investigating and reporting, as deemed necessary under the circumstances.

I have the honour to submit to His Excellency, the President of the United Republic of Tanzania, Dr. John Pombe Magufuli and through him to Parliament the Performance Audit Report on the Availability and Accessibility of Good Quality Agricultural Inputs (Seeds and Fertilizers) to farmers as conducted by the Ministry of Agriculture and Tanzania Fertilizer Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI).

The report contains conclusions and recommendations that directly concern the Ministry of Agriculture, TFRA and TOSCI.

The managements of the Ministry of Agriculture, TFRA and TOSCI have been given the opportunity to scrutinize the factual contents of the report and come up with comments on it. I wish to acknowledge that the discussions with the audited entities have been very useful and constructive in achieving the objectives of the audit.

My office intends to carry-out a follow-up at an appropriate time regarding actions taken by the Ministry of Agriculture, TFRA and TOSCI in relation to the recommendations in this report.

In completion of the assignment, the office subjected the report to the critical reviews of the following experts namely, Dr. Hamis Hussein Mtwaenzi, Retired Director General of TOSCI and Dr. Nyambilila Amuri, Head – Department of Soil and Geological Sciences, Sokoine University of Agriculture.

This report has been prepared by Mr. Gerald A. Nduye (Team Leader), Ms. Anna Minja and Mr. Hagai Maleko (Team Members) under the supervision and guidance of Ms. Esnath H. Nicodem – Audit Supervisor, Mr. George C. Haule – Assistant Auditor General and Mr. Benjamin Mashauri – Deputy Auditor General.

I would like to thank my staff for their devotion and commitment in the preparation of this report. My thanks should also be extended to the Ministry

of Agriculture, (TFRA) and (TOSCI) for their fruitful interaction and cooperation with my office

Prof. Mussa Juma Assad
Controller and Auditor General
United Republic of Tanzania
March, 2019

Table of Contents

LIST OF ABBREVIATIONS AND ACRONYMS

ARI	Agricultural Research Institute
AGTF	Agricultural Input Trust Fund
ASA	Agricultural Seed Agency
ASDP	Agricultural Sector Development Programme
CSOs	Civil Society Organizations
DAP	Diammonium Phosphate
GDP	Gross Domestic Product
LGA	Local Government Authority
MARI	Mikocheni Agricultural Research Institute
MoA	Ministry of Agriculture
MTEF	Medium Term Expenditure Framework
NPK	Nitrogen, Phosphorus, Potassium
PO-RALG	President's Office - Regional Administration and Local Government
PHS	Plant Health Services
RS	Regional Secretariat
TFA	Tanganyika Farmers Association
TFC	Tanzania Fertilizer Company
TFRA	Tanzania Fertilizer Regulatory Authority
TOSCI	Tanzania Official Seed Certification Institute

LIST OF TABLES AND FIGURES

List of Figures

List of Photo

EXECUTIVE SUMMARY

Agricultural Sector remains the backbone of the Tanzania economy. It accounts for 29.1 percent of Tanzania's GDP i.e. about 30 percent of traditional export earnings. It also provides 95 percent of food requirement and employs 75 per cent of the population.

The backbone of any agricultural revolution is farmers' access to modern agricultural inputs[1]. Agricultural inputs help to increase crop production, yield and improve quality of land, thus ensuring better returns to the farmer. All of these Agricultural inputs such as improved seeds, fertilizers, pesticides and other soil amendments have great impact on the productivity of agricultural produces. Agricultural inputs also reduce risks due to weather variability and thus minimizing post-harvest wastages[2]. Fertilizer improves soil fertility through replenishing essential plant nutrients and introduces essential microorganisms to the land, which improves productivity.

It was reported that there are challenges of poor access and low use of improved seeds and fertilizers, and limited access to financing for adoption of modern technologies in Tanzania.

The objective of the audit was to assess whether the Ministry of Agriculture through Tanzania Fertilizer Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI) assure presence of quality agricultural inputs to farmers in order to increase agricultural productivity in the country.

The audit addressed issues of good quality agricultural inputs; availability and affordability of agricultural inputs to farmers, mechanisms for demand forecasting and supply, and distribution of agricultural inputs.

Main Audit Findings

Inadequate Mechanism to ensure quality agricultural inputs is supplied to farmers

Presence of low quality or unsuitable agricultural inputs

The audit revealed the presence of low quality supply of agricultural inputs in the market. There were supplied seeds which failed to germinate and seeds that grow but do not yield the expected produce. It was also noted that, there was limited conduct of the soils test in the country in order to

1 http://www.mit.go.tz/uploads/documents/sw/1455888762-Agricultural-Marketing-Policy.pdf visited on 16/5/2017

2 https://www.slideshare.net/JitinKollamkudy/agricultural-inputs-46989116

know the type of fertilizer to be applied. In this case fertilizers were distributed to farmers without knowing the requirement of the soil.

Inadequate conduct of inspection activities to ensure quality inputs were supplied in the market;

The audit noted that, there was inadequate conduct of inspections at entry points, agro dealer shops and seed farms. TOSCI was not operational in all entry points in the country while TFRA operates in only one entry point. There are 52 entry points in the country. It was also noted that there was inadequate planning for conducting inspections that covers all agro-dealers in the country. TOSCI also did not conduct farms inspection activities based on the requirements of producing agricultural seeds.

Insufficient training/knowledge regarding agricultural inputs

The audit team observed that out of 20 agro dealers visited in four LGAs only 7 agro dealers possess sufficient training in agriculture issues. The Agro-dealers did not have the agricultural background contrary to the Seeds and Fertilizer regulations. Sellers were unable to provide general knowledge on the applicability of the fertilizers and seeds supplied to farmers.

Presence of agro-dealers who do not meet the required conditions of supplying inputs

There was presence of unregistered, unlicensed and seasonal input sellers in the market. The stated agro-dealers revealed that they do not have clear understanding on registration procedures and requirements.

Demand Forecasting was not conducted efficiently in the country

There were no methodologies used by the Ministry of Agriculture to establish the actual demand of inputs in the country. There have been clear shortages of seeds and fertilizers for the market as the fertilizers available in the market was not enough compared to actual demand.

Up to the year 2018, the audit noted that the Ministry did not conduct baseline survey to understand the total demand of inputs by farmers. The Ministry has only established hypothetical demand, which was not accurate to fulfill farmers' demand on inputs.

Reason observed in the inadequate demand established was that some LGAs delayed in reporting their demands therefore the inputs are procured without incorporating their requirements. This led to insufficient distribution and supply of inputs to some of the areas. It was also observed that there is inadequate coordination between LGAs and farmers during the demand establishment.

Inadequate Mechanism to ensure accessibility of good quality agricultural inputs

Untimely supply of Agricultural Inputs

The voucher system used in 2014/15 showed that there was delay in delivering of agricultural inputs to farmers in some areas. There was an average of 3 to 5 months delay noted in the distribution of the inputs in the voucher system.

Reason for delay included, infrastructure problems in rural areas that hinder timely supply of the demanded inputs. Consequently, agro-dealers failed to supply fertilizers and seeds in villages because most of the roads in the country at village level are seasonal roads.

Another reason noted for this challenge was low number of agro dealers' operating in the regions. For example, Mtwara region had the largest ratio whereby one agro-dealer serves about 42,000 farmers and one distributor serves about 800 villages. In Mbeya region, there was the lowest ratio whereby one agro-dealer serves about 3,600 and distributor serves about 44 villages. This factor also contributed to delay in supply and distribution of inputs to farmers.

Inadequate mechanism of regulating price of inputs

There was inadequate mechanism to ensure information about indicative prices reaches all intended users in time. This was due to the fact that indicative prices did not reach all intended users. The information ends at Regional and LGAs levels without flowing down to the village level. It was also noted that, some of the agro dealers did not display the agricultural input prices as per the requirements. Therefore, some farmers were unaware of the indicative prices established.

The reason for inaccessibility to indicative price observed include inadequate conduct of inspections to assess compliance of Indicative Prices. Therefore, some agro-dealers tend to overstate fertilizer's prices as evidenced through inspection reports of the financial year 2017/18 from TFRA.

The subsidized inputs such as seeds and fertilizers distributed in the country did not consider 50% of the total cost as a subsidy on the price of agricultural inputs as agreed. In year 2016/17, the Government provides only 30% as a subsidy leading to the high cost of seeds to farmers.

Limited availability of credit facilities to ensure farmers access loans for inputs

It was noted that most of the farmers were unable to meet loan conditions established by the Agricultural Input Trust Fund (AGTF) hence many loans that were targeted to be provided to farmers could not be availed. This is despite the National Agricultural Policy of 2013 that requires the Ministry of Agriculture to ensure farmers are supported to access modern inputs. It was further revealed that there was shortage of financial institutions to offer agricultural loans to farmers. The audit team observed that Agricultural Input Trust Fund (AGTF) is only operating in Dodoma and have no zonal or regional offices upcountry where most farmers are located. Hence, many farmers were unaware of services offered by this Fund.

Inadequate Monitoring and Evaluation by the Ministry of Agriculture

It was also noted that there was inadequate Monitoring and Evaluation activities conducted at all levels. The audit found no Monitoring and Evaluation conducted by the Ministry to TOSCI and TFRA. The same was observed by TFRA and TOSCI who did not conduct M&E to its zonal offices and inspectors located at Local Government Authorities. Consequently, this shortcoming led to inability to monitor and measure progress of the implementation of set goals and obligations.

Overall Audit Conclusion

The audit concluded that there were inadequate mechanisms to ensure good quality agricultural inputs are available to farmers. This is caused by inadequate control mechanism to ensure quality inputs were supplied to meet the actual demand, and inadequate distribution system that were executed under Ministry of Agriculture, TFRA and TOSCI. This impacted the productivity of agricultural crops in the country, a situation which led to food insecurity as well as fall of income to individual farmers and the country at large.

Audit Recommendations

Recommendations to the Ministry of Agriculture

The Ministry of Agriculture should:

1) Strengthen a mechanism that will ensure quality agricultural inputs are supplied in the country, by having well equipped Performance Evaluation tools which will help in monitoring the extent of implementation of the policy specifically on issues of quality agricultural inputs to farmers;
2) Conduct a baseline survey so as to establish effective demand of needed agricultural inputs;

3) In consultation with PO-RALG make sure that they locate specific areas in every district for the production of good quality seeds; and
4) Strengthen mechanisms to ensure farmers' access to credit facilities.

Recommendations to TFRA and TOSCI

Tanzania Fertilizers Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI) should:

1) Strengthen the capacity of officials such as Plant Health Services Section (PHS) officials who are located at the entry points by making them authorized inspectors to inspect both seeds and fertilizer entering the country;
2) Ensure that all actors such as producers of agricultural inputs, agro-dealers, importers and authorized inspectors are registered and trained so as to increase knowledge and awareness on issues regarding agricultural inputs;
3) Improve the system and mechanism that will ensure timely reporting and proper analysis of needed fertilizers according to demand;
4) Improve mechanisms for ensuring timely distribution of quality fertilizers to farmers;
5) Improve mechanisms for ensuring that indicative prices for all types of fertilizers are timely developed, communicated to the intended users and are complied with; and
6) Ensure seed demand is effectively established to ascertain that good quality seeds and quantity are timely supplied to farmers.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Audit

Agricultural Sector remains the backbone of the Tanzania's economy. It accounts for 29.1 percent of GDP i.e. about 30 percent of traditional export earnings. It also provides 95 percent of food requirements and employs 75 percent of the population (Agricultural Sector Development Programme (ASDP) Phase II, November 2017).

The backbone of any agricultural revolution is farmers access to modern agricultural inputs[3]. Agricultural inputs help to increase crop yield, productivity and improve quality of land thus ensuring better returns to the farmer. Agricultural inputs range from quality seed of improved varieties, fertilizers and crop protection chemicals to machinery, irrigation and knowledge.

Agricultural inputs must be available and accessible to farmers at affordable prices on time through convenient infrastructure[4]. All of these agricultural inputs have great impact on the productivity of agricultural produces. Use of agricultural inputs also reduces risks due to weather variability and thus minimizing post-harvest wastages[5]. Fertilizer improves soil texture, recycles nitrogen and introduces essential bacteria to the land, which in turn improves productivity.

The statistics on uses and purchases of agricultural inputs collected in 2009 by the National Panel Survey of Tanzania conducted by the Agricultural Development Economics Division (ESA) of the Food and Agricultural Organization (FAO) and Development Research Group (DECRG) of the World Bank indicated that the farming sector in the country is characterized by an extremely limited use of modern agricultural inputs. Only 30 percent of households reported to use fertilizers, and 15 percent reported to have purchased pesticides. Meanwhile, 58 percent of rural households purchased seeds for agriculture, but just 14 percent purchased quality seed of improved varieties and only 12 percent bought certified seed of improved varieties. Seeds used are largely made up from traditional varieties. As

---

[3] http://www.mit.go.tz/uploads/documents/sw/1455888762-Agricultural-Marketing-Policy.pdf visited on 16/5/2017

[4] http://www.mit.go.tz/uploads/documents/sw/1455888762-Agricultural-Marketing-Policy.pdf visited on 16/5/2017

5 Claude Ramdrianarisoa et al (2005)/ getting the inputs right for improved agricultural productivity in Madagascar

expected, the agricultural practices of larger farmers are somewhat more reliant on the use of seeds, fertilizers and pesticides[6].

1.2. Motivation of Audit

The conduct of the audit was highly influenced by the following factors:

a) ***Low rate of Agricultural Input Use in among farmers***

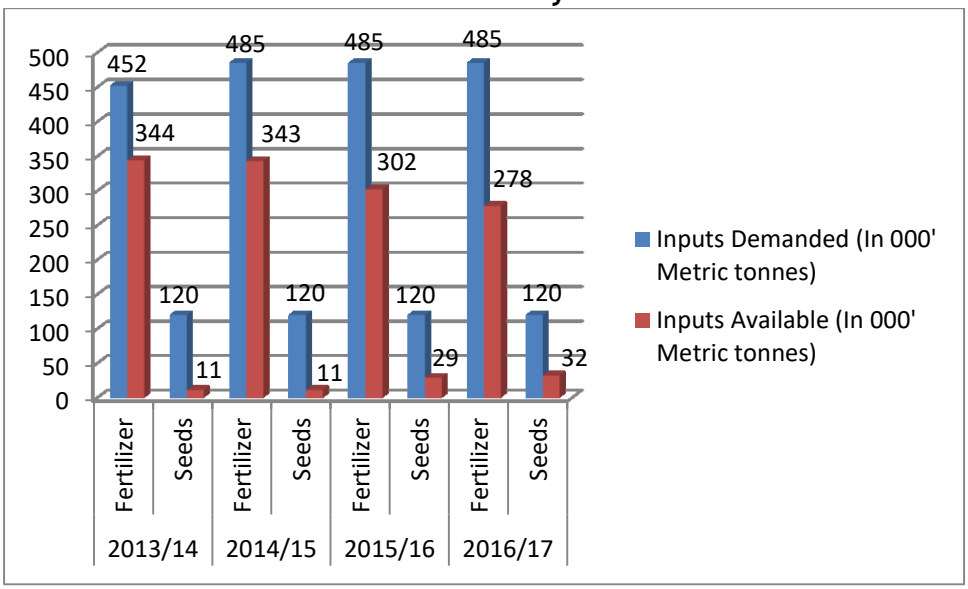
Tanzania is among the countries with the lowest fertilizer application rate, ranging between 7 and 9 Kgs per arable acre per year[7] as compared to application rate in Asia which is 100 Kgs per arable acre per year. In Latin America it is more than 70 Kgs and in South East Asia it is more than 135 Kgs per acre per year (Food and Agricultural Organization (FAO), in Gou et al, 2009). Low agricultural input use has been reported to be due to challenges of poor access and low use of quality seeds of improved varieties and fertilizers, and limited access to financing for adoption of modern technologies[8].

b) Limited Supply of demanded Inputs

The Ministry of Agriculture estimated that annual demand of fertilizers for the year 2014/15 was 485,000 metric tonnes. The supply of fertilizers has been averaged at around 75 percent of this demand. From year 2014/15, the Ministry of Agriculture estimated that latent demand for improved seeds in the country was 120,000 metric tonnes. The actual demand is 60,000 metric tonnes while for the year 2016/17 the supply was below 61% of the demanded quality seeds. Figure 1.1 indicates the percentage of demanded and available inputs in metric tonnes.

6Livestock and livelihoods in rural Tanzania A descriptive analysis of the 2009 National Panel Survey (LSMS-ISA(Intergrated Survey on Agriculture)
7 Zhe Guo, Jawoo Koo and Stanley Wood, 2009
8 Tanzania: Tackle Challenges Facing Agriculture(The citizen,10 Jan 2016)

Figure 1.1: Proportion of demanded and available agricultural inputs in the country



***Source**: The Ministry of Agriculture, annual Budget Speech, 2013/14 - 2017/18*

The gap of the demanded good quality agricultural inputs and the supplied inputs in the country has been reduced over time. Awareness creation to farmers increases the general level of demands on inputs and the use of those needed inputs.

c) Inadequate Compliance with laws and regulations governing agricultural inputs

There are common challenges to the registration and certification processes across all agro-input markets in Tanzania. These challenges include; weak legislative process whereby the private sector is rarely consulted; poor enforcement of existing laws of prohibiting substandard products; ad-hoc policy making and misinterpretation of laws, which generates uncertainty for companies and imposes high costs; and a failure by regulators to communicate policy guidance, leading to misinterpretation, uncertainty and opportunities for corruption[9].

Therefore, as a result of inadequate compliance with laws and regulations governing agricultural inputs applicability in the country, it was alleged that about 40 percent of agricultural inputs supplied to farmers are of low quality

[9] Africa Enterprise Challenge Fund, Registering and Certifying Agricultural Inputs in Tanzania: An Updated Assessment of Key Constraints and Recommendations for Change, October 2016.

or substandard. It is estimated that substandard inputs affect more than 80 percent of farmers in the country. The outcome of using substandard agricultural inputs results into low productivity; hence increase poverty to Tanzanians who depend on agriculture[10] as the main economic activity.

d) High Price of the needed Agricultural Inputs

There is a problem of high cost of key agricultural inputs such as seeds and fertilizers. Due to high cost of key inputs, farmers have substantially reduced the use of quality agricultural inputs including seeds, fertilizers, and pesticides[11]. For example, on fertilizer, the Free on Board Price (FOB) is between 60 and 67 percent of the price that is available on the market. But, in order to import fertilizer, it requires additional costs of ocean freight, insurance, port charges, bagging, ground transportation charges and gross margin to agro-dealers[12].

e) Priority area of the Government of Tanzania

Sustainable agriculture is among the priority areas of the Tanzanian Government. Hence, the National Audit of Tanzania (NAOT) is focusing on making improvements in the government systems to achieve sustainable agriculture.

Among 17 priority areas identified in the United Nation's 2030 Agenda for Sustainable Development Goals (SDGs), this audit directly supports three Agendas. The use of quality inputs would ensure increase in agricultural production, hence reduce hunger and also increase general level of income both for individuals and for the nation at large. Tanzania aligns with these objectives by establishing legislation, policies and strategies which are used by the Government to achieve the SDGs objectives.

(i) Zero Hunger

This SDG goal is targeting to eradicate hunger, achieving food security and ensure availability of needed food nutrients to citizens. Availability and accessibility of good quality agricultural inputs to farmers ensures maximum productivity of the agriculture food crops and reduce hunger to farmers who account for 75% of the total population in Tanzania.

10http://www.ippmedia.com/sw/makala/pembejeo-feki-zakausha-nusu-ya-mavuno-njombe

11 Adeleke Salami, Abdul B. Kamara and Zuzana Brixiova, Smallholder Agriculture in East Africa: Trends, Constraints and Opportunities, AFRICAN DEVELOPMENT BANK GROUP, April 2010

12 Tanzania Fertilizer Assessment, June 2012

(ii) No poverty in all its forms

This SDG goal aims at boosting the incomes, alleviate the suffering and build the resilience of those individuals who still live in poverty. Accessibility and availability of good quality agricultural inputs ensure increased farmers' productivity. This increase in productivity will lead to increased income and improved livelihood, which in turn will lead into poverty reduction in all of its forms because 75% of the citizens will have access to the basic needs.

(iii) Decent work and economic growth

This SDG goal aims to promote sustainability in economic growth and productive employment to citizens in the country. Currently, agricultural sector employs 75% of the citizens in the country and contribute 29.1% of the country's GDP. Accessibility to quality agricultural inputs will increase productivity and therefore will enhance country's development and sustainable employment to its citizens.

Based on the three SDGs mentioned above, it is clear that there are limited availability and accessibility of agricultural inputs to farmers, which poses the risk of food security in the country. Therefore, the management of the National Audit Office decided to conduct a performance audit on accessibility and availability of good quality agricultural inputs in order to understand the current situation, challenges and setbacks that have transpired in the agricultural sector, and also to identify factors that lead to regular changes in the system of acquisition and distribution of agricultural inputs in Tanzania; and make recommendations for further improvements.

1.3. Audit Design

1.3.1. Audit Objective

The objective of the audit was to assess whether the Ministry of Agriculture, through Tanzania Fertilizers Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI) ensure accessibility and availability of quality agricultural inputs to farmers in order to increase agricultural productivity in the country.

Specifically, the audit focused mainly on assessing whether supplied agricultural inputs:

a) Are of good quality;
b) Meet the demand of farmers; and
c) Distributed as required and timely.

1.3.2. Audit Scope

The audit assessed the operations, systems, activities and procedures followed by the Ministry of Agriculture through TFRA and TOSCI to ensure accessibility, availability of fertilizers and seeds, respectively. The audit addressed issues of good quality agricultural inputs including availability and affordability of agricultural inputs to farmers. Also, issues of mechanisms for demand forecasting and supply and distribution of agricultural inputs have been addressed.
The main audited entities were the Ministry of Agriculture, TFRA and TOSCI. This is because the Ministry of Agriculture has a responsibility of ensuring that agricultural inputs are available and distributed to farmers. Moreover, the Ministry of Agriculture is the overseer of agricultural inputs regulatory authorities as well as the Agricultural Inputs Trust Fund.

TFRA was covered because it is responsible for provision of good quality fertilizers and fertilizer supplements so as to increase agricultural production and productivity and is responsible for registering, inspecting and regulating price of fertilizers in the country.

TOSCI was part of the audit because it is responsible for ensuring quality of the locally produced and imported seeds. TOSCI is involved in the registration and inspection of seed producers and seed sellers in the country

The audit team also collected information from the President's Office - Regional Administration and Local Government (PO-RALG), Regional Secretariats (RS) and Local Government Authorities (LGAs) because they are responsible for ensuring farmers are capacitated with enough knowledge that would help them to use quality seeds and fertilizers. Furthermore, LGAs are responsible for establishing the actual demands of the agricultural inputs.

Seed producers and suppliers e.g. Agriculture Seed Agency (ASA), Fertilizer Companies such as Tanzania Fertilizer Company (TFC) were also covered in the audit because they are responsible for producing or supplying seeds and fertilizers used by farmers.

Agricultural stakeholders such as Agricultural Council of Tanzania (ACT), Agricultural Research Institutes, Farmers Associations e.g. Tanganyika Farmers Association and MVIWATA were also covered because they play a role in ensuring that agricultural inputs are available and distributed to farmers. These stakeholders were involved in identifying challenges facing farmers in the country and also advice the government on the proper implementations through their research works.

The audit covered the whole country through sampled regions based on the zones and the level of agricultural activities in the given regions; and covered a period of five financial years from 2013/14 to 2017/18. The reasons for selecting this period was to establish a trend of performance for the Ministry of Agriculture through TOSCI and TFRA regarding availability of good quality agricultural inputs to farmers. The focus was to consider the agricultural input supply systems such as *Agricultural Inputs Voucher System* used from 2013/14 and 2015/16, *Credit Systems* used from 2014/15, Agriculture Input subsidies system through Tanzania Fertilizer Company used from 2016/17, and Bulk Procurement system adopted from 2017 onwards mainly to fertilizers.

1.3.3. Sampling techniques, methods for data collection and analysis

The audit team used various methods for sampling, collecting data from the identified audited entities and analyzed them to come-up with sufficient evidences with regard to accessibility and availability of agricultural inputs to farmers. The applied sampling methods, data collection and analysis methods are explained below:

a) Sampling techniques used

The audit team used non-probability sampling method to select regions and districts that were visited. All regions in Tanzania mainland were grouped into five agricultural zones: these are Southern Highland, Northern, Lake, Eastern and Central Zones. Purposive sampling was used during the selection of visited regions and LGAs by considering criteria such as agricultural geographical zones, regions with the highest production of agricultural crops and regions with the highest use of both seeds and fertilizers.

Purposive sampling was also used to select crops that were covered during the audit. The crops selected are from root, tubers and cereal crops. Maize, Paddy, Cassava, Potatoes and Beans were selected based on the agricultural zones that produce such crops and that widely use both fertilizers and seeds. This technique helped the audit team to get prior information on the agriculture activities in the zones as well as the tendency of using agricultural inputs.

LGAs selection was based on the agricultural zones and the availability of the type of agricultural crops that used seeds and/or fertilizers.

The following were the selected LGAs:

S/No	Regions selected (Agriculture zones)	Selected LGAs	Reason(s) for the selection
1	Kilimanjaro (Northern Zone)	Hai District Council	They mainly produce Beans and Maize crops. Also has good number of agro-shops and sellers of inputs.
2	Rukwa (Southern Highland zone)	Kalambo District Council	They produce Maize mainly and also availability of agro-dealers
3	Mbeya (Southern Highland zone)	Mbeya Rural District Council	They mainly produce Paddy, Maize and Potatoes. Also, availability of agro-dealers and presence of Uyole Agricultural Research Institute
4	Mtwara (Eastern zone)	Masasi District Council	They produce both Maize and Cassava. Also, presence of Naliendele Agricultural Research Institute that deals with root crops seeds and presence of agro-dealers.

The audit team collected data from the Ministry of Agriculture, President's Office-Regional Administration and Local Government, Regional Secretariats, and Local Government Authorities, Regulatory bodies such as TOSCI and TFRA who are located in Morogoro and Dar es Salaam regions, respectively.

Within the Ministry of Agriculture, data were collected from the Crop Development Department and Agricultural Inputs Section that is responsible for establishing demand of seeds and fertilizers in the country and policy formulation. Also, before March, 2017 the Ministry of Agriculture was responsible for registering seeds dealers in the country.

At PO-RALG, data were collected from Sector Coordination Unit. At the Regulatory Bodies namely, TFRA and TOSCI, data were collected from Directorates and Sections that have a role to play regarding management of procurement and distribution of agricultural inputs particularly seeds and fertilizers so as to assess the extent of inspections conducted and the operating price control mechanism of the inputs.

At the regional level, Regional Agricultural Advisors were contacted and they provided information regarding agricultural inputs in their respective regions. At Local Government Authorities, District Agricultural, Irrigation and Cooperatives (DAICO), Agricultural Extension Officers as well as selected farmers from visited villages were interviewed. At LGA level, the

target groups of farmers and users of these agricultural inputs were included in this audit because they were able to provide clarification related to complaints and knowledge on the proper use of agricultural inputs.

b) Methods Used for Data Collection

Three main methods for data collection included; *interviews, documents review* and *physical observations* were used during the audit as described below;

(i) Documents Review

The review of documents enabled the audit team to gain a clear understanding of the subject matter, systems and operations in order to ensure availability of agricultural inputs to farmers so as to establish the root-causes to the identified problems which when rectified would help to improve the situation. The documents reviewed also enabled the audit team to gather evidences and come-up with clear performance status as far as availability of agricultural inputs to farmers is concerned.

Therefore, a number of documents were reviewed including budget allocated against expenditures, action plans, progress reports, strategic plans, policies, guidelines, various ministerial directives regarding agricultural inputs and publications from various entities and scholars regarding agricultural inputs were reviewed as detailed in ***Appendix three of this report***.

(ii) Interviews

The audit team conducted interviews with various officials from the Ministry of Agriculture, President's Office – Regional Administration and Local Government, Regional Secretariats, TFRA, TOSCI and other stakeholders such as agro-dealers, seeds and fertilizer manufacturers, farmers associations and researchers from selected Agricultural Research Institutes.

The interview results helped the audit team to gain more understanding on the subject matter and also to supplement the information that were either missing or not clear from the reviewed documents and physical observations. Refer to ***Appendix four*** for details on interviewed officials.

(iii) Physical Observations

The audit team conducted visits in the selected regions and LGAs to ascertain the extent at which agricultural inputs are being applied and the challenges encountered in these areas so that the evidence obtained from documents reviewed and interviews would help to substantiate their reliability. Physical observations to agricultural inputs sellers and farmers

were also conducted to ascertain the extent and timeliness at which agricultural inputs were being availed to farmers in the selected regions and LGAs. Audit team expected to observe agricultural inputs sellers' compliance with the quality standards during the distribution of good quality agricultural inputs. The audit team was also expected to observe Entry Points visited, TFRA and TOSCI laboratories used to assess the quality of inputs supplied in the country.

Farmers, Agricultural Extension Officers, agro-input sellers and agro-shops were observed on how they assist each other in knowledge sharing about good quality agricultural inputs. In addition, the extent at which farmers were aware on the indicative prices as well as quality identification techniques and farmers involvement during demand establishment process was observed.

(iv) **Methods for Data Analysis**

The audit team analysed data gathered through documents review, interviews and physical observations by separating and grouping them into qualitative and quantitative data so that they could be easily analysed using different approaches.

Quantitative data were analysed by organising, summarizing and compiling them using spread sheets as well as different statistical methods of data computations[13]. The analysed data were presented using data tabulations in tables, histograms and graphs with quantitative labels on indicators, charts and percentage distribution. The presented data were then explained in order to answer the 'what' and 'how many' questions.

Content analysis techniques was used to analyse qualitative data by identifying different concepts and facts that originated from interviews or document reviews and were categorised based on their assertions. The extracted concepts or facts were either tabulated or presented as they were to explain or establish relationship between different variables originating from the audit questions. The recurring concepts or facts were quantified depending on the nature of data being portrayed. The quantified information (concepts/facts) were then summed or averaged in spreadsheets to explain or establish the relationship between different variables.

The audit questions and sub-questions were recorded in the columns and different interviews or reviewed documents in the rows. Key words indicating the relevant evidence were recorded in the cells to get an overview for analysis of similar threads and differences.

[13] Including mean, mode, median and range

Depending on the number of interviews and documents reviewed, the information was transformed into quantitative data by going through interviews/documents to see how many of them included a positive statement about a certain issue, or how many have made similar statements. Calculation was made, expressing the percentage of investigated documents or interviews that include a particular type of statement.

1.3.4. Assessment Criteria

Assessment Criteria were drawn from different sources such as Policies, Legislations (Acts and Regulations), Guidelines and Strategic Plans of the Audited Entities. Below are the assessment criteria for each sub-objective:

Extent of farmers' complaints about the availability and accessibility of good quality agricultural inputs

The Ministry of Agriculture is required to ensure adequate and sustainable availability and accessibility of good quality and needed amount of agricultural inputs to farmers as stipulated in the National Agricultural Policy, 2013.

Supply of quality agricultural inputs to farmers

The supplies of both seeds and fertilizers to farmers are controlled by respective legislations. According to Seeds Regulations of 2007, any seed sample for testing should be taken by a Seed Inspector or Authorized Inspector in accordance with the requirements prescribed under these Regulations. Also, it requires the conduct of seed testing for the purpose of certification to be conducted by an official seed testing laboratory or any authorized laboratory (Regulation 38(1).

The Director responsible for fertilizer is required to ensure fertilizers or fertilizer supplement is inspected, sampled and analyzed for quality control in accordance with the procedures prescribed in the Fertilizer Act, 2009. Furthermore, Fertilizers Act, 2009 and Seeds Act 2003 and Regulations, 2007 require TFRA and TOSCI respectively to:

a) Register all agricultural inputs and inputs supplements dealers and their premises;
b) License agricultural input dealers; and
c) Issue permits for importation of fertilizers and seeds and Input supplements.

Mechanisms for demand establishment to ensure availability and accessibility of good quality agricultural inputs

According to the approved Ministry's organization structure it requires the Ministry of Agriculture through its Crop Promotion Agricultural Input and Cooperative Section to establish national supply and demand for Agro-Inputs distribution and utilization and develop Agricultural Inputs Database.

Existing mechanism for procurement and distribution of agricultural inputs to guarantee supply of good quality inputs to farmers

The National Agricultural Policy, 2013 requires domestic production, multiplication and distribution of agricultural inputs to be promoted and to involve both public and private sectors. It also encourages strengthened inter-sectorial coordination and linkages in order to increase efficiency and effectiveness and to ensure short and long-term financing for agriculture as well as strengthen the provision of extension services to farmers.

The Fertilizers Act of 2009 stipulates that a person should not manufacture, import, export, sell, distribute any fertilizer or fertilizer supplements unless he is registered pursuant to the Act and conforms to the standards prescribed in the Regulations.

Tanzania Fertilizers Regulatory Authority was required to regulate the price of fertilizer based on the appropriate methods set out in the Fertilizer Act, 2009. Also, it requires TFRA to regulate and control transportation, dealing, storage, and disposal of fertilizer and fertilizer supplements.

Mechanism for monitoring and evaluating TOSCI and TFRA's performances

According to National Agricultural Policy of 2013, the Ministry of Agriculture is required to formulate and review agricultural policies as well as to monitor and evaluate the performance of procurement and distribution of agricultural activities in the country. Also, it requires them to provide and supervise the implementation of regulatory services for Agricultural Sector Development;

Good Practices-ISO 9001:2008 requires an entity to apply suitable methods for monitoring in order to check if the planned result have been achieved or not.

1.4. Data Validation Process

The Ministry of Agriculture through Tanzania Fertilizers Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI) were given an opportunity to go through the draft audit report. The Ministry

of Agriculture, TFRA and TOSCI confirmed the accuracy of the information presented in this report. The comments and responses of the Ministry of Agriculture, Tanzania Fertilizers Regulatory Authority and Tanzania Official Seed Certification Institute are shown in Appendix 1.

1.5. Standards Used for the Audit

The audit was conducted in accordance with the International Standards for Supreme Audit Institutions (ISSAIs) on performance auditing. The standards require the audit office to plan and perform the audit so as to obtain sufficient and appropriate audit evidence as well as provide a reasonable basis for findings and conclusions based on audit objective(s). The audit office believes the evidences obtained provide a reasonable basis for the findings and conclusions based on the audit objectives.

1.6. Structure of the Report

This audit report consists of five chapters whereby the remaining chapters cover the following:

Chapter Two presents the description of the system that ensures availability and accessibility of good quality agricultural inputs (Seeds and Fertilizers) in Tanzania. In addition, it covers legal framework, processes of demand establishment and quality control, key players and stakeholders together with their responsibilities;

Chapter Three presents the findings of the audit covering quality of inputs distributed; farmers' demands; planned distribution of inputs and monitoring and evaluation of the performance of TFRA and TOSCI.

Chapter Four provides overall and specific conclusions for the audit; and

Chapter Five outlines the audit recommendations that can be implemented by the Ministry of Agriculture through TOSCI and TFRA to improve the system used to procure and distribute agricultural inputs to farmers in Tanzania.

CHAPTER TWO

SYSTEM FOR PROVISION OF GOOD QUALITY AGRICULTURAL INPUTS TO FARMERS

2.1 Introduction

This chapter describes the system for provision (availability and accessibility) of good quality agricultural inputs to farmers in Tanzania. It also covers legal and administrative framework, key stakeholders involved and their main responsibilities and processes for ensuring availability and accessibility of good quality agricultural inputs (Seeds and Fertilizers).

2.2 Policies, Laws and Regulations ensuring availability and accessibility of Good Quality Agricultural Inputs (Seeds and Fertilizers)

This part explains policies, laws and regulations on the procurement and distribution of agricultural inputs to farmers in the country.

2.2.1 National Agricultural Policy of 2013

The objective of the policy is to enhance productivity through increased use of cost-effective, financially sustainable and environmentally sound agricultural inputs.

To fulfill that objective the policy intends to ensure that: "*The government enforces laws and regulations that ensures : farmers are safeguarded from the supply of substandard agricultural inputs; agricultural inputs' production, procurement and distribution strengthened; private sector participation in multiplication of pre-basic and basic seed promoted; and farmers are supported to access modern agricultural inputs*".

2.2.2 Governing Legislations

There are various laws and regulations governing the management, accessibility and availability of agricultural inputs in the country. These Legislations are Fertilizers Act of 2009, and its Regulations of 2011 revised 2017, Seed Act No. 18 of 2003 and its Regulations of 2007, Plant Protection Act, 1997 and its Regulations of 1999 and the Local Government (Urban Authorities) Act 1982.

Table 2.1: Legislations governing Accessibility and Availability of Agricultural Inputs

Legislations	Issues covered related to Agricultural input	Responsible entity
Plant Protection Act, 1997 and its Regulations of 1999	Registration of plant protection substances, importation of seeds, records keeping, power of inspectors, offences and penalties for importers or manufacturers of plant substance.	Ministry of Agriculture
The Fertilizers Act, 2009 and its Regulations, 2011.	Governs establishment and functions of TFRA; registration of fertilizer and sterilizing plants; licensing of fertilizer dealers, manufacturing, importation and trading in fertilizer or fertilizer supplements; fertilizer inspections, sampling and analysis, and power of inspectors	Tanzania Fertilizers Regulatory Authority
Seeds Act, 2003 and its Regulations, 2007	Issuance of permit for importation and exportation of input; establishment of Tanzania Official Seed Certification Institute (TOSCI); importation, exportation and sales of seeds, restriction on sale, importation or exportation of seeds; registration of seed dealers; and records keeping and analysis of the sampled seeds	Tanzania Official Seed Certification Institute (TOSCI) and Ministry of Agriculture
The Local Government (Urban Authorities) Act 1982	Requires Local Government Authorities (LGAs) to provide services for the improvement of agriculture generally.	PO-RALG and LGAs

***Source**: Extract from Plant Protection Act, 1997 and its Regulations of 1999, Fertilizers Act, 2009 and Regulations, 2011, Seeds Act, 2003 and Regulations, 2007 and the Local Government (Urban Authorities) Act 1982.*

2.2.3 Strategies for ensuring availability and accessibility of good quality agricultural inputs (Seeds and Fertilizers)

Agricultural Sector Development Strategy I and II (2001/02 - 2014/15, 2016/17 – 2024/25)

This strategy aimed at transforming the agricultural sector towards higher productivity of priority commodities (crops, livestock and fishery). The increased productivity is a prerequisite for food security and agricultural commercialization.

The strategy insists that there is a need to accelerate the adoption of yield-enhancing technologies such as increase in fertilizer consumption from less than 20 kg to 50 kg per arable hectare by 2025. Use of quality seeds of improved varieties should be doubled from 28,000 to 56,000 Metric Tonnes

(MT) by 2025, reduce on-farm and post-harvest losses by half of 30 to 40% losses reported in 2016/17 by the year 2025.

The intention of this strategy is to facilitate private traders and agro-dealers to enhance business network so that access to agricultural inputs by smallholder farmers is improved in the rural areas by 2025. Also, the strategy intends to strengthen the national seed system by 2025 by improving accessibility of inputs.

2.2.4 Systems used in management of Agricultural Inputs from 2013/14 to 2017/18

The systems used by the ministry in ensuring that agricultural inputs are accessible to farmers were as follows;

i. ***Agricultural Inputs Voucher System 2013/14 and 2015/16***
In this system the government through the Ministry of Agriculture sits with selected Agro dealers and discuss arrangements of providing vouchers of 50% of the actual agricultural input prices. The district agricultural input committee from both village and Ward levels were responsible to ensure that suggested farmers will be supplied with the input planned to reach them by using the Government Article[14].

ii. Credit System (2013/2014)
In this system the government decided to distribute Agricultural inputs through selected financial institutions. Only registered groups of farmers were allowed to apply for the loan with no interest, to buy the required Agriculture inputs. The setback of this system was that banks required them to have an active bank account of at least 20% as security of the applied loan.

iii. Distribution through Tanzania Fertilizer Company (2015/2016)
The government selected TFC as main distributor of Fertilizer in the country, which ensured market. The Agricultural Input Voucher system was used to distribute the fertilizers to farmers. TFC have ceased provision of this service to farmers due to unpaid debts.

[14] Waraka wa mkakati wa utekelezaji na usimamizi wa utoaji wa ruzuku ya pembejeo za kilimo kwa wakulima kwa kutumia Vocha .

iv. System used from 2017 onwards on inputs availability in the country

Bulk Procurement system that was adopted from 2017 onwards mainly for fertilizers
In this system TFRA is responsible to evaluate tenders for fertilizer supply. The winning tenderer is responsible for ordering and distribution of fertilisers to farmers. The government's role is to ensure that the prices of fertilisers are fair by setting indicative prices.

Procurement system that was adopted on from 2017 onwards mainly for seeds
From the year 2017/18 seed companies carried out all seeds produced, imported and distributed. The government's role is to ensure that quality of the imported and produced seeds in the country are of required standards achieved through inspections.

2.3 Roles of Key Players and Stakeholders

2.3.1 Roles and Responsibilities of the Ministry of Agriculture

Since the objective of the Ministry is to provide expertise and services on crop development, the Ministry of Agriculture have the mandate to formulate, review and monitor implementation of crop development policies, legislations and rules, to develop crop development strategies and programmes.

The specific agricultural input section of the Ministry performs those roles through the following functions:

a) Initiate and review policies and strategies on agricultural inputs;
b) Inspect and certify crop varieties;
c) Control quality of seed varieties;
d) Facilitate promotion of on-farm seed production (Quality Declared Seed [QDS]);
e) Promote private sector participation in seed production;
f) Enforce agricultural inputs legislation (fertilizers and seeds);
g) Process and register new seed varieties,' seed farms and seed dealers;
h) Establish national supply and demand for Agro-Inputs distribution and utilization;
i) Establish and enforce appropriate inputs delivery systems;
j) Build capacity of Regional Secretariats and LGAs' agricultural extension officers to provide advisory services on appropriate handling and use of agricultural inputs; and
k) Develop Agricultural Inputs Databank.

Institutions under the Ministry of Agriculture

There are various institutions which work under the Ministry of Agriculture as stipulated in different legislations described in Section 2.2.2. These Institutions are Tanzania Fertilizers Regulatory Authority (TFRA), Tanzania Official Seed Certification Institution (TOSCI), Agricultural Seed Agency (ASA), and Agricultural Research Institute (ARI). Their functions are stipulated below;

(i) Tanzania Fertilizers Regulatory Authority (TFRA)

Functions of TFRA are stipulated under Section 4(1) of Tanzania Fertilizers Act, 2009. The Authority is the regulatory body in the fertilizers industry and particular responsible for:

a) Regulating all matters relating to quality of fertilizers, fertilizer supplements and sterilizing plants;
b) Registering all fertilizers and fertilizer supplements dealers and their premises;
c) Licensing fertilizer dealers;
d) Issuing permits for importation and exportation of fertilizers and fertilizer supplements;
e) Maintaining a register of fertilizers, fertilizer supplements and sterilizing plants;
f) Regulating and controlling the import, production, transportation, dealing, storage, and disposal of fertilizer or fertilizer supplements;
g) Making guidelines on the sound management and effective control of fertilizers and fertilizer supplements;
h) In collaboration with Local Government Authorities, conducting public educational campaigns on the sound application and management of fertilizers and fertilizer supplements;
i) Conducting regular training of stakeholders on fertilizer matters;
j) Inspect or cause to be inspected fertilizer or fertilizer supplements for quality assurance;
k) Implementing policies, strategies and programmes relating to fertilizer industry development; and
l) Regulating fertilizer price based on the appropriate methods as shall be set out in the regulations.

(ii) *Tanzania Official Seed Certification Institute (TOSCI)*

TOSCI roles are described on Schedule 1 under Section 10 of Seeds Act of 2003. The Institute has the following duties:

a) conducting seed field inspections;
b) effecting sampling and testing;
c) conducting seed inspections;

d) Registering newly developed varieties of Seeds
e) accrediting seed sampling and seed testing laboratories;
f) training seed producers, seed inspectors and seed analysts;
g) carrying-out variety performance tests;
h) issuing seed transportation order, seed import permit and seed export permit; and
i) carrying-out pre and post quality control tests.

(iii) Agricultural Seed Agency (ASA),

ASA is a Government Executive Agency that took over the responsibilities previously performed by the Seed Unit under the Ministry of Agriculture. ASA is responsible for ensuring availability of high quality and affordable agricultural seeds in the country on sustainable basis. The following were the specific roles of ASA;

a) To increase seed production and distribution;
b) To promote private-Public Partnership in seed production;
c) To promote the use improved seeds
d) To strengthen collaboration with research institutes on matters related to availability of new crop varieties.

(iv) *Agricultural Research Institutes (ARI)*

About 28 academic and agricultural research institutions play an important role on issues regarding research on variety improvement, and provision of advice to farmers. These institutes have been mandated to disseminate research results; and provide advisory services to Ministry of Agriculture (MoA) and private sector through consultancies. They are responsible to conduct research on crop varieties that adapt different agro-ecological conditions and fertilizer recommendations in the country.

(v) National Seed Committee

The National Seeds Committee (NSC) is under the Ministry of Agriculture and has the following key roles:

a) receiving and handling appeals when there are disputes;
b) keeping records pertinent to the knowledge on the industry including list of registered, patented and trademarked seeds; and
c) approving and list released varieties in relevant publications.

There are two Sub-committees under the NSC. The National Performance Trial Technical Committee (NPT-TC) which is responsible for reviewing the National Performance Trial (NPT) results and recommend a variety for

release to the National Variety Release Committee (NVRC) responsible for reviewing recommendations from NPT-TC and recommend variety for release to the NSC, which approves the new variety to be entering into the market.

The National Seed Committee is formed with members from Ministry of Agriculture who are the Permanent Secretary as the Chair of the committee, Director General from TOSCI, research department from the Ministry of Agriculture, and officials from the government Agricultural Research Institutes (ARI).

2.3.2 Roles and Responsibilities of other Stakeholders

(i) Regional Secretariats (RS)

Regional Agricultural Adviser (RAA) is the administrator and chief adviser of agricultural activities in the region. He reports to the Regional Administrative Secretary (RAS).

Regional Agricultural Adviser is specifically responsible for:

a) overseeing the implementation of policies and guidelines for the implementation of extension services at the LGAs within the region;
b) compiling annual demand of fertilizers and seeds from Local Government Authorities and submit to the Ministry of Agriculture.

(ii) Local Government Authorities (LGAs)

The main responsibility of the LGAs is to provide extension services for the improvement of agriculture in the country. LGAs are also responsible for identifying beneficiaries of subsidized agricultural inputs (Under National Voucher System), raise awareness to farmers during the time of distributing inputs, monitor the distribution of inputs in LGAs, and also compile farmers' annual demand on needed agricultural inputs.

(iii) Civil Society Organizations (CSOs)

Civil Society Organizations (CSOs) comprise a diverse group of actors including both local and international organizations. The most critical role of Civil Society Organizations is to educate farmers on the importance of using quality seed of improved varieties, better farming methods; appropriate fertilizer use; and helping to find markets for farmer's agricultural produces.

2.4 Allocated Resources for the provision of good quality agricultural inputs

2.4.1 Financial Arrangement for the provision of good quality agricultural inputs (Seeds and Fertilizers)

(i) *At Ministerial Level*

The Ministry of Agriculture depends on various sources of revenue such as government subvention and donor funds for financing activities for the management of provision of good quality agricultural inputs.

Table 2.2: Financial Commitment for the provision of good quality Agricultural Inputs (TZS in Million)

Financial Year	ENTITY/SECTION					
	Ministry of Agriculture		TFRA		TOSCI	
	Budgeted	Released	Budgeted	Released	Budgeted	Released
2013/14	114,218	42,092	500	196	2,305	1,889
2014/15	121,946	54,695	500	201	2,453	2,017
2015/16	84,843	4,817	500	131	1,466	1,215
2016/17	46,878	31,844	439	439	2,772	2,085
2017/18	16,570	12,425	1,493	1,493	5,329	3,920

Source: ***Ministry of Agriculture, TOSCI and TFRA Medium Term Expenditure Framework 2013/14- 2017/18***

From Table 2.2 there was general increase of the amount budgeted and spent by both TOSCI and TFRA over years towards ensuring quality agricultural inputs are available to farmers. The funding for the Ministry of Agriculture was fluctuating but there was general decrease of the budgeted and amount spent in 2017/18 compared to 2013/14.

(ii) *At Local Government Authority Level*

Local Government Authorities are planning and budgeting for agricultural activities in order to ensure accessibility and availability of good quality agricultural inputs to farmers as shown in Table 2.3;

Table 2.3: Financial Commitment for Agricultural Activities from July 2013 – June 2018

Name of LGAs	Financial year Funds (TZS in Million)									
	2013/14		2014/15		2015/16		2016/17		2017/18	
	Budgeted	Released	Budgeted	Released	Budgeted	Released	Budgeted	Released	Budgeted	Released
Hai DC	613	27	1,005	39	845	871	802	33	439	39
Mbeya rural DC	474	71	26	26	250	35	164	0	50	9
Kalambo DC	0	0	21	12	48	48	299	4	265	53
Masasi DC	492	280	224	0	132	67	247	88	285	71

***Source**: Medium Term Expenditure Framework of the visited LGAs from Financial year 2013/14 to 2017/18*

Generally, there is decreasing trend of the budgeted and the released amount to cater for agricultural activities in the visited LGAs. This trend hinders the prompt provision of agricultural services to farmers to foster good agricultural practices.

2.4.2 Allocated Human Resources in Responsible Entities

Human resources such as trained inspectors from regulatory authorities and LGAs level is also required to ensure that registration, inspection, analysis and training as well as quality agricultural inputs to farmers are supplied and adequately applied.

Table 2.4: Human resource status of regulatory Authorities

Entity	Type of Human resource	Description	Number of Staff required	Number of staff allocated
Ministry of Agriculture	Inspectors	Plant Health Inspectors	230	165 (72%)
TOSCI	Research officers, field officers, laboratory attendants and authorized seed inspectors	Staff at HQ and Zonal Offices	112	52 (46%)
		Seed inspectors at LGAs	182	80 (44%)
TFRA	Laboratory attendants and fertilizer inspectors	Staff at HQ	20	8 (40%)
		Fertilizers inspectors at LGAs	182	100 (55%)

Source: ***Auditors' Analysis (2018) from Staff Establishment of the Ministry of Agriculture, TOSCI, and TFRA***

From Table 2.4, it is clear that the regulatory institutions except Plant Health Services of the Ministry have less than 50% of the required staff to effect respective quality assurance activities of either fertilizer or seed by the year 2018.

2.5 Processes for ensuring Accessibility and Availability of Good Quality Agricultural Inputs

2.5.1 *Registration of inputs and agro-dealers*

Before 2017, the Ministry of Agriculture through Agricultural Input Section conducted registration activities for agricultural inputs and agro-dealers. Currently, both the Tanzania Fertilizers Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI) do the registration activities. Each agro-dealer should comply with the established requirements for registration and then regulatory authority conduct physical verification to assess the capacity of the agro-dealers. Agro-dealers are supposed to have a Tax Identification Number, the storage capacity and knowledge of the business.

2.5.2 *Demand establishment process*

The Ministry of Agriculture is responsible for establishing annual demand of agricultural inputs for the whole country. Demand establishment process starts from farmers in the village who identify all types of agricultural inputs needed and submit the list to the Village Agricultural Extension Officer

(VAEO) for further procedures. The Ward Agricultural Extension Officer (WAEO) is required to compile the requirements of all villages within a ward and submit the consolidated list of demand to Local Government Authority level which shares it with the Regional Secretariat. The Regional Secretariat compiles the information of all LGAs and shares it with the Ministry of Agriculture which is responsible to establish demands of agricultural inputs for the whole country.

Under bulk procurement process adopted in 2017, the demand establishment process was used to identify the quantity of fertilizers to be procured under a certain period whereby the demand from input suppliers and distributors were considered in procuring the needed fertilizers.

2.5.3 *Importation/Production of inputs*

Importation and/or production of the agricultural inputs used in the country depends on the demand established by the Ministry of Agriculture. Currently, importation is inevitable, as the locally produced agricultural inputs do not suffice the demand. More than 90% of fertilizers used in the country are imported. Seeds used by farmers are produced both by local and international companies. Almost 60% of seeds are locally produced and 40% are imported.

2.5.4 *Inspection activities at the farm, agro-shops and* Entry Points

Before any agricultural input enters in the country it is required to be inspected by the Ministry of Agriculture, TOSCI or TFRA at approved entry point to assess the quality and compliance of the stipulated contents. More than 90% of fertilizer is imported through Dar es Salaam port, where all the required assessments are conducted before distribution to the respective points. Seeds are imported through different entry points that are available in the country including Dar es Salaam airport, Dar es Salaam port, Tunduma and Namanga. Seed and Fertilizer Inspectors/Analyst are required to take samples from the consignment at any entry point to assess the quality and contents of the inputs before they enter into the country.

Inspection at the farm

Seeds produced locally are required to be inspected from two to four times depending on the crop and variety. TOSCI inspectors are required to assess compliance of the farm with the required condition such as sustainability and uniformity. TOSCI officials also inspect, test to identify germination and purity capacity of the seeds during the seeds preparation process and before entrance into the market. Table 2.5 elaborate on the analysis conducted by TOSCI.

Table 2.5: Samples analysis conducted by TOSCI

Year	Number of Samples Tested	Succeed Samples	Not succeeded Samples
2015	1,623	1,261	362
2016	2,853	2,063	790
2017	2,744	2,073	671
2018	1,533	1,373	160

Source: Various Quality Control Reports produced by TOSCI between 2015 and 2018

Table 2.5 shows the trend of seed analysed by TOSCI for the past four years. The un-succeeded (failed) samples have been declining from 2016. This trend indicates that there has been increased awareness among seed producers on conditions required to produce and market high quality seed.

The process of ensuring quality seeds are available in the market requires conduct of samples analysis. The succeeded samples tend to increase as awareness among seed producers on the conditions required for producing quality seeds increases.

Inspection at agro-shops

TOSCI and TFRA are required to conduct inspections in order to ensure compliance of agro-dealers with the distribution and quality requirements. Inspections activities are carried out to identify compliance with indicative price, quality of fertilizer and seeds, storage, and the quality of agro-shops. Agro-dealers are also required to operate with business license provided by regulatory authorities both TOSCI and TFRA. In inspection processes, these authorities also look at the registration status of the agro-dealers as well validity of their business licenses.

2.5.5 *Monitoring of activities conducted by TOSCI and TFRA*

The Ministry of Agriculture is required to monitor the implementation of agricultural activities in the country. Under National Voucher System, the Ministry of Agriculture is responsible for assessing the impact of the distributed agricultural inputs to farmers by inquiring sampled farmers regarding the inputs distributed to them. Under input credit the Ministry of agriculture is responsible to coordinate and monitor mechanism used to ensure inputs reach farmers timely.

2.6 Ministry's plans to ensure availability of quality agricultural inputs to farmers

Regulatory bodies' establishment

Ministry of Agriculture managed to establish institutions, which ensure availability and accessibility of quality inputs in the country. TOSCI and

TFRA were established to ensure quality fertilizers and seeds are supplied all over the country. These institutions are responsible for registration, certification, inspection, price determinations of agricultural inputs supplied in the country.

Provision of awareness to farmers

The Ministry of Agriculture through the implementation of Agricultural Sector Development Programme (ASDP I) managed to conduct awareness programs that enable farmers to understand the importance of using seeds of improved varieties including Open Pollinated Varieties (OPV) and Hybrids, and Solid Fertilizers; and establishment of farmers' groups so as to get credit assistance. PO-RALG through LGAs has set aside budgets that enable agricultural officers to conduct awareness programmes on various agricultural activities. However, the implementation of agricultural activities at LGA level was not well conducted because funds to cater for planned activities were limited to enable agricultural extension officers to reach large number of farmers.

2.7 Summary of activities to ensure availability and accessibility of good quality Agricultural Inputs in the country

In order to ensure agricultural inputs of good quality are available to farmers, the Ministry of Agriculture needs to establish and oversee agricultural policies implemented in the LGAs under the coordination of PO-RALG. The Regulatory authorities such as TFRA and TOSCI have the responsibility for ensuring that farmers access quality fertilizers and seeds, respectively. In addition, entities under the Ministry of Agriculture responsible for credit facility should ensure that farmers have access to credit in order to increase use of agricultural inputs in the country.

The following is the summary of activities performed by different actors in the country to ensure availability and accessibility of good quality agricultural inputs to farmers.

Table 2.6: Actors Involved in accessibility and Availability of good quality agricultural Inputs

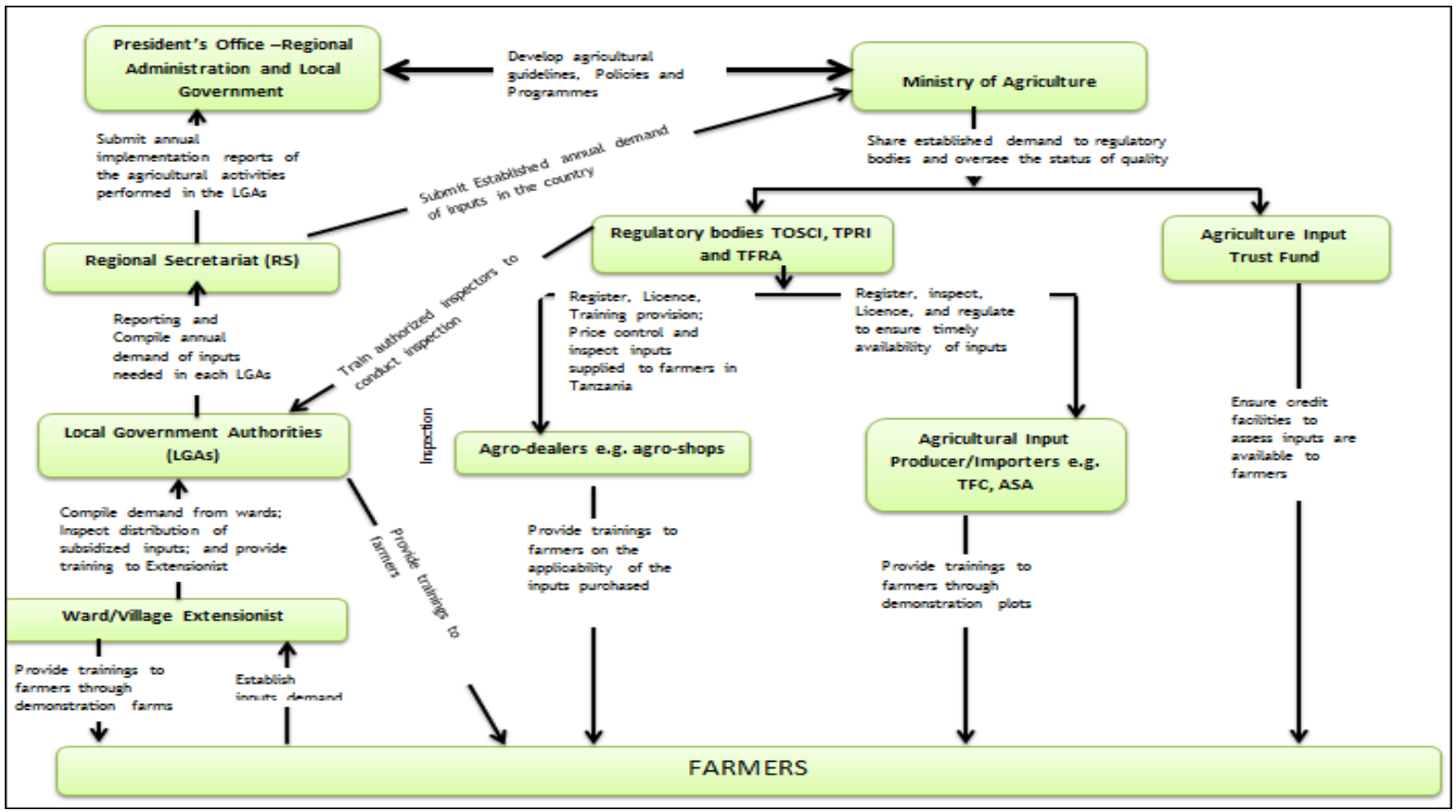
S/No	Activity	Responsible Stakeholders
1.	Establishing agricultural inputs guidelines, programmes and policies	Ministry of Agriculture & President's Office – Regional Administration and Local Government
2.	Establishing demand of agricultural inputs establishment	Ministry of Agriculture, Regional Secretariat & LGA, TFRA, TOSCI
3.	Setting price of the inputs to suppliers, Transportation, registration and licensing, inspection of inputs supply chain, conduct laboratory sample Analysis of the inputs.	TOSCI, TFRA [NOTE: TFRA has been given that mandate of setting price ceiling on fertilizers only but TOSCI has not been given that mandate but they can sit down with other seed stakeholders including seed companies and discuss how best price can be reduced
4.	Production/importation of agricultural inputs.	Inputs producers/importers Companies including ASA, TFC, ARI
5.	Creating/raising awareness to farmers	Ministry of Agriculture, TOSCI, TFRA, Extension officers, Agro-Dealers, CSOs
6.	Establish credit facilities to farmers	AGTF

***Source**: Auditors' Analysis, 2018*

2.8 Relationship between actors involved in the provision of quality inputs in the country

Relationship between actors involved in the provision of good quality agricultural inputs to farmers is summarized in Figure 2.1:

Figure 2.1: Pictorial relationship between actors involved in the provision of agricultural inputs to farmers



***Source**: Auditors' Analysis, 2018*

CHAPTER THREE

AVAILABILITY AND ACCESSIBILITY OF GOOD QUALITY SEEDS TO FARMERS

3.1 INTRODUCTION

This chapter presents findings on the performance of the Ministry of Agriculture through Tanzania Official Seed Certification Institute (TOSCI) on the availability and accessibility of good quality seeds to farmers in the country.

The findings presented in this chapter address the specific objectives of the audit which was to assess whether supplied seeds:

a) are of good quality;
b) meet the demand of farmers; and
c) are distributed to farmers as required and timely.

The following are the detailed findings of this audit:

3.2 Insufficient availability and accessibility of good quality seeds

The review of inspection reports, complaints files and annual implementation reports from TOSCI and the interviews held with officials from the Ministry of Agriculture, PO-RALG and TOSCI noted that there was insufficiency availability and accessibility of good quality seeds to farmers throughout the country. The following are the problems that were identified in this area:

a) supply of low quality or unsuitable seeds to farmers;
b) untimely supply of required seeds; and
c) unaffordable price of seeds.

These are further detailed below:

3.2.1 Supply of low quality seed *to farmers*

The audit noted that availability and accessibility of good quality seeds is still a challenge to farmers. Some farmers access substandard seeds for use in their farms, which reduce yields of agricultural produce as evidenced by the following:

Complaints on the supply of substandard seeds to farmers

The audit noted that farmers raised a number of complaints on the quality of seeds supplied in the market. These were some of the complaints from farmers to TOSCI.
The complaints of farmers were on the following aspects:

a) ***Unviable seeds (Seeds which fail to germinate)***
In this category, seeds sold to farmers could not germinate and emerge from the soil. This problem was highly reported to TOSCI by farmers from the Northern Zone. For Example, in Kilimanjaro and Arusha region specifically Hai, Meru and Moshi districts, maize seeds of the varieties Pioneer 2859, DKC 90-89, SC 627 and SC 403 supplied, had low germination capacity confirmed by TOSCI.

b) ***Viable seeds that grow but do not produce the intended result***
This specific problem was reported from Manyara and Morogoro regions. Farmers complained that maize seeds of the varieties Pioneer 3253 and SC 627 did not produce the intended grain yields.

Reporting complaints about underperforming seeds

Although there were many complaints from the farmers about the performance of seeds sold in the market, the audit observed that TOSCI had very few recorded complains.

TOSCI explained that farmers are required to provide sample and receipt of payments of the complained seed when reporting about the problem. During the audit, it was observed that many farmers are not aware of these requirements.

The audit was able to review files and noted that very few complaints were recorded between year 2013/14 and 2017/18, as indicated in Table 3.1

Table 3.1: Complains recorded by TOSCI

Period	Agrovet /Farmer Complaints	Type of the problem	Identified variety	Lot Number	Reasons observed after conduct laboratory tests
2013/14	Farmers from Babati	Inadequate Seed Germination	SC 513 SC 627	111 ZEM 0364 1238 ZEM 5326 1238 ZEM 5332	Seeds packets lack important information such as germination capacity, date of testing and other necessary quality information.
2013/14	Distributed through subsidies in 2014	Inadequate Seed Germination	SC 627	1238 ZEM 5316	• Germination dropped to 80% in Feb, 2014. • Seeds tested in Zambia December 2012, Imported in the country in June 2013 and distributed through subsidies in February 2014.
2014/15	King'ori farmers in Meru DC	Seeds did not germinate	SC 627 SC 403	111 ZEM 0291	Maize seeds SC 627 Germination percentage dropped 90 %to 74%
2016/17	-Asenga Agrovet -Kwamba farmers -General Agrovet	Inadequate seed germination	Pioneer 3253	1325 ZEM 4186 1325 ZEM 5444 1325 ZEM 4188 1325 ZEM 4183	Germination percentage on the maize seeds with lot number 1325 ZEM 4186 was 41%, which was below 90%, the minimum germination requirement.

Period	Agrovet /Farmer Complaints	Type of the problem	Identified variety	Lot Number	Reasons observed after conduct laboratory tests
2016/17	-Lower Moshi farmers - Assenga Agrovet -Tesha Agrovet Hai Farmers	Seeds were not germinated	Pioneer PHB 3253 PHB 30G19 PHB 2859	1325 ZEM 4034, 1340 ZEM 5444 1325 ZEM 4039, 1325 ZEM 4039 1325 ZEM 4039, 1325 ZEM 4037	Germination was below 90%, which is the minimum requirements : • Seeds PHB 3253 with Lot No. 1325 ZEM 4034 was 54% • Seeds PHB 30G19 fell to 20% • Seeds PHB 3253 with Lot No. 1340 ZEM 5444 was to 0%
2016/17	Moshi farmers	Seeds were not germinated	DKC 90-89	1527 ZEM 3139	Tested and found they were capable to germinate.
2016/17	Mella farmer	Inadequate Seed Germination	Maize Seeds Syngenta SY 514		Seeds distributed were not certified by TOSCI. The Seed had Interagency label showing was produced outside the country and imported without being certified by TOSCI
2016/17	Farmer Mvumi village Morogoro	Seeds were not germinated	WE 2109	51378 TAN 0009	Germination percent was to 9% for the remained seeds from the farmer tested by TOSCI Morogoro.

***Source*:** *Complaints files from TOSCI between 2013/14 to 2016/17*

Table 3.1 indicates reported complains regarding the quality agricultural seeds supplied to farmers in the country in different regions.

Table 3.2 provides the trend analysis of the number of complaints received by TOSCI from farmers regarding the quality of seeds supplied in the market for the period from 2015/16 to 2017/18:

Table 3.2: Total number of complaints registered by TOSCI from farmers on quality of seeds from 2015/16 – 2017/18

Financial Year	Total number of complaints received from farmers
2013/14	2
2014/15	1
2015/16	Nil
2016/17	5
2017/18	Nil

Source: *Implementation reports prepared by TOSCI from 2015 up to 2017*

Table 3.2 shows that TOSCI did not record complaints in some of the audited years as indicated. However, generally, number of recorded complaints has been increasing over the years.

Further analysis was made to analyze the category of complaints regarding supply of sub-standard seeds. Table 3.3 provides the analysis in terms of the category and the number of complaints received:

Table 3.3: Number of complaints received per category from 2015/16 – 2017/18

Category of Complaints	Number of complaints received per category	Complaints received per category (%)
Seeds do not germinate	4	50
Inadequate seed germination	3	37
Seeds are growing different from expectation	1	13

Source: *Implementation reports prepared by TOSCI between 2015 up to 2017*

Table 3.3 indicates that most of complains that were reported are due to inability of seed germination. This is mostly caused by various factors, such as environment (storage environment due to low understanding of the seed dealers and farmers), failure by TOSCI to effectively re-test the available seeds in the market and so on.

It was further noted that TOSCI did not maintain complaints register with sufficient information that could serve the following purposes:

a) prioritizing inspection plans for the institution;

b) analyzing risks associated with seed usage by the farmers;
c) effective utilization of manpower within the institution so as to reach the intended objectives;
d) easy identification of challenges in the whole seed chain that face farmers (from production where manufacturer is involved to distribution where transporters and agro dealers are involved and utilization where the farmers are the main players); and
e) help in identifying and stopping possible non-compliance behavior before occurring.

Therefore, it was noted that due to insufficient information in the complaints register, TOSCI operated in an ad- hoc manner, and hence, unable to capture many incidences of low quality seeds supplied to farmers. This affected TOSCI ability to provide effective inspection and utilize its human resources efficiently.

Effects of supplied substandard seeds

It was further noted that there has been a decline of agricultural crops yield, due to the use of substandard seeds by the farmers. Table 3.4 provides details regarding the noted incidences of the effects of using substandard seeds:

Table 3.4: Effects of supplied sub-standard seeds

Farmers	Region	Producer/ Distributor	Variety	Effects
Mella Farm	Morogoro	Sygenta (T) Ltd	Maize seeds SY (514)	No yields on 200 acres cultivated
Patrick John Farm	Morogoro	Ultravetis (Hygiene Biotech)	Maize seeds WE 2109	No yields on 12 acres because no re-testing was conducted
80 Farmers from Hai DC	Kilimanjaro	SEEDCO	SC 513	Affected 24 acres and yield dropped by 94 tonnes

Source: TOSCI *inspections reports and farmers' claims*, *July 2013 – June 2018*

From Table 3.4 it is clear that the crop yield loss was from 236 acres incurred by different farmers. Some farmers experienced less yields while others produced zero yield due to use of substandard seeds.

Presence of substandard, unauthorized or not re-tested seed

The audit noted that in the market, there was presence of either substandard seeds, unauthorized or seeds that have not been re-tested, and are still being used by farmers.

Increase of amount of seeds destroyed by TOSCI

The audit noted that there was an increasing trend of seeds destroyed by TOSCI due to failure of germination after conducting laboratory tests.

Table 3.5 provides the trend of the amount of seeds destroyed by TOSCI due to failure to meet required standards for the last three years

Table 3.5: Total amount of seeds destroyed by TOSCI from 2015/16 to 2017/18

Financial Year	Total amount of seeds produced/Imported (Amount in Kg)	Total amount of seeds destroyed by TOSCI (Amount in Kg)	Amount destroyed (%)
2015/16	29,697	43	0.1
2016/17	32,456	98	0.3
2017/18	32,987	156	0.5

Source: *Implementation reports prepared by TOSCI between 2015 up to 2017*

Table 3.5 revealed that there was increase in the amount of seeds destroyed by TOSCI in the last three years.

Further analysis of the above situation indicated two scenarios:

- First, the increasing trend of the amount of seeds destroyed by TOSCI was highly contributed by increasing number of seed dealers who failed to adhere to the quality standards provided by Seeds Regulations of 2007 enforced by TOSCI.

- Second, there was increasing effort by TOSCI to reach a large number of seeds dealers in its periodical inspections.

Furthermore, analysis was made to establish the type of crops that have been highly affected which were Horticulture and Cereal crops (Maize). It was noted that TOSCI through its Northern Zone Office managed to identify seeds sold in the market and destroyed those which failed to germinate after laboratory testing.

Table 3.6 provides the narration of the seeds (crop type) that were destroyed in three regions of Arusha, Kilimanjaro, and Tanga:

Table 3.6: Amount of seeds destroyed by TOSCI across three regions of Northern zone

Company Producing	Type of Crop	Seed Variety	Amount destroyed (In Kgs)
East West	Horticulture	-	10,094
Bytrade	Horticulture	-	35,540
Bytrade	Maize	30G19/P2859/PHB 3253	32,000
Panner	Maize	PAN 67	29,308
		PAN 691	1,800
		PAN 3M-01	420
		PAN 4H-19	15,040
		PAN 4M-21	1,380
TOTAL			**125,582**

***Source**: Implementation reports prepared by TOSCI between 2015/16 up to 2017/18*

From Table 3.6 it is clear that there was an existence of low quality and underperforming seeds in the market. This can be evidenced by the amount of seed destroyed by TOSCI between 2015/16-2017/18.

Presence of unauthorized seed sellers

Further review of samples drawn from inspection reports conducted by TOSCI for the year 2017/18 in Ruvuma, Mbeya and Iringa regions revealed that there was non-compliance in the registration of seed sellers; and presence of unauthorized seed sellers operating in those three regions.

Table 3.7 provides detailed status of the number of seed sellers inspected in 2017/18, number of unauthorized seed sellers and incidences of non-compliance to the quality standards of seeds supplied:

Table 3.7: Unauthorized seed sellers and incidences of non-compliance to the quality standards of seeds in Ruvuma, Iringa and Mbeya 2017/18

Region	Number of seed sellers Inspected by TOSCI	Unregistered/ Unauthorized seed dealers	Incidences of Non-compliances with quality standards of seeds
Ruvuma	54	1	*16 seed sellers-Supplied seeds of varieties UH 6303, UH 615, TZH 538 and HB 513, which were not re-tested. Maximum of 2 years in the market without re-testing.
			*6 Seed sellers supplied unpacked seeds from their packets/containers.
Iringa	25	19	*3 Seed Sellers supplied seeds of Maize CP 201 and Maize SC 719 that have no clear label information outside of the packets including germination percentage.
			2 Seed seller Supplied Maize seeds of varieties H614D, H625, H628 without TOSCI label
			*1 seed sellers-Supplied seeds of maize variety UH 6303 that were not re-tested. Means that seeds stay more than a year in the market
Mbeya	56	52	*2 seed sellers-Supplied maize seeds variety UH 6303 that were not re-tested. That seeds stayed more than a year in the market
			*1 Seed seller supplied substandard maize seeds varieties UH 6303 and UH 615
			*1 Seed seller supplied unauthorized maize seeds from Malawi variety DKC 80-33
			*3 Seed sellers supplied unpacked seeds from their packets/containers

Source: *Sampled Inspection Reports from TOSCI, 2017/18*

From Table 3.7 it is evident that out of 136 seed sellers inspected by TOSCI in Mbeya, Ruvuma and Iringa regions, 72 of them (equivalent to 53%) were unregistered seed sellers. Out of the sampled seed sellers, more than half of them in those three regions were supplying seeds that were not certified by TOSCI.

There have been supplies of substandard seeds, unauthorized and seeds that were not retested by TOSCI in the market. From Table 3.7 above, Mbeya had 93 and Iringa had 76% of Agro dealers who were not officially registered. The presence of unregistered seed sellers created room for non-compliance on seed regulations and therefore, could not adhere to seed quality requirements. In the three analyzed regions, about 19 agro dealers supplied untested seeds. Out of those, 16 agro dealers were from Ruvuma making about 84% of agro dealers supplying seeds without being retested.

It was further noted from the interviews held with TOSCI officials and reviewed inspection reports that the problem of unauthorized seed dealers was mainly caused by inadequate quality control by TOSCI and the compliances behavior of seeds sellers.

Presence of seed sellers who do not follow storing standards

It is important to properly store agricultural seeds so as to conserve its vigor and viability. This is by consideration of environment factors such as right temperature, right amount of moisture, expose to light etc. Proper seed storage helps to reduce the risk of minimizing its geminating capacity. TOSCI is supposed to retest seeds available in the market after every seven months to ensure germination capacity does not decrease below the minimum standards (such as 90% for Maize Seeds) as per the requirement.

The audit further noted that, most of the agro dealers have low knowledge regarding seed storage. In the field visits, it was noted that there are Agro dealers who sell seeds but do not have standard seeds storage rooms.

In the interview held with one of TOSCI officials it was noted that, since seeds are living propagating material they are required to be stored in a standard rooms with proper environment to maintain seed viability. Most of the agro dealers visited in Hai DC, Masasi DC and Mbeya DC, sold seeds without regarding the required storage conditions.

Photo 3.1 showing poor storage of agricultural inputs

Photo 3.1 indicating poor storage of agricultural inputs mainly seeds and fertilizers in Masasi DC. The photo was taken in November, 2018

Reasons for non-compliance with storage standards

The main contributing reasons for not adhering to the standard procedures for storage of agricultural inputs include: inadequate knowledge about storage conditions and seed science. Another observed reason is inadequate number of inspections conducted by TOSCI to ensure that seed storage requirements are met accordingly.

Consequences of not following standard procedures of storage for agricultural inputs include: poor performance of seeds when used by farmers, causing the seed to fail in producing the intended yields.

3.2.2 Untimely Supply of required seeds

It was noted that there is a problem of untimely supply of required seeds to farmers. It was further noted that the problem has recently decreased compared to the previous period when the government was using voucher system.

Before year 2016/2017, the government was using voucher system to distribute seeds to farmers. With this system delays in supplying agricultural inputs was common and was ranging from 3 to 5 months.

Further interviews held with officials from the Ministry of Agriculture revealed that delays in distributing agricultural inputs were common because:

a) the distribution of agricultural inputs relied on vouchers printing; which were untimely printed and that the printing process of the vouchers was carried-out outside the country. Hence, there were

delays in distributing vouchers to farmers to enable timely access to the agricultural inputs;

b) inadequate infrastructures was also a problem because most villages and farmers are located in remote areas and roads to those areas are seasonal. Therefore, it was difficult to reach farmers in remote areas. In such situation, agricultural inputs were not supplied to farmers within prescribed time in those areas.

Situation in the visited LGAs

Reviews of evaluation reports on the agricultural inputs distributed under Voucher system for the period from 2013/14 to 2015/16 in Hai DC, Kalambo DC, Masasi DC and Mbeya DC revealed that agricultural inputs were supplied late.

Table 3.8 shows the date for the commencement of the agricultural season, planned dates for the supply of agricultural inputs and actual date when agricultural inputs were supplied:

Table 3.8: Inputs supplied under voucher system from 2013/14 to 2017/18

LGA	Commencement of Agricultural Season	Planned period for Agricultural inputs Supply	Period when Agricultural Inputs Supplied	Delays in supplying agricultural inputs (Months)
Hai DC	March	February	December	Nil
Mbeya DC	November-December	October-November	December	1
Kalambo DC	August-October	July to September	November-January	3 to 5
Masasi DC	November to December	October to November	March	3

Source: *Voucher Distribution Evaluation Reports from the visited LGAs, interviews held with LGAs officials and Auditors' Analysis (2018)*

From Table 3.8 it is indicate that –agricultural inputs were not timely distributed to the farmers. In Kalambo DC, the extent of delay observed ranged from 3 to 5 months.

Consequences of late supply of agricultural inputs included: (a) farmers use substandard seeds such as local seeds during the agricultural season (b) farmers failed to harvest the expected grain yields because farmers delayed planting while waiting for inputs.

3.2.3 Unaffordable Price of Agricultural Inputs Supplied

a) Subsidies to Seeds was not given fully by the government

The review of agricultural input distribution evaluation reports of 2016/17 from the Ministry of Agriculture showed that there was inadequate implementation of commitment of 30% contribution that was agreed by the government as subsidies to enable farmers to access agricultural inputs both seeds and fertilizers (during planting and for growth).

In the years 2008/09-2015/16, the Government used National Subsidy System to distribute inputs to farmers which included seeds and fertilizers whereby the government had a commitment of paying 50% of the input value. The inputs given approximately cover 1 acre of a farm.

During the year 2016/17 the government decreased its contribution to 30% of inputs value, this required the farmers to pay more for the inputs. Consequently, some of the farmers failed to purchase the needed quantity of inputs hence reduce agricultural Productivity[15].

b) High prices of agricultural inputs

For the agricultural inputs that were available in the markets under regulated prices, farmers paid a total of TZS 200,000/= per acre to access both seeds and fertilizers (during planting and for growth of crops).

Therefore, due to unavailability of market for their agricultural produces it became costly for farmers to apply these agricultural inputs supplied at high prices compared to incomes most farmers accrued from selling their agricultural produce.

For example, in 2018 it required farmers to sell almost six bags of maize to access the inputs packages for one hectare. That was the case for all visited regions.

Based on the national average maize yield from farmers, it is estimated that one acre produces 10 bags of maize and each bag is sold at a price of TZS.30,000/ making an income of TZS.300,000/. The total proximate costs of agricultural inputs are TZS.200,000/, which is about 67% of the farmers total income per hectare.

[15] Government Article on Implementation and monitoring of Subsidies distribution plan of 2016/17,

3.2.4 Inadequately inspections of imported and produced seeds in the country

According to the interviews held with officials from TOSCI, it was pointed-out that TOSCI had insufficiently managed to control quality of seeds imported in the country by ensuring that it complies with the stipulated standards. It was also acknowledged that there was inadequate conduct of inspections to agro-dealers, which resulted into supply of seeds of the low quality.

Therefore, the audit team noted that the inspections that were conducted by TOSCI at points of entry and to the agro-dealers were inadequate, causing presence of substandard and low-quality seeds in the country that were not meeting the required quality. These are elaborated below:

a) **Absence of inspections at entry points by TOSCI**

Seeds Regulations of 2007 stipulate that, consignment of seed imported in the country should be inspected in accordance to the Seeds Act and Regulations made thereto. Also, the legislation requires no seeds to be distributed prior to the outcome of the results of the sample.

It was observed that there was existence of substandard and uncertified seeds in the country which were imported through boarder points. TOSCI explained that many of these seeds were entering the country through Tunduma and Namanga boarders and were mainly imported by SEEDCO and PANNER Companies. The inadequate inspections at the entry points are evidenced by the following factors:

(i) *Non-operation of TOSCI at entry points*. According to the interviews with officials from TOSCI and, field observations made by auditors revealed that currently TOSCI were not operating in all entry points that are known in the country.

(ii) Only a small number of inspection activities were performed to ensure quality seeds are imported through entry points: the audit team noted that currently only Plant Health Section inspectors are operating at entry points focusing on the aspect of ensuring the seeds imported are free from diseases. TOSCI officials should take seed sample, test and analyze the imported seeds in order to confirm their quality conditions especially purity and germination percentages.

One of the main reasons for inadequate inspections mentioned by TOSCI was that they have no inspectors at the entry points. Absence of TOSCI inspectors at entry points imposes high risks of importation of unqualified seeds in the country. PHS and TOSCI officials are required to be at entry

points in order to inspect the agricultural inputs (mainly seeds and plants) imported/exported to ensure that they are free from diseases and are of good quality needed for production.

The audit observed that only PHS inspectors were located at the entry points as indicated in Table 3.9, which shows operationalization at entry points by the Ministry of Agriculture and TOSCI.

Table 3.9: Operationalization in the entry points by institutions

Institution	Entry Points required to operate	Entry Points Operate	Percentage of non-operated entry points (%)
PHS Inspectors	52	32	38
TOSCI Inspectors	52	0	100

***Source**: Auditors' analysis, 2018*

According to Table 3.9 TOSCI officials were not allocated in any entry points but PHS inspectors were available in 62% of known entry points (See appendix 6).

No plans prepared for inspections at the entry points

In reviewing institutions annual plans, it was revealed that there are no plans set for inspection at entry points. Auditors noted that there were no inspections planned either by TOSCI HQ or Zonal Offices. Only PHS officials from the Ministry of Agriculture conduct inspection on assessing diseases on the imported or exported seeds at the entry points.

However, during the field visit at Tunduma and Namanga entry points, it was observed that, there were inadequate inspection activities conducted by PHS as there were limited instruments to facilitate conduct of inspections at the entry point's laboratories. Also in the visited entry points, there was no TOSCI official despite the importation of about 5059 Metric Tonnes (MT) of seeds equal to 15% of 32,987 Metric tonnes of total seeds used for the year 2018.

Unclear guidelines in conducting inspections

According to the Seed Regulations of 2007, TOSCI inspectors are required to issue seed transportation order, seed import and export permits.

It was revealed that there were no standards operating procedures (SOP) established for use at the entry points. As a result, there were delays at some entry points since in some cases require PHS officials to communicate

with TOSCI officials to clear some challenges, which may take long time. This was observed during the visit at Namanga entry point.

TOSCI management explained that, it is not possible for TOSCI to conduct inspections at entry points due to the fact that it takes the minimum of 7 days to test seed germination and purity analysis. The audit team found-out that the argument was contrary to the requirements of Section 22 of Seed Act of 2003 which requires "inspector at a reasonable time to enter any place where he reasonably believes there is any Seed which this Act applies and may open any package found therein".

b) Inadequate inspection conducted to Agro dealer

TOSCI Inspection plans did not include all Agro-dealers in the regions

Through the review of the annual plans and implementation reports from TOSCI for years 2013/14 to 2017/18, it was noted that the plan to conduct inspections was to visit less than half of the agro-dealers annually. The Table 3.10 shows the number of seed sellers visited during the years covered in the audit.

Table 3.10: Total number of planned and inspected seed sellers from 2013/14 to 2017/18

Financial Year	Number of Registered Agro-dealers	Number of Inspected agro-dealers	Inspected agro dealers (%)
2014/15	1,500	105	7
2015/16	2,050	0	0
2016/17	2,500	296	12
2017/18	2,500	296	12

Source: *TOSCI Annual implementation plans and list registered Agro dealers from 2013/14 to 2017/18.*

From Table 3.10, it is clear that large numbers of agro-dealers were not covered during the inspections. On average about 10% of registered agro-dealers were inspected by TOSCI from 2012/15 to 2017/18.

The main reasons for inadequate inspections to agro-dealers include the following:

Inadequate number of inspectors at LGAs and TOSCI

One of the main reasons mentioned by TOSCI was inadequate number of inspectors. In dealing with this challenge, TOSCI explained that they also train and authorize officials at LGA level to be authorized seed inspectors so as to inspect seed issues within their LGAs. TOSCI further explained that, the number of official inspectors is still inadequate compare to the demand.

Table 3.11 indicates the status of number of human resources operating as inspectors.

Table 3.11: Human resource status by Institutions

Entity	Type of Human resource	Required Number of Staff at HQ ,Zonal and LGAs	Number of Staff at HQ, Zonal and LGAs Offices	Percentage Shortage (%)
TOSCI	Research officers, Field Officers, lab attendant	112	52	54
LGAs	Seed inspectors	185	80	57

***Source**: Auditors' Analysis, 2018 and TOSCI Human resource status and staff establishment, 2018*

It is evident from Table 3.11 that in TOSCI HQ, Zonal offices and LGAs level there was a shortage of staff, more than a half of the requirements.

Imbalance ratio between Inspectors and Agro-dealers (TOSCI HQ and Zonal Offices)

It was further noted that there are 2500 registered seeds dealers who are required to be inspected by 53 Seed inspectors in the whole country. This is an average of one inspector to 47 agro-dealers.

Table 3.12: Ratio between Inspectors and Agro-dealers

TOSCI OFFICE	Total Number of Inspectors	Total Number of Agro-dealers	Ration of inspector to agro-dealer
MOROGORO ZONAL (Morogoro, Dar es Salaam, Pwani,)	25	453	1:18
ARUSHA ZONAL (Arusha, Manyara, Tanga, Kilimanjaro)	13	460	1:35
NJOMBE ZONAL (Mbeya, Katavi, Rukwa, Iringa, Njombe, Ruvuma, Songwe)	7	1158	1:165
MWANZA ZONAL (Mwanza, Kagera, Shinyanga, Simiyu, Geita)	6	425	1:71
MTWARA ZONAL (Lindi and Mtwara)	2	320	1:160

Source: *TOSCI Zonal Registered Agro-dealers, 2018, Implementation report 2015-2018.*

From the analysis presented in Table 3.12, there is a huge disparity in the ratio of inspectors to agro- dealers. Morogoro zone has a much better ratio followed by Arusha. Njombe zone, has the worst ratio despite covering an area that is leading in production of cereals in the country. The main reason for uneven distribution of seed inspectors in different zones is due to lack of a strategy in allocating inspectors according to demand.

At LGA level

There are 185 Local Government Authority (LGAs) with 2,500 registered agro dealers but only 80 LGAs out of 185 have seed authorized inspectors. Currently, there are only 80 authorized Seed inspectors out of 185 required in the country. This makes coverage of about 42%.

Lack of inspection tools

According to the interview held with officials from both TOSCI HQ and its Arusha Zone Offices, there were inadequate tools and equipment to facilitate inspection activities. Currently, only TOSCI HQ is accredited and equipped with all required and needed tools. The laboratories in the zonal offices are not accredited and are unequipped with all the needed tools. Table 3.13 indicates the shortage of required inspection tools.

Table 3.13: Shortage of required tools at TOSCI Arusha Zonal Office

S/No	Name of the Tool	Required Tool(s)	Available Tools (s)	Percentage of shortage
1	Seed Divider	4	3	25
2	Purity Board	4	2	50
3	Seed Counter	2	1	50
4	Fume Cup Board	2	1	50
5	Germinator	1	1	0
6	Sample Tray Framers	6	3	50
7	Plastic Containers for sowing seeds	120 Pcs	40 Pcs	67
8	Glass Containers for sowing vegs	40	20 Pcs	50

Source: *Shortage of tools status, Auditors' Analysis 2019*

Table 3.13 above revealed that there was a shortage on a number of needed laboratory tools in TOSCI Zonal of about 50% in 2019. The audit inquired more about the efforts taken by TOSCI to ensure that they acquire vehicles and equipment. It was found that they had identified the shortage of required tools and equipment needed to conduct quality assurance activities in the country. Due to inadequate prioritization given for equipment, the process of fulfilment was not implemented timely.

The audit team noted that each zone had one working vehicle to serve 4 to 5 regions; this was not enough due to the scope of regions.

It was also observed that there is inadequate number of vehicles to facilitate inspection activities in the areas. While TOSCI need 13 vehicles, currently it has 6 vehicles available in Zonal Offices, whereby each zone has at least one vehicle.

Inadequate planning of inspections at LGAs and TOSCI Zonal Offices

From the interview held with TOSCI officials it was revealed that there was inadequate planning of inspection activities at the LGAs as well as TOSCI Zonal offices. That was due to the fact that, only TOSCI prepares plans for inspections to be executed at all levels.

In addition, it was noted that there were no Terms of Reference (TOR) signed between TOSCI and LGAs officials in doing agricultural inspections. Therefore, there is no direct obligation of reporting the inspection activities conducted at LGA level to TOSCI.

Unclear guidelines in conducting inspections to agro-dealers

It was observed that there were no clear Standard Operating Procedures that govern the inspection to agro-dealers. Standard operating procedures are important, because they show step-by-step approvals that act as guidelines for the inspectors in the entire inspection process. The SOP helps in creating precision in inspection activities.

It was further noted that absence of clearly defined guidelines create risks of inability to tress progress of various inspection activities, inability to clearly measure the performance of inspected agro dealers and seed producers, etc.

c) Inadequate field inspection to seed producers

Late applications of field inspections

Seed Regulation 27(1) of 2007 requires seed producers to submit the inspection application form showing each crop and variety grown for certification. The application must be submitted within 30 days after planting so that TOSCI can conduct inspection to assess compliance on seeds production standards such as variety purity and isolation distances.

Through the review of inspection application forms from randomly sampled companies, it was noted that there is a presence of late applications by the companies. The sampled farms were responsible in producing maize, beans

or paddy seeds. From 19 sampled seed producers, there were about 11 late applications, which is equivalent to 58%.

It was also observed that there is no time fixed for the inspectors to inspect the farms which its applications were delayed and some stages passed. ***Appendix 5*** shows the seed producer companies who delayed to submit the application. Late applications lead to untimely inspections of seeds production hence might compromise the quality of the produced seeds.

Inadequate number of field Inspections as per requirements of a particular seed type

According to the review of field requirements for inspection, it states that there should be various inspections to be conducted according to the crop types. *Seeds crops were not inspected at required stages of its production*

Different types of seed were required to be inspected at different stages during its production. Table 3.14 shows requirements for inspections to be conducted based on crop type.

Table 3.14: Required inspections to be conducted in the farms

Seed Type	Number of Inspection(s)	Stages of the Inspection
Maize	3	1. prior to flowering; 2. at flowering; and 3. before harvesting
Paddy	2	1. at flowering; and 2. edible stage
Beans	2	1. at Flowering; and 2. Edible stage

Source: *Inspection requirements and Auditors analysis 2018*.

The audit noted that neither maize nor beans or paddy seeds were inspected according to the required stages of their production. It was also noted that despite that those seeds were not inspected as required, TOSCI approved and certified them to be used by farmers.

Large number of field seed farms was not inspected

The audit noted that 16 out of 19 sampled seed farms did not undergo any sort of inspections from TOSCI as per the requirements. Further analysis and details are provided in Table 3.15.

Table 3.15: Inspections conducted to the sampled farms

Seed type	No. of farms	No. of farms inadequately Inspected	No. of farms not inspected
Beans	4	2	2
Maize	13	10[16]	3
Paddy	2	1	1

Source: *Field Inspection Reports, 2018*

Table 3.15 shows that all sampled paddy and beans seed farms were not inspected by TOSCI according to requirements. The table also shows that almost half of the maize and paddy seed farms were inadequately inspected while the remaining half were not inspected at all.

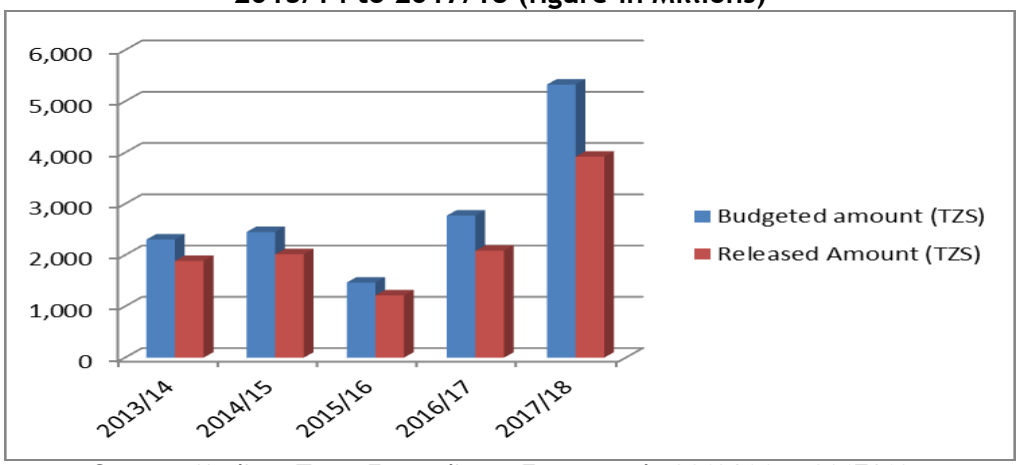
Appendix 5 of this report have more information regarding inspection activities.

d) *Other factors affecting inspections of agricultural inputs conducted by TOSCI*

Limited resources to conduct Inspections

It was observed that there were inadequate releases of fund to cater for inspection activities as evidenced in the Figure 3.1. This contributed to less coverage of inspections.

Figure 3.1: Budgeted and released amount of funds at TOSCI from 2013/14 to 2017/18 (figure in Millions)



Source: *Medium Term Expenditure Framework, 2013/14 to 2017/18*

[16] Farms which were not inspected as required e.g. paddy and beans are supposed to be inspected 2 times while maize is 3 times

Figure 3.1 shows general increases of the amount budgeted and released to TOSCI. However, budgeted funds were not fully released to cater for inspection and other related activities.

Inadequate inspection tools

It was noted that there are inadequate tools to facilitate inspection operations at entry points. The audit noted that offices at the entry point had laboratory rooms but they are not equipped with all needed equipment and tools necessary for conducting different level of tests during the inspections.

This was observed in Tunduma entry point whereby PHS inspectors confirmed that they lacked adequate tools like Plant Pathology analytical equipment such as analytical balance, inspection kit and protective gears, Laboratory testing equipment such as soft X-ray scanner, treatment equipment such as spraying equipment to facilitate in inspection operations.

Reviewed inspection reports of 2015/16, also revealed lack of tools to take samples during inspections.

Further enquiries on the reasons for lack of these tools indicated that there was inadequate prioritization in ensuring that TOSCI budget for the needed tools.

e) ***Limited awareness creation programmes to farmers, Agricultural Officers, Input sellers and Inspectors.***

Limited awareness programs to Inspectors and Input sellers

TOSCI obligations includes provision of trainings to seed producers, inspectors and seed analysts. Review of Medium Term Expenditure Framework (MTEF), revealed that in the audited years 2013/14-2017/18, training to input sellers was conducted only once.

In addition, the audit team observed that although some of the owners of agro-shops had agricultural knowledge, the available sellers in the shops lacked this knowledge. Sellers were unable to provide general information on the application of the fertilizers and seeds supplied to farmers. Table 3.16 shows the summary of the visited agro-shops with the sellers of agricultural background status:

Table3.16: Sellers of agro-shops with Agricultural background status;

LGA	Number of Agro-dealers visited	Shops with sellers without Agriculture background	Percentage of sellers without Agriculture background (%)
Hai DC	5	2	40
Mbeya Rural DC	5	3	60
Kalambo DC	5	4	80
Masasi DC	5	4	80

***Source**: Sellers education background documents and Auditors' Analysis 2018*

The analysis from Table 3.16 shows that up to 80% of the few sampled agro-dealers from the visited LGA's lack good knowledge on agriculture to apply when selling seeds and fertilizers.

Limited awareness programs to Agricultural Officers and Farmers

Through the review of Annual Implementations Reports from the visited Local Government Authorities for the period from 2013/14 to 2017/18 it was found that LGA's conduct limited number of training to farmers and agricultural officers because of availability of fund and technical personnel within LGA.

The reviewed reports also revealed that short -term trainings to agricultural extension officers were planned but not implemented due to:

a) Inadequate implementation of PO-RALG circular of March 2015 that requires the retention of 20% of revenue from agriculture and livestock to be used for sector development including training of agriculture officers and farmers.
b) Existing agricultural officers in LGAs did not conduct regular training in areas of their jurisdiction.

But, it was further observed that there are NGO's, international organization and private companies such as Natural Extract Industries Ltd, World Vegetable Centers, Alliance for Green Revolution in Africa (AGRA), World Bank, Tanzania Agricultural Market Development Trust (TAGMARK), MICO, and BRITAIN which provided trainings to farmers on the application of seeds in the visited LGAs.

Interviews held with agricultural officers from the visited LGAs revealed that some LGAs did not set aside funds specifically for providing trainings to agricultural officers and farmers. It was also observed that, for those LGAs which set aside funds for that purpose, there were inadequate release of

the budgeted amount to cater for trainings to farmers and agricultural officers.

Limited resources to conduct awareness creation programmes to farmers

Low standard agricultural inputs were available in the market. Farmers were supposed to get knowledge on inputs regulatory boards or labels used to identify certified inputs in the market. This awareness creation needs training from LGA's officials. However, LGA's officials were not implementing planned activities to train farmers in various villages. Limited financial resources and lack of agricultural extension officers were reported to be the reasons for inadequate execution of the planned trainings.

Inadequate number of agricultural extension officers to conduct awareness programs

The audit team made an analysis to establish the percentage of agricultural extension officers available in the visited LGAs. Table 3.17 shows the shortage of needed Agricultural Officers to conduct awareness programmes.

Table 3.17: Human resource status at visited LGA level

Name of the visited LGA	Number of Agricultural Officers (Both Village and Ward levels) required	Available Number of Agricultural Officers (Both Village and Ward levels)	shortage of Agricultural officers (%)
Kalambo DC	71	65	8
Mbeya DC	156	105	33
Hai DC	97	57	41
Masasi DC	207	45	78

***Source**: Human resource status, 2018*

Table 3.17 shows a shortage of agricultural extension Officers both at village and ward levels. These were supposed to impart agricultural knowledge to farmers for the visited LGAs covered in by the audit.

Limited financial resources for conducting awareness programs

The audit team made an analysis to establish the amount of funds that were released for agricultural services from the visited LGAs. Table 3.18 shows the percentages released for agricultural activities in the visited LGAs.

Table 3.18: Percentage release of budgeted amount for agricultural activities in the visited LGAs

Name of the LGAs	% release of budgeted amount				
	2013/14	2014/15	2015/16	2016/17	2017/18
Hai DC	4	4	103	4	9
Mbeya rural DC	15	100	14	0	18
Kalambo DC	N/A	57	100	1	20
Masasi DC	57	0	51	36	25

Source: *LGAs Medium Term expenditure Framework, 2013/14 to 2017/18*

Table 3.18 above revealed there were inadequate releases of the budgeted amount in LGAs in some years to cater for training activities in agricultural sector in the respective LGAs.

When the information from Table 3.18 was presented in absolute figures, it was noted that for the year 2017/18, Hai DC budgeted TZS 439 Million for agricultural activities but the actual fund released was TZS 39 Million. Mbeya Rural DC budgeted TZS 50 Million and actual release was TZS 9 Million. Kalambo DC budgeted TZS 265 Million and actual release was TZS 53 Million. Masasi DC budgeted TZS 285 Million but the actual release was TZS 71 Million.

3.4 Presence of Seed sellers who do not meet the required standards of supplying seeds

The audit team noted some agro-dealers in the visited LGAs who did not meet the set requirements for supplying agricultural inputs in the country due to either:

- Unregistered agro-dealers by TOSCI for seeds; or
- Unlicensed agro-dealers by TOSCI for seeds.

3.4.1 Presence of Agro-dealers who do not meet the required standards of seeds supply

(a) Unregistered seed-dealers

Section 15 of Seeds Act of 2003 stipulates that there should be a registration to any seed seller before starting operations. However, the visited LGAs revealed presence of unregistered input sellers who supply inputs to farmers.

During the interview with TOSCI officials, it was noted that, during planting seasons, several numbers of seed sellers emerge to sell seeds to the farmers. Most of seasonal sellers do not follow the operational standards as

required since they are unregistered and unaware of the requirements related to seed selling.

It was also noted that some of the unregistered seed sellers do not have knowledge regarding seeds. Knowledge on what kind of seeds, conducive environment/ ecology, and how to handle the seeds in different type of environment is vital. Consequently, the presence of unregistered seed sellers in the market led to non-compliance of operating standards. Table 3.19 show the list of registered and unregistered agro-dealers observed by TOSCI.

Table 3.19: Unregistered agro-dealers in the market

Year	Total number Registered Agro-Dealers (Seed Sellers)	Unregistered Agro-Dealers (Seed Sellers)	% of unregistered agro-dealers
2015/16	2050	500	24
2016/17	2500	270	11
2017/18	2500	150	6

Source: *TOSCI registration status, 2015 to 2018*

The analysis from Table 3.19 shows that, the percentage of agro-dealers who were not registered decreased by more than half since 2015/2016. The situation was generally improving. However, between 2016/17 and 2017/18, the situation deteriorated because of the removal of registration fee to agro-dealers hence the number of registered agro-dealers increased.

Reasons for presence of unregistered seeds sellers

(i) *Lack of knowledge on the registration*. Some agro-dealers are unaware of the registration requirements and conditions associated with it. Therefore, they just conduct their business without abiding to the registration requirements;

(ii) *Presence of registration costs*. Some of the unregistered agro-dealers avoided to get registered due to the high cost associated with the registration requirements. The audit found that many of the seasonal dealers who do not do seed business throughout the year are not registered. Among the factors that made them to avoid registration is the presence of fees attached with registration process. The unregistered agro-dealers do not see the need of paying the fee while they are not doing the business throughout the year. Currently, registration fee for agro-dealers was eliminated and the number of registration of seed sellers increased from 296 to 1321 from financial year 2015/16 to 2017/18; and

(iii) Insufficient inspections conducted by TOSCI led the agro-dealers to establish their businesses with no considerations to registration requirements.

Consequences of having unregistered agro-dealers

(i) Difficult follow-ups by the regulatory authority. Registration makes it possible for the regulatory authority to know all the necessary details of the agro-dealers. This makes it easy to conduct follow-ups on the recommendations and inspections of their performance; and

(ii) Inadequate planning. Having no registered seeds seller can lead TOSCI to inadequately distribute its resources. The regulatory authority might fail to understand the inspection demand of areas if there is no clear register showing people dealing with seeds in the areas.

(b) Presence of un-renewed seed licenses

The agro dealers require proper license so as to sell agricultural inputs in the areas. The requirement is to renew the license every two years. Statutorily agro-dealers are required to have a license when conducting the business. A license is mainly enforced for not only tax reasons, but also to show that the Government has an interest in regulating businesses that may affect public safety. Having no license, limits the power of the government to conduct close follow-ups to ensure farmers are being supplied with good standard agricultural input.

Table 3.20: Registered seed sellers and unlicensed Agro-dealers

Financial Year	Total Registered Agro-Dealers (Seed Sellers)	Unlicensed Agro-Dealers (Seed Sellers)
2015/16	2050	150
2016/17	2500	70
2017/18	2500	0

Source: Source: *TOSCI registration status, 2015 to 2018*

From Table 3.20, the number of unlicensed agro-dealers has sharply decreased from 150 to 0 from the year 2015/16 to 2017/18. This decrease in number of unlicensed agro-dealers was due to increased awareness among seed sellers involved in seeds business and removal of registration fee.

(c) Presence of unregistered seasonal seed sellers

During the audit seasonal input sellers were found in all visited regions. They normally sell agriculture inputs to farmers especially during the agriculture growing seasons, when the demand for the inputs is very high. Most of these seasonal input sellers are neither registered nor having business license to practice this kind of business. In addition, they do not have sufficient knowledge on how to handle agricultural inputs, and what advice to give to farmers in case of any query.

Therefore, their presence in seed business brings risk of supplying farmers with a low-quality input, which would not lead to the expected yields, hence, causing economic losses to both farmers and the nation at large.

3.5 Demand Forecasting of Agricultural Inputs was not conducted efficiently in the country

The Ministry of Agriculture is responsible for establishing actual demands of agricultural inputs needed in the country in order to establish the effective needs of the agricultural inputs to ensure timely availability of good quality agricultural inputs.

However, it was noted that demand forecasting of Agricultural Inputs was not efficiently conducted in the country. This can be evidenced by the following factors:

Limited sources of data for establishing demand of agricultural inputs

The process of establishing demand for agricultural inputs is supposed to consolidate data from different sources in order to arrive at a figure that will be inclusive of different categories of needs of agricultural inputs. Currently, the most commonly used data is limited to previous year's information on demanded inputs; which do not provide a reliable data for the current year's actual demand since it could be influenced by different changes including additional number of farmers or new investment in agriculture, which may influence and change the figure or amount for demand of agricultural inputs.

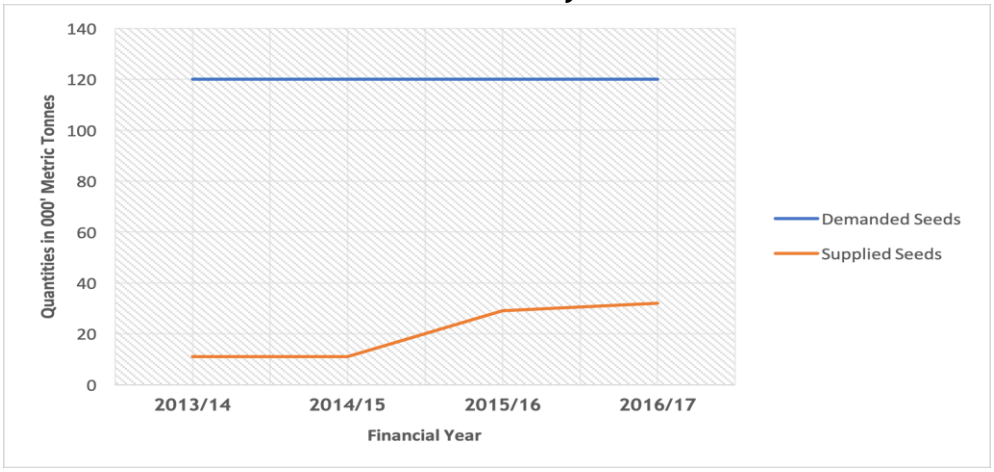
There were no baseline surveys conducted to assess seeds suitability depending on the agro-ecological zones. Currently, seeds are produced or imported by considering the market forces of demand and supply. Officials from the Ministry of Agriculture explained that demand establishment process for seeds was not conducted efficiently all over the country.

The consequences of non-conducting of baseline survey include:

(i) Inability to have precise estimations on the demands of agricultural inputs in the country hence affects the farmers from being supplied with good quality agricultural inputs;
(ii) Failure to understand the actual performances of varieties of agricultural inputs available in the market based on the nature of agro-ecological characteristic of the area;
(iii) inability to properly distribute resources such as human, financial etc., according to the needs and requirements as the result of study indicators; and
(iv) Failure to understand common challenges facing farmers as a result of usage of agricultural inputs, and how to create solutions so as to prevent further damages.

Further analysis revealed there was a clear shortage of agricultural seeds supplied in the country from the visited LGAs hence farmers were unable to access agricultural inputs such as SEEDCO 719 in Kalambo DC for the 2017/18 agricultural season. Figure 3.2 below provide the variations of the amount of seeds demanded and supplied.

Figure 3.2: Comparison between demanded against supplied seeds in the country



Source: *Annual demands and budget speech of the Ministry of Agriculture between 2013/14 to 2017/18 and TOSCI demand and supplied seeds summary, 2019*

Figure 3.2 revealed the estimates for demand of seeds have been constant for the past four years. This was reflected by the fact that there were no actual computations of the demand using any technical methodology but rather the use of the previous year's estimates. The maximum gap is observed in 2013/14 and 2014/15 where the demand was 120,000 metric

tonnes while the supply was 11,000 metric tonnes. The accuracy on estimating demands for seeds has been increasing at a very low margin. The gap decreased at a slow pace until 2016/17 where the supply met only 27 percent of the demand.

3.6 Inadequate mechanism to ensure timely, accessibility of affordable quality agricultural inputs and assurance of credit facilities to farmers

According to National Agricultural Policy of 2013, the Ministry of Agriculture is required to ensure that production, procurement and distribution of agricultural inputs is strengthened to ensure utilization of good quality agricultural inputs. Furthermore, in order for farmers to access quality agricultural inputs, the Ministry of Agriculture through TOSCI, TFRA, ASA and Agricultural Input Trust Fund is required to ensure presence of good quality agricultural inputs on time, at reasonable price and farmers to access loans to procure needed agricultural inputs. Nevertheless, there are some notable challenges towards accessing these agricultural inputs as stipulated below:

3.6.1 Untimely supply of Agricultural Seeds

Delay distribution of certified seeds caused farmers to continue using substandard seeds. In order to catch up with the cropping season, farmers tend to buy any seeds available in the market. Furthermore, the reason for untimely supply of quality seeds was influenced by the following factors;

a) Licensed or approved producers do not meet their seed production commitments

Performance of government owned seed producing companies

According to interviews held with officials from Agricultural Seed Agency (ASA) there is under-utilization of the arable land to produce needed quality seeds hence quantity of supply does not match the demand side. The major reason for underutilization of land mentioned includes inadequate technologies in seed production.

Table 3.21 provides the analysis of the amount of seeds needed in the country per annum, planned production and actual amount of seeds produced by ASA:

Table 3.21: Production capacity of ASA to produce seeds

Financial year	Planned Annual production (30% of demanded quality seeds) (MT)	Actual annual production (MT)	Percentage produced (%age)
2015/16	36,000	600	1.7
2016/17	36,000	800	2.2
2017/18	36,000	800	2.2

Source: *Annual demand established, ASA Strategic Plan and ASA Production Unit between 2013/14 to 2017/18*

From Table 3.21, it is evidenced that ASA produced seeds on average of between 1.7 to 2.2% of their planned annual production. ASA also produced and contributed to an average of 0.5% of total demand established in the country.

Out of the nine[17] farms owned by ASA, only one farm has irrigation system that ensures production of seeds in the country. Other farms depend on seasonal rains, which are unreliable (Table 3.22).

Table 3.22 indicates the size of the arable land and methods used to produce quality seeds by ASA.

Table 3.22: Seed production in the country by ASA

Name and Location of the Farm	Crop Seed Produced	Methods of Producing seeds	Arable land (HA)	Utilized (HA)	Percentage of underutilized land (%)
Dabaga Seed Farm-Iringa	Maize, Sorghum, Sunflowers, Sesame, Cassava, Legume	Depends on Seasonal rains	780	0	100
Mwele Seed Farm-Tanga	Maize, Sunflower, Wheat, Beans	Depends on Seasonal rains	930	50	95
Bugaga Seed Farm-Kigoma	Maize, Sunflower, Wheat, Beans	Depends on Seasonal rains	300	40	87
Msimba Seed Farm-Morogoro	Maize, Sorghum, Sunflowers, Sesame,	Irrigation Scheme	2000	300	85

[17] Msimba, Arusha, Kilangali, Bugaga, Dabaga, Mbozi, Mwele, Tengeru and Njombe site.

Name and Location of the Farm	Crop Seed Produced	Methods of Producing seeds	Arable land (HA)	Utilized (HA)	Percentage of underutilized land (%)
	Cassava, Legume				
Kilangali Seed Farm-Morogoro	Maize, Sorghum, Sunflowers, Sesame, Cassava, Legume	Depends on Seasonal rains	1000	220	78
Arusha Seed Farm-Arusha	Paddy	Depends on Seasonal rains	520	400	23
Tengeru Site-Arusha	Horticultural Crops	Depends on Seasonal rains	11.6	9.2	21
Mbozi Seed-Mbeya	Maize, Sunflower, Wheat, Beans	Depends on Seasonal rains	3000	3000	0
Njombe site-Njombe	Maize, Sunflower, Beans	Depends on Seasonal rains	0.6	0.6	0

Source: *Agriculture Seed Agency Performance report, 2017/18*

Table 3.22 show ASA's farms total arable land and the land used to produce quality seeds in the country. There are farms which were 100 percent utilized for example Njombe and Mbozi farms while Dabaga farm in Iringa did not produce any quality seeds.

The audit observed that the poor performance of ASA farms could have resulted from the following factors:

- Inadequate prioritization of activities required in the farm. It was observed that the farms needed to be equipped with tools and infrastructures such as irrigation systems to facilitate the production process;
- The profits accumulated from seed farms were being sent to ASA headquarters. ASA headquarters make plans and distributes funds to all nine farms from the accumulated profit, and hence, the profit making farms did not progress on seed production; and

- ASA did not initiate conduct of soil tests on the farms to assess the fertility status of the soil that were used for seed productions.

The above three mentioned factors affected ASA during the production of quality seeds and distribution of resources according to the needs and demands.

ASA farm in Arusha was noted to have been among the farms provided with infrastructure materials, such as pipes and drilled bore holes enough to facilitate irrigation systems across the entire farm by the USAID in 1976. This system aimed at ensuring the production of seeds throughout the year. However, up to January 2019 when the Audit team visited the farm the infrastructures were not installed and hence no operational activities. Absence of irrigation system in the farm led to inability of utilization of farm areas fully, example the Arusha seed farm own 520 Ha, but were able to utilize 275 Ha only for the seed produced in 2018.

Photo 3.2: Abandoned Infrastructure at Arusha ASA Farm

Photo 3.2: Some of uninstalled irrigation infrastructure at Arusha ASA farms since 1976 a photo taken by auditors in January 2019.

Performance of private owned seed producing companies

Private owned companies in the country are responsible for producing and/or importing quality seeds. ASA is the only Government seed producer

contributing less than 5% percent of produced seeds in the country, hence more than 95 percent of seed is supplied by private sector.

Interviews held with officials from Tanzania Agricultural Seed Trades Association (TASTA), which represented 44 seed companies revealed that, seed producers in the country are facing various challenges such as inadequate areas of seeds production. Also during importation of the seeds through entry points, officials involved in Customs were not aware of agricultural issues, which cause delays to seed importers.

(b) Insufficient numbers of registered agro dealers in the country

Situation at Regional Level based on villages served

The number of agro-dealers and distributors in the regions were not sufficient to cover all the needs of the farmers in the respective villages. Table 3.23 shows the ratio of agro-dealers in relation to farmers available in the regions and the ratio of distributors to farmers in visited regions namely Kilimanjaro, Mbeya, Rukwa and Kalambo.

Table 3.23: Ratio between agro-dealers to farmers and Distributors to farmers at regional level in 2018

Region	Number of villages	Ratio of agro-dealers to farmers	Ratio of distributors to villages
Kilimanjaro	519	1:20,186	1:173
Mbeya	533	1:3,578	1:44
Rukwa	339	1:9682	1: 339
Mtwara	792	1:41,748	1: 792

***Source**: http://www.tamisemi.go.tz, Number of input dealers and Auditors' analysis of 2018*

From Table 3.23 it was noted that, Mbeya region had the highest ratio whereby one agro-dealer serves about 3,600 and one distributor serves about 44 villages. Mtwara region had the lowest ratio whereby one agro-dealer serves about 42,000 farmers and one distributor serves about 800 villages. This indicates that, there is uneven distribution of agro-dealers and distributors in various regions of Tanzania.

Analysis in terms of geographical coverage served

Based on the geographical coverage, findings show that currently there were few numbers of agro-dealers or distributors in the visited regions. Table 3.24 shows the ratio between agro-dealers or distributors per area.

Table 3.24: Ratio of agro-dealers and Distributors to geographical area in 2018

Region	Total size (land) of Region (in sq. km)	Ratio of agro-dealers to geographical coverage area (in sq. km)	Ratio of distributors to geographical coverage area (in sq. km)
Kilimanjaro	13,209	1:203	1:4,403
Mbeya	35,954	1:86	1:2,996
Rukwa	27,765	1:335	1:27,765
Mtwara	16,720	1:643	1:16,720

***Source**: http://www.tamisemi.go.tz, Number of input dealers and Auditors analysis of 2018*

From the Table 3.24, Mbeya region has highest coverage by agro-dealers and distributors in selling or distributing inputs compared to Mtwara where the agro-dealers cover about 600 square Kilometers and in Rukwa region due to limited number of distributors, they cover about 27,000 square kilometers.

Situation at LGA Level

Analysis in terms of number of villages served: At LGA level, shortage of agro-dealers and Distributors relative to the number of farmers in respective villages was observed. The shortages of agro-dealers as well as distributors are shown in Table 3.25 below:

Table 3.25: The relationship of villages, agro-dealers and distributors at LGAs level

LGA	Number of villages	Ratio of agro-dealers to farmers	Ratio of distributors to farmers
Hai DC	80	1:3,240	N/A
Mbeya DC	152	1:3,678	1:62,535
Kalambo DC	111	1:23,141	N/A
Masasi DC	166	1:7,852	N/A

***Source**: http://www.tamisemi.go.tz, Number of input dealers and Auditors analysis of 2018*

Table 3.25 revealed that one agro-dealer serves about 23,000 farmers in Kalambo DC, which is the lowest ratio compared to Hai DC with the highest ratio. One distributor serving more than 62,000 farmers in Mbeya DC but there was unavailability of distributors in Hai, Kalambo and Masasi DC. In these areas, distributors from neighboring villages were providing services.

Table 3.26: Distance farmers used to access good quality agricultural inputs in the visited LGAs

LGA	Example of Village(s)	Distances to access Inputs Ranges between
Hai DC	Nkwansira	20 km
Mbeya Rural DC	Ikukwa, Simboya, Izira and Inuka	80-100 km
Kalambo DC	Mwambwenkose, Legezamwendo and Mnamba	50-80 km
Masasi DC	Lulindi, Maparawe, Chiwata and Ndanda	20-80 km

Source: *Auditors' Analysis, 2018*

From Table 3.26, it is clear that farmers travel for about 20 to 100 km searching for quality inputs in their respective LGAs. This is due to the fact agro-dealers were not available in some rural (village) areas.

3.6.2 Limited Credit facilities to ensure farmers access loans for agricultural Inputs

The National Agricultural Policy of 2013 requires the Ministry of Agriculture to ensure access of modern inputs by the farmers. In order to ensure availability of credit for agricultural input, Agriculture Trust Fund was established. The Ministry of Agriculture used credit facilities system in 2014/15 to ensure availability of agricultural inputs to farmers.

Review of the Ministry of Agricultural circular on procedures for distributing subsidized agricultural inputs for the year 2014/15 revealed that Financial Institutions were used to provide loans to group of farmers to enable them get agricultural inputs loans.

Farmers were required to form groups and then legally register. The groups were supposed to submit 20% of the intended loan amount to financial institutions as collateral. The Ministry of Agriculture was supposed to provide subsidy to group of farmers at a reduced interest of 4% of the obtained loan.

Interviews held with farmers on the visited villages from Hai DC, Mbeya DC, Kalambo DC and Masasi DC revealed that there was a shortage of financial institutions to offer agricultural loans.

Limited credit at the Agricultural Input Trust Fund

By considering these vital aspects, the Government established the Agricultural Input Trust Fund (AGTF) in 2012 that intends to ensure farmers have access to loans on general agricultural input supply. The audit team observed that AGTF is only operating in central regions (Dodoma) and have

no zonal or regional offices in other parts of the country. Hence, farmers were unaware of services offered by this Fund. As a result, the fund failed to reach the targeted group in the last four years as depicted in Table 3.27:

Table 3.27: Loans Advancement to farmers to purchase Agricultural inputs

Financial Year	Implementation status		Value of the Loans (Million TZS)
	Target Number of Loans	Actual Number of Loans	
2013/14	0	23	851
2014/15	50	21	950
2015/16	40	28	1,355
2016/17	40	23	1,183

Source: *Agricultural Input Trust Fund, loans advancement, 2013/14-2016/17*

From Table 3.27 it is shown that there were under achievement of loans advancement to farmers in the country through Agriculture Input Trust Fund.

Furthermore, according to the interview held with officials from AGTF, it was noted that most of the farmers were unable to meet loan conditions established by the institution, and hence, there was un-attainment of the loans that were targeted to be provided to farmers.

3.7 Monitoring and Evaluation by the Ministry of Agriculture

According to the National Agricultural Policy of 2013, the Ministry of Agriculture is required to supervise the implementation of agricultural services provided by TOSCI and TFRA. Monitoring and Evaluation Unit under the Directorate of Policy and Planning at the Ministry of Agriculture conducts this activity. The following were the weaknesses noted on the Monitoring and Evaluation of Agricultural input.

3.7.1 Inadequate conduct of Monitoring and Evaluation activities in Agriculture Sector by the Ministry

In implementing this obligation, the Ministry of Agriculture is required to conduct quarterly M&E to its institutions such as TOSCI and TFRA. In doing so there are key indicators used to measure performances such as agricultural technologies adoption use of improved crop seeds, use of fertilizer, and number of extension staff in the country.

There were limited Monitoring and Evaluation (M&E) reports on agricultural input activities performed. The review of Monitoring and Evaluation reports from the Ministry of Agriculture revealed that only one monitoring and evaluation was conducted on operational status of Ward Agricultural

Resource Centers (WARCs) in February 2018. There was no Monitoring and Evaluation report on TOSCI and TFRA indicating that there was no M&E activity carried out in the ministry in that period.

Furthermore, the audit noted that between 2013/14 and 2015/16 there were two monitoring and evaluations conducted by the Ministry through its Input Section to evaluate availability, distribution and uses of agricultural inputs distributed under Voucher System. These M&E covered 2 out of 24 regions benefiting from input supply in 2013/14 and 7 out of 24 regions in 2015/16. There was no Monitoring and Evaluation report on measuring the performance of TOSCI and TFRA indicating that there was no M&E activity carried out in the ministry in that period.

Causes of non - monitoring and Evaluation activities by the Ministry

i) Poor prioritization of M&E activities

It is a requirement that TOSCI and TFRA be periodically monitored by the Ministry. Monitoring and evaluation is to be done quarterly (four times a year) by the Ministry. It was noted that there is less priority in monitoring and evaluation of TOSCI and TFRA activities by the Ministry. It is further noted that insufficient budget was allocated to Monitoring and Evaluation section in the Ministry to enable them to perform these activities indicating minimum priority by the Ministry.

ii) Inefficient utilization of data collection tools

It was noted that from 2014 the Ministry used the Agricultural Routine Data System (ARDS) to systematically and timely collect necessary data needed. This reporting system allows communications from lower level to the Ministry, but this system was not utilized effectively to get the needed data accordingly.

Consequently, the Ministry failed to track progress of set goals. This setback resulted in failure to capture challenges associated in achieving the goals faced by TOSCI and TFRA; and failure to collect adequate information that would assist in formulation of agricultural development goals.

3.7.2 Inadequate conduct of Monitoring and Evaluation by TOSCI

a) Lack of Monitoring and Evaluation by TOSCI to its Zonal Offices

TOSCI has four zonal offices in the country. These offices include northern, southern, eastern and lake zonal offices. It was noted that TOSCI do not conduct monitoring and evaluation of the performance of to its zonal offices. Reasons for not conducting M&E include:

i) *Absence of M&E guidelines*; It was observed that there are no monitoring and evaluation guidelines that can be used to monitor the targeted;

ii) *Absence of M&E plans prepared by TOSCI*. It was noted that no monitoring plans prepared by TOSCI to track implementation of the objectives of the zone offices.

Consequences of not conducting Monitoring and Evaluation to the zonal offices include:

(i) delays in achieving agricultural goals and objectives;
(ii) limited room for evaluating zonal offices performances and identify challenges for further improvements;
(iii) delays to solve some problems and hence stay longer period than expected; and
(iv) affects planning of the institutional activities; and therefore, the risk of plans not reflecting the actual needs of the respective zones.

b) Monitoring and Evaluation conducted by TOSCI to Authorized Seed inspectors in LGAs

TOSCI also did not conduct M&E on the LGAs' authorized seed inspectors as there was no terms of reference that define what authorized seed inspectors should perform. LGAs' authorized seed inspectors were trained to assist TOSCI to conduct inspection at their respective LGAs. However, it was noted that there were no reporting mechanism that was established to assess their performance.

There were no M&E plans and guidelines established by TOSCI to assess the performance of LGAs' authorized seed inspectors..

CHAPTER FOUR

AVAILABILITY AND ACCESSIBILITY OF GOOD QUALITY FERTILIZER

4.1 INTRODUCTION

This chapter presents findings on the performance of the Ministry of Agriculture through Tanzania Fertilizers Regulatory Authority (TFRA) on the availability and accessibility of good quality fertilizer as agricultural inputs to farmers in the country.

The findings presented in this chapter address the specific objectives of the audit which was to assess whether supplied fertilizer:

a) are of good quality;
b) meet the demand of farmers; and
c) distributed to farmers as required and timely.

The following are the detailed findings of this audit:

4.2 Insufficient availability and accessibility of good quality fertilizer

The review of inspection reports, complaints files and annual implementation reports from TFRA and according to the interviews held with officials from the Ministry of Agriculture, , PO-RALG, and TFRA it was noted that there is insufficiency availability and accessibility of good quality fertilizer to farmers throughout the country. The following are the identified problems in this area:

d) Supply of low quality of or unsuitable fertilizer to farmers;
e) Untimely supply of required fertilizer; and
f) High price of fertilizer.

These are further detailed below:

4.2.1 Supply of unsuitable fertilizer to farmers

The audit noted that availability and accessibility of good quality fertilizer is still challenging to farmers. Some farmers tend to access unsuitable fertilizer for application to their farms, and hence, reduce yields. The following factors could be main contributors to the problem of supplying unsuitable fertilizer:

Absence of up-to-date soil fertility information

The audit noted that the supplied fertilizers did not consider the type of soil in the regions. This is due to the absence of soil mapping that would show different types of soil fertility in the country. This led to uneven

distribution of fertilizer in terms of number and types of fertilizers needed by the farmers. For example, in visited areas such as Kalambo DC and Hai DC (Nitrable and MOP), the demanded types of fertilizers could not be delivered to targeted farmers leading into low crop productivity.

Presence of agro-dealers who supply repacked fertilizers

Fertilizers mainly contain essential chemical elements needed to improve growth and development of plants. Fertilizer chemical composition determines the need for fertilizers to be stored in specific conditions to preserve the nutrients.

The common requirements for fertilizer storage:

- Fertilizers not to be stored with other type of products such as food-stuff, pesticides and seed varieties,
- fertilizer bags should not be opened and repacked.

The intension of all these requirements is to preserve quality by preserving their chemical composition (nutrients) against volatilization when the bag is left opened for a long time.

During the audit it was noted that there are complaints from the farmers regarding the performance of the fertilizers sold to them. The audit observed that the agro dealers did not observe the storage specifications. Also, during interview with the farmers from all visited districts during the audits, they admitted that there is a repacking of fertilizer bags. The main reason mentioned by the farmers and Agro dealers was unavailability of small fertilizer packs in the market that fit their needs.

During the audit the most available fertilizer bags were packed in 50 kg, which were not afforded by all farmers. This was because many of the farmers especially small-scale farmers do not need the entire bag at once. Also there were limited Supply of lightweight fertilizer bags of 25kg, 10kg and 5kg in the market.

During the Interviews held with officials from TFRA, it was further elaborated that there is low-quality fertilizers in the market because most of the agro-shops did not comply with fertilizer storage requirements and repacking, which reduces the quality of the fertilizer (refer photo 1, showing the opening of Fertilizers bag and repacking into small quantities ready for selling to farmers).

Presence of unregistered and unqualified fertilizer sellers

Unregistered fertilizer sellers

Review of inspections report from TFRA for the year 2018 revealed that, there were agro-dealers who were not registered but still sell and distribute fertilizers to farmers in their LGAs. It was stated that most of the fertilizer sellers were unaware of the procedures to be followed including the need to be registered.

Unqualified fertilizer sellers
During the field visit it was noted that, there is a presence of agro-dealers who supply inputs such as fertilizers, without following the requirements. There were some shops with certificates of registration and licenses, but sellers had no adequate knowledge on fertilizers.

4.2.2 Untimely Supply of required Fertilizer

It was noted that there was a problem of untimely supply of required fertilizer under various systems adopted by the government to distribute fertilizers to farmers.

Adoption of Voucher system

The voucher system was used before year 2016/2017, the government adopted this system and was used to distribute fertilizers to farmers. With this system delays in supplying agricultural inputs was common and was ranging from 3 to 5 months.

Adoption of Bulk Procurement system in 2017

From year 2017 onwards, the government adopted Bulk Procurement system to distribute fertilizers to farmers. The delay was noted to be one month after commencement of the agricultural season. It was also observed that distributors who did not supply fertilizers timely caused delays. Among the reasons mentioned was that it was unprofitable to supply fertilizers based on the indicated prices.

Delay in the procurement of agricultural inputs
It was noted that importation of agricultural inputs was done individually by companies, and ultimately, contributed to delays in supplying fertilizers during the cropping season. These delays are an indication that the procurement system used was not adequately organized. Companies imported the needed agricultural inputs when they are highly demanded

and the procurements was not conducted before the beginning of the seasons when the prices were cheaper.

Nevertheless, the Bulk Procurement adopted by the government encountered some challenges. Fertilizers procured were not reaching farmers in time because agro-dealers found unprofitable to supply agricultural inputs whose prices have been fixed by the regulatory authorities. The fixed prices could not consider the costs of transport in remote areas (villages) where agricultural inputs ought to be supplied.

To address this challenge, the Ministry of Agriculture instructed Regional Secretariats and LGAs through a letter with Reference No. AC. 209/322/01 dated 24th January, 2018 to fix indicative prices in their areas of jurisdictions based on transport cost prevailing in their respective areas.

4.2.3 High price of Fertilizers

According to the Fertilizers Act of 2009, TFRA is responsible for regulating the fertilizer price established in the country. One of the methods used by TFRA to regulate compliance in prices is through inspections conducted to agro-dealers. Inspections to assess compliance of agro-dealers to indicative prices should be conducted regularly during on-set of cropping seasons to ensure that farmers get fertilizers at the right time and price.

The review of annual plans and Implementation Reports of TFRA from 2013/14 to 2017/18 noted that inspections conducted regularly by TFRA do not cover all agro-dealers. Hence, it was observed that there were incidences of non-compliances on the part of the uninspected agro dealers in terms of prices established by TFRA.

TFRA inspections reports of 2017/18 showed that there are some agro-dealers who supply fertilizers beyond the indicative ceiling prices in Morogoro, Iringa, Mbeya, Rukwa and Ruvuma regions (Table 4.1).

Table 4.1: Price variations against the Indicated Prices in November 2017

Region	Fertilizer Varieties	Indicated Price (in TZS)	Agro-dealers Price (in TZS)	Price Variation (in TZS)	Variation (%) (%)
Morogoro	UREA	37,579	50,000	12,421	33
Iringa	DAP	51,808	62,000	10,192	20
Mbeya	DAP	53,640	56,000	2,360	4
Rukwa	DAP	56,808	62,000	5,192	9
Ruvuma	DAP	54,272	70,000	15,728	29

Source: *TFRA Inspection reports, November 2017*

Agro-dealers tend to increase price of fertilizers above the approved ceiling. This situation forces farmers to acquire fertilizers at a cost that is 33% higher than the indicative Prices.

4.3 Inadequate Mechanism to ensure quality fertilizer is supplied to farmers

4.3.1 Inadequate inspections of imported or locally produced fertilizers

According to the interviews held with officials from TFRA, it was pointed-out that TFRA managed to control quality of fertilizers imported in the country by ensuring that it complied with the stipulated standards. However, it was acknowledged that only a few inspections are carried out to agro-dealers. This shortcoming has provided the loophole for the supply of low quality fertilizer.

TFRA are required to conduct quarterly inspections to agro-dealers and at ports of entry to ensure good quality fertilizer is supplied to farmers. Therefore, the audit team noted that the inspections conducted by TFRA at points of entry and to agro-dealers were inadequate. The following are the main reasons for the presence of low-quality fertilizers:

4.3.2 Inadequate inspection conducted by TFRA at entry points

Interviews with officials from TFRA explained that there is a limited number of inspectors to carry out Inspection activities promptly in the country. TFRA did not have officials at entry points to deal with quality assurance of the imported fertilizers. Currently, there is an increased use of foliar fertilizer in the country as supplements of plant nutrients. These supplements are imported through entry points unnoticed by TFRA and sold in different agro-shops in the country.

TFRA officials should be available at entry/importing points in order to assess if fertilizers imported/exported are of required quality. Almost 90% of the Fertilizers used in the country is imported through Dar es Salaam Port. However, there are some operational challenges at Dar es Salaam Port including lack of laboratory at TFRA to conduct timely fertilizer analysis. TFRA tend to use TPRI, Sokoine University of Agriculture (SUA), MLINGANO Agricultural Research Institute and Tanzania Bureau of Standards (TBS) laboratories. The process of analysis tend to take a long time. Tools that were lacking are soil test kits that include those used to assess loss of nutrients on the imported fertilizer.

It was also noted that there were few fertilizers inspectors from TFRA at the Ports, many being assigned at Dar es salaam Port, and sometimes they are assigned other duties outside Dar es Salaam and thereby diminishing the available number even further.

Lack of inspectors at entry points

There are about 52 entry points in the country, and at least one staff from either TFRA or Ministry of Agriculture was supposed to be placed at each entry point. According to the interviews with officials from TFRA it was revealed that currently, they are operating at Dar es Salaam port only. Dar es Salaam port receives more than 90% of the fertilizers used in the country. The remaining 51 entry points do not have staff to inspect the remaining 10% of fertilizer entering the country.

Inadequate inspection conducted by TFRA to Agro-dealers

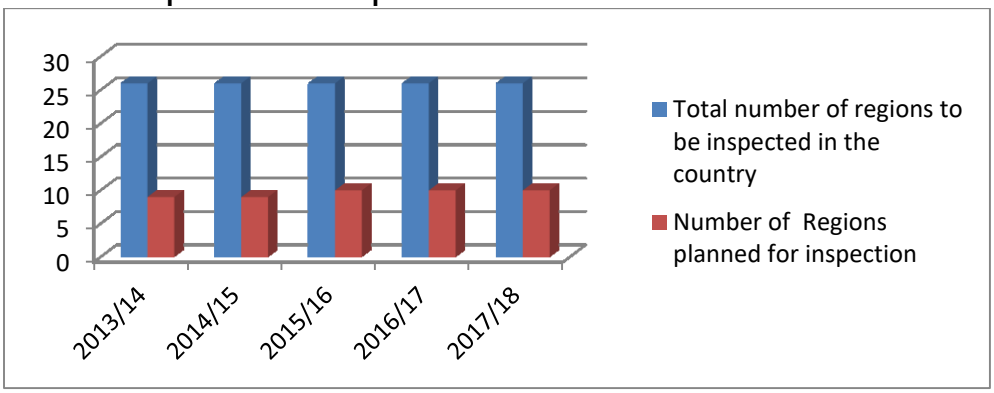
There was inadequate inspection conducted to fertilizer sellers in the country. This was due to limited coverage of inspections activities. Also, not all planned inspections in the regions were conducted.

Not all regions were covered for inspection activities

According to the review of annual operation from TFRA, it did not plan to inspect all fertilizer sellers available in all regions of Tanzania mainland. The reason given for inadequate inspection conducted was due to limited resources to cater for inspection activities in the country.

Also, according to the interviews held with officials from TFRA, TFRA has plans to establish zonal offices, but still there are no staff to ensure operationalization of the established zonal offices. Figure 4.1 provides regions that TFRA were supposed to inspect, and the regions that TFRA planned to inspect for the period covered by the audit.

Figure 4.1: Total regions that should be covered by TFRA and regions planned for Inspection from 2013/14 to 2017/18



Source: Action plan reports from July 2013 to June 2018

From Figure 4.1, it is evident that TFRA was unable to plan inspections to cover even half of the regions that were supposed to be inspected. The number of regions planned for inspection by TFRA slightly increased with time between 2014/15 to 2015/16.

Not all planned regions were inspected

According to the review of annual implementation reports from TFRA, it was revealed that not all regions planned for inspection were actually covered for inspection. Insufficient fund was reported to be the main reason for such limited number of inspections. For example, from the financial year 2013/14 to 2017/18, the amount budgeted for inspection of fertilizers at entry points and agro-dealers was TZS 426 Million but only TZS 295 Million was released accounting for about 68% of the budget.

Interviews conducted with TRFA indicated that insufficient funds to facilitate inspections resulted into few regions visited for inspection. Also, in other instances it was noted that failure to utilize the released amount of funds for inspection resulted into failure to ensure quality and coverage of inspections to all fertilizer sellers in all required regions. As a result, even the few regions planned could not be covered as indicated in Table 4.2:

Table 4.2: Percentage of covered regions per planned

Financial Year	Number of regions planned to be inspected	Actual number of Regions inspected	% Coverage
2013/14	9	6	67
2014/15	9	7	78
2015/16	10	7	70
2016/17	10	8	80
2017/18	10	8	80

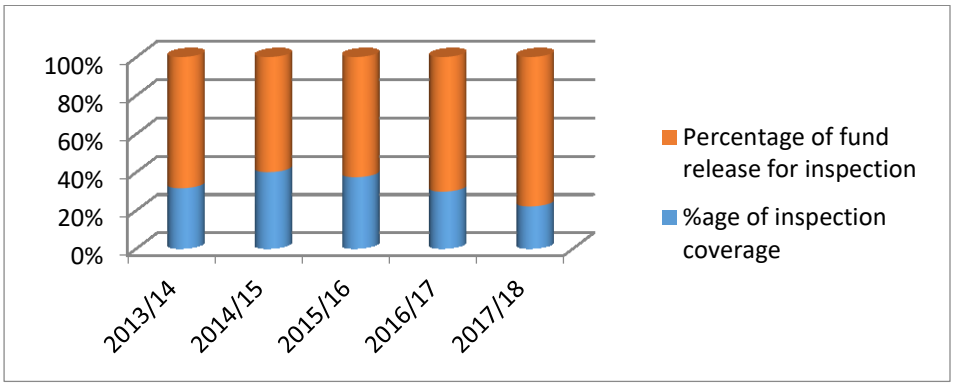
Source: Action plan and Implementation reports from July 2013 to June 2018

Table 4.2 shows that TFRA did not manage to visit the few planned regions to conduct inspection activities. TFRA managed to cover only 80% of the few regions that were supposed to be inspected. Furthermore, the trend shows that, the number of regions covered increased over time although it fell short of the target.

4.3.3 *Budgeted fund for inspection spent for other none inspection activities*

The analysis of the amount of funds received and the percentage of inspection covered from the budget and performance reports indicated that despite the release of 61% of funds, TFRA conducted only 21% of required inspections. The remaining 40% of the released fund was used for purposes other than inspections (Figure 4.2).

Figure 4.2: Amount released and the Percent of inspection



Source: TRFA Budget and Performance reports from July 2013 to June 2018

Figure 4.2 indicates that for the last 5 financial years the funds released was below the approved budget, and also, the inspection coverage was still low. The situation of inadequate inspection coverage has been deteriorating

since the percentage of inspection coverage compared to the released budget is decreasing.

Non-compliance to selling requirements of fertilizers

Inadequate inspections conducted have resulted into non-compliance to selling requirements by the agro-dealers as observed in Hai DC, Kilimanjaro. It was observed that there were opening bags of fertilizer and selling of fertilizers in small quantities as needed by farmers. Currently, the normal fertilizers packages are either 25 or 50 kg bags. But most farmers buy fertilizer in smaller quantities than the normal bags. The opening of bags is contrary to the Fertilizer Regulation 32(4) of 2011, which requires fertilizers be supplied in packages of 5 kg,10 kg, 25 kg and 50 kg.

Photo 4.1: showing the opening of fertilizer bag, Ammonium Sulphate, so that customers can purchase it at smaller quantities as per their demands

Photo 4.1: Showing the opening of fertilizers and repackaging it into small quantities ready for selling to farmers (Photo was taken by Auditor at Hai DC, September 2018).

It was further noted that the opened fertilizer tends to lose its quality due to volatilization of some chemical nutrient elements such as nitrogen and Sulphur composition and hence, loss of these nutrients. Farmers want to buy fertilizers packaged in bags of small quantities of 5 and 10 kg. This

demand for purchasing small packages with smaller quantities very often tempts the fertilizer sellers to open sealed bags and repack, and therefore contribute to the reduction of the quality of fertilizers. Application of such fertilizers could not produce the intended results.

Furthermore, inadequate inspection to agro-dealers affected farmers who purchased and applied fertilizers from sellers who did not comply with the established indicative prices. Such Fertilizers were sold at a high price compared to the ones with indicative prices.

4.3.4 Limited financial resources to conduct inspections of fertilizers conducted by TFRA

According to interview held with officials from TFRA officials, it was found that financial constraint was one of reasons for inadequate inspection. It was noted that there was inadequate release of funds to cater for inspection activities in the country. This causes TFRA to sample only few regions to be visited during the inspection activities. Table 4.3 shows the disbursement of funds during the audited years.

Table 4.3: Funds disbursed for inspections at TFRA from July 2013 to June 2018

Year	Budgeted amount for inspection (Million TZS)	Actual Amount for inspection (Million TZS)	Released fund (%age)
2013/14	82.5	42.5	52
2014/15	58.3	24.2	42
2015/16	62.8	29.8	47
2016/17	76.8	50.8	66
2017/18	148.7	147.2	99

***Source**: TFRA MTEF between July 2013 to June 2018 and Auditors' Analysis 2018*

The analysis from **Table 4.3** shows that the funds disbursed to TFRA averaged at 61% of the requested funds. In the year 2017/18, TFRA received 99% of its requested funds, but covered only 28% of the required inspection. One of the main factors that contributed to the improved funding was the decision of the government to allow TFRA to charge inspection fee to companies importing fertilizers and retain certain percentage for daily operations. Despite increasing funding for inspection activities, the inspection coverage was still very low. Thus, the stated financial constraints as reasons for not inspecting all required regions could not suffice as highlighted in the analysis in Table 4.3.

4.4 Presence of fertilizer sellers who do not meet the required standards for supplying fertilizers

The audit team noted that, some agro-dealers in the visited LGAs do not meet the requirements for supplying fertilizers in the country. The reasons observed were either:

- Unregistered agro-dealers; or
- Unlicensed agro-dealers for fertilizers supply.

The process of registration/certification for agro-dealers is done in order to ensure a supply of good quality agricultural inputs in the country. From 2013/14 to 2016/17 registration activities were conducted by the Ministry of Agriculture, and the process was associated with costs amounting to TZS 100,000. But after the review of Fertilizer Regulations in 2017, these costs for registration were removed.

(a) *Unregistered fertilizer dealers*

During the review of Inspection reports conducted in March2018 by TFRA, it was observed that there were unregistered agro-dealers who supply fertilizers. Despite removing the registration costs by the Government in order to encourage every agro-dealer to comply with registration and operation procedures, some of them were still not registered and continue to sell fertilizers.

On the visited LGAs the audit team observed the presence of unregistered agro-dealers who supply fertilizers. Table 4.4 indicates a summary of registration status of sampled agro-dealers from the visited LGAs during the audit:

Table 4.4: Registration status of visited fertilizer selling agro-dealers in the country

LGA	Number of Agro-dealers visited	Unregistered Agro-dealers	Percentage of Unregistered Agro-dealers (%)
Hai DC	5	3	60
Kalambo DC	5	3	60
Mbeya Rural DC	5	3	60
Masasi DC	5	4	80

***Source**: Registration documents and Auditors' Analysis (2018)*

Table 4.4 indicates that over 50% of the fertilizer selling agro dealers in the country are not registered by TFRA for fertilizers.

Reasons for unregistered fertilizer agro-dealers

(i) *Lack of clear understanding of registration process*. From the interviews held with some of the unregistered agro-dealers at 4 visited LGAs, it was revealed that they were not aware of the procedures used for registration.

(ii) I*nadequate inspections conducted to agro-dealers*. TFRA do not adequately conduct inspections to agro dealers especially in remote areas. The audit team noted that many of un-registered agro-dealers were located in remote areas, and hence, it was not easy for regulatory bodies to reach them easily. According to Annual Implementation reports of 2013/14-2017/18, TFRA was not able to reach the inspection goals. It was able to inspect an average of 30% of the regions every year.

Consequences of having unregistered agro-dealers in fertilizer

(i) *Risk of supplying below standard fertilizers to farmers*
One of the requirements for agro-dealer to be registered is to have knowledge on agricultural inputs. Many of the unregistered agro dealers lack knowledge to store and adhere to requirements for selling fertilizer in unopened sealed bags. Therefore lack of knowledge greatly contributed to the inability to provide appropriate advice about fertilizers to farmers.

(ii) *Weak inspection planning of agro-dealers*
Registration is important because it enables regular inspections by regulatory bodies to be efficient and hence, ensures supply of quality inputs. From the interviews held with TFRA officials, it was observed that inspection of agro-dealer were conducted quarterly. In order to conduct proper inspections, there is a need to have a well-established list (register) of agro-dealers. Absence of registered Agro-dealers led to inadequate planning and risk analysis of inspection activities by regulatory authority.

(b) Presence of seasonal input-sellers

According to officials from TFRA, it was noted that there were agro-dealers who supply fertilizers only at times when fertilizer is highly demanded by farmers in the cropping seasons. Presence of seasonal fertilizer sellers was highly influenced by inadequate inspections conducted by TFRA to ensure compliance to general requirements and specifically the supply good quality fertilizers. It was noted that most seasonal agro-dealers do not comply with the standard requirements of fertilizer. This is because many of these sellers lack knowledge and training regarding agricultural inputs.

The review of inspection reports of July 2017 conducted by TFRA, which covered Kigoma, Katavi, Rukwa and Ruvuma regions indicated that there was a presence of seasonal sellers of fertilizers in the regions. Table 4.5 shows the extent of presence of agro dealers in the country.

Also the review of inspection report of TFRA for the year 2014/15 whereby 63 agro-shops and stores were inspected revealed that in Mbeya region for example, there were unregistered and seasonal sellers who did not comply with storing requirement. There were also agro-dealers who open sealed fertilizer bags.

Table 4.5: Non-compliance of fertilizer business operations among sixty-three agro-dealers and stores inspected

Condition	Number of non-compliance	Percentage of noncompliance out of 63 inspected Agro-dealers (%)
Unregistered Agro-dealers	23	37
Seasonal fertilizer sellers	20	32
Opening of fertilizer bags	6	10
Inadequate storage	6	10

Source: *TFRA Inspection reports on Mbeya region, 2014/15*

From the Table 4.5 above it was noted that there was a high number of unregistered fertilizer dealers as well as seasonal agro-dealers in Mbeya DC. Also, there were non-compliance of storage requirement and opening of sealed fertilizer bags. The main reason for presence of on-seasonal agro-dealers in fertilizer business was the absence of registered agro-dealers in respective villages.

According to the interviews held with farmers from Hai District, it was noted that there were very few agro dealers in the area. This shortage of agro-dealers led to a number of people with ordinary shops to sell fertilizers and other agricultural inputs during agricultural seasons due to high demand of agricultural inputs by the farmers.

Consequences of having unregistered on-seasonal agro-dealers in fertilizer

Consequently, seasonal fertilizer dealers might supply agricultural inputs without observing the quality procedures due to lack of knowledge and clear understanding of the standard operating procedures. Hence, there is a potential risk of farmers being supplied with low standards fertilizers by seasonal agro dealers.

It was also observed in Mbeya DC that agro-dealers store fertilizers in an exposed environment (exposed to the sun), which is against the standards of storing fertilizers, as indicated in Photo 4.2 below.

Photo 4.2: Fertilizers exposed to the sun

Source: *Auditors' observations in Mbeya DC*

4.5 Demand Forecasting of fertilizers not conducted efficiently

The process of establishing demand for fertilizers is not conducted effectively so as to ensure the availability of the actual needs of the farmers. The process is accompanied by weaknesses in gathering data to be used in forecasting the demand, the actual process of computing forecasted demands which is conducted by a limited number of actors to come up with aggregate figures and consequently the final results shows discrepancies between the fertilizers demanded and available/supplied.

4.5.1 Limited sources of data for establishing demand of agricultural inputs

The process of establishing demand for agricultural inputs is supposed to consolidate data from different sources, in order to arrive at a figure that will be inclusive of different categories of needs of the agricultural inputs. Currently, the most commonly used data is limited to last year's information on demanded inputs which do not provide a reliable data for the current year's actual demand. The actual demand could also be influenced by different factors such as including additional number of farmers or new investment in agriculture which may in turn influence and change the final figure or amount for demand of agricultural inputs.

On the other hand, there were no baseline surveys conducted to determine demand based on the geographical characteristics of agricultural zones. It was indicated that as of year 2018, the Ministry of Agriculture did not conduct baseline survey to understand the total demand of agricultural inputs by farmers according to ecological zones and number of farmers. The survey helps to establish demand of the agricultural inputs in the country. However, it was observed that the Ministry of Agriculture only came-up with hypothetical demand figure which is used to estimate the farmers' demands for agricultural inputs.

The ministry stated further that conducting baseline surveys is expensive in terms of time and costs as it must involve all key stakeholders from farmers, village, ward, district, regional levels and thereafter their total annual requirements have to be compiled nationally.

Through bulk procurement system, TFRA was required to establish the annual demand in order to procure the needed fertilizer in the country. However, the fertilizer distributed in the country did not consider the soil fertility status of the geographical area hence did not address different and specific demands for different parts of the country.

4.5.2 Inadequate Demand Estimation process for fertilizers

In order to arrive at a reliable figure or amount for the demanded agricultural inputs in the country, there should be a proper methodology for estimating the demand of agricultural inputs. Currently, the Ministry of Agriculture through TFRA do not have a proper methodology to estimate the demand for agricultural inputs.

There is no model, software or other more accurate methodology that is used in estimating the figures for foresting. There was no formal system that was used by the Ministry of Agriculture to analyze information related to demands collected in the country.

The Ministry of Agriculture is currently planning to use formal system namely, *Input information system* to establish the demand in the country. This database system would show the demanded and used inputs all over the country.

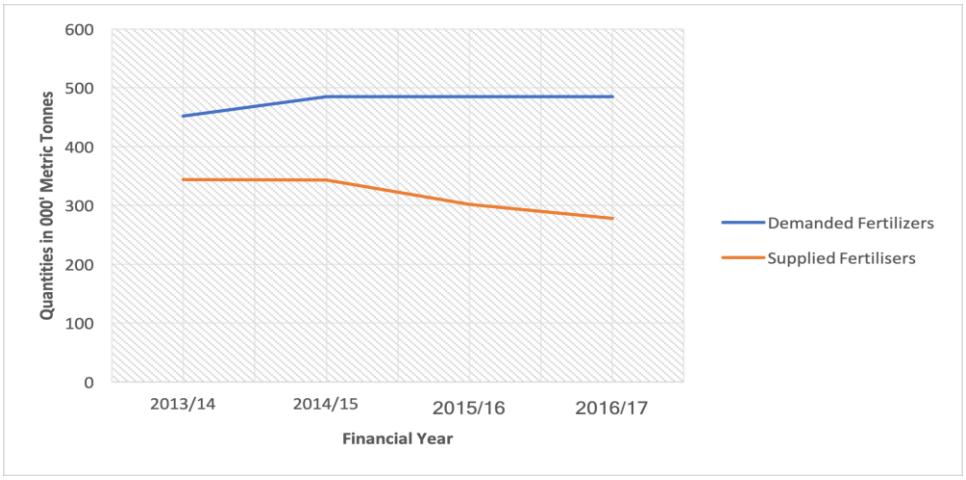
There were inadequate involvements of farmers and agricultural extension officers during the process of establishing actual demand hence demands established did not identify varieties of agricultural inputs either of seeds or fertilizers suited for their agro-ecological zones. From the visited LGAs[18],

[18] Hai DC, Mbeya DC, Kalambo DC and Masasi DC.

it was noted that information about annual demands was not reliably determined due to unavailability of extension officers.

Consequently, there was a clear shortage of agricultural inputs supplied in the country from the visited LGAs resulting in farmers being unable to access agricultural inputs. It was also noted that the supply of available fertilizer in the market did not suffice the actual demand of the inputs. Figures below shows the analysis of the variation of the amount of fertilizer demanded and supplied.

Figure 4.3: Comparison between demanded against supplied fertilizers in the country



Source: *Annual demands and budget speech of the Ministry of Agriculture between 2013/14 to 2017/18*

Figure 4.3 above shows that there is significant variation between the amount of fertilizer demanded and the amount supplied with a gap increasing in recent years. For instance, the accuracy for estimating demand for fertilizers has been declining since 2013/14 with a current supply in 2016/17 standing at 278 metric tonnes while the demand was 485 metric tonnes, which meant that only 57% of the actual demand for fertilizers was met.

4.6 Reporting of the Demand forecasted does not ensure timely availability of agricultural inputs

Actual submission of demands should be submitted to the Ministry six month prior to the commencement of agricultural activities. The submission is to be done at the end of June each year. Nevertheless, it was observed that due to variation in terms of the commencement of agricultural season, this period is not realistic to some of regions.

Hence, TFRA's officials pointed out that some LGAs failed to establish their demand on time, therefore, information from those LGAs was not considered in the demand establishment and therefore, caused insufficient supply of fertilizers to other areas. For example, Manyara region delayed submission of annual demand, resulting in denying the involvement of all key stakeholders in the demand forecasting process.

It was also noted that there was limited involvement of all actors in establishing demands. Demand should be established from the low level to include farmers' information in the reports prepared by the agriculture extension officers up to the ministerial level. However, during interviews held with farmers it was observed that, farmers were not involved in the process of compiling figures for fertilizers demand. The agriculture extension officers use personal experience to estimate fertilizer demands.

4.7 Ineffective coordination mechanism in demand establishment

It was noted that there was ineffective coordination mechanism between LGAs, PO-RALG and the Ministry in collecting the fertilizer demands. There is no clear mechanism established to ensure that the Ministry received demands timely.

Through analysis made by auditors, it was revealed that the timing used to submit demands was not sufficient to ensure procurement and distribution of agricultural inputs before commencement of agricultural seasons. This is because the procurement procedures tend to take 5 to 8 months.

Table 4.6: Untimely reporting of the demand forecasted results each year

LGA	Time of Demand submission	Commencement of Agricultural season	Number of months used to procure and distribute agricultural inputs
Hai DC	End of June	March	8
Mbeya Rural DC	End of June	November-December	5-6
Masasi DC	End of June	November to December	5-6
Kalambo DC	End of June	August-October	2-4

Source: *Auditors' Analysis, December 2018*

From Table 4.6 it can be seen that there is no exact number of months indicated for procurement and distribution of agricultural inputs. Procurement process takes about 5-8 months. This could cause delays to the farmers.

Even Bulk procurement system does not favor timely availability of fertilizers; its procurement process tends to take up to 3 months just to carry out assessment of qualified importers. Standard requirement for importation of fertilizer is 45[19] days, but it was noted that this requirement is not attained. There is on average a delay of up to 30 days in receiving the imported fertilizers by TFRA and on occasions it took 75 days to import fertilizers in the country, contrary to the agreed 45 days. The delays in importing fertilizer in the country ultimately cause delays in delivery and distribution of fertilizer in the market.

The reasons for late reporting of demand forecast include: delay in reporting farmers' needs from different villages to regional levels. The consequences of these delays include:

a) farmers not getting the right quantities of required inputs
b) late delivery of fertilizer compared to the actual agriculture season when the fertilizer is exactly needed; and
c) economic loss to the farmers and the nation at large, because farmers are at risk of not getting the desired harvest.

4.8 *Untimely supply of Fertilizers to farmers*

The audit team noted that fertilizers were not supplied to farmers timely. This is evidenced by the facts presented on Section 4.7 above.

Factors contributing to untimely supply of agricultural inputs to farmers

The following are the factors that contributed to the delays in supplying agricultural inputs to farmers in the country:

a) Poor infrastructure

Many of the roads in the LGAs and village are seasonal roads. These roads are mostly inaccessible during the rainy season, which is the season when farming for most parts of the country takes place. This poor road infrastructure contributed to the needed fertilizers not reaching the farmers on time.

Poor road infrastructure also contributes to the increase of cost of fertilizers used by the farmers. Agro-dealers failed to supply fertilizers in villages

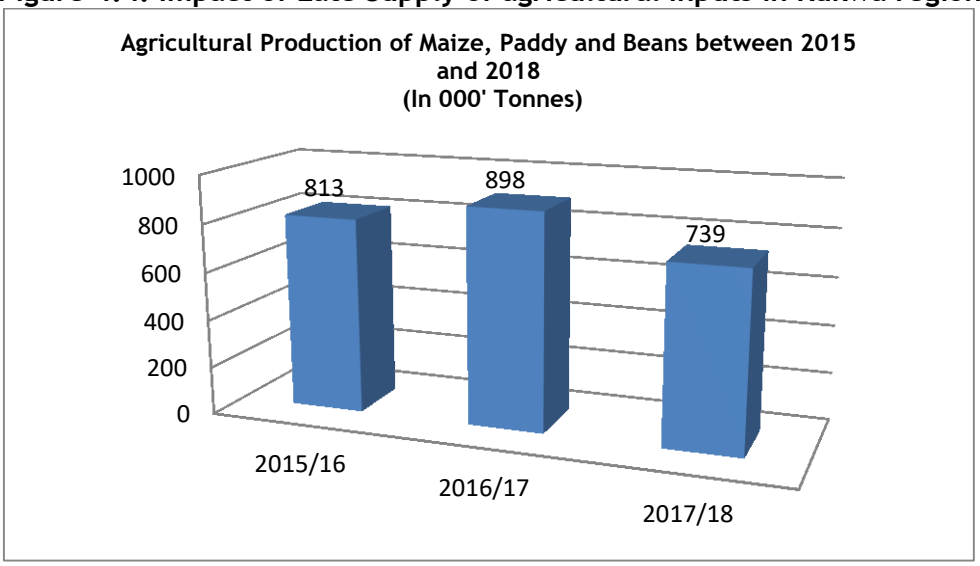
[19] The maximum number of days given for the awarded importer to import fertilizers in the country

because the costs of transportation to reach remote areas were higher and selling of fertilizers was unprofitable. On average it costs about TZS 6,000/= to 10,000/= to transport a 50kg bag of fertilizers up to the village, which adds up to the total cost of the fertilizer.

According to the interviews held with Agricultural Officers from Rukwa region they explained that seasonal roads in Kalambo DC restricted supply of fertilizers to some of the villages in the district. During the rainy season, road infrastructures become inaccessible hence limit movements between villages and, from the headquarters of LGAs and villages. Examples of these villages that were not reached during rainy season in Kalambo DC are Kachele, Mwaya, Nondo and Sangakalonje.

It was noted that, apart from factors that might cause decline in production such as weather, pests and diseases, timing of supply of the needed fertilizers was critical. In 2017/18 season, agricultural inputs for three crops maize, paddy and beans dropped by 18% compared to the year 2016/17 as shown in the Figure 4.4 below. In Rukwa the annual Agricultural season for maize always starts on August to November but fertilizers were not available up to early January 2018 due to heavy rains which caused roads to be impassable.

Figure 4.4: Impact of Late Supply of agricultural Inputs in Rukwa region



Source: *Crops Production Reports 2015-2018 and Auditors' analysis, 2018*

From the figure 4.4 above it indicates that in the year 2017/18 the production of Maize, Paddy and Beans in Kalambo DC dropped by 18% as opposed to previous year.

(c) Insufficient numbers of agro dealers in the country

According to the review registration status of TFRA by September 2018 revealed that there is inadequate number of available registered agro-dealers, distributors, importers and manufacturers of fertilizers in the country to ensure timely and availability of the needed fertilizers.

In the visited regions it was observed that there was lack of agro dealers who are vital for ensuring that farmers have good access to agricultural inputs. Some LGAs showed that there was a shortage of agro-dealers and distributors in relation to area that they provide services. The following table shows the ratio between agro-dealers and distributors in relation to the geographical area they provide services.

Table 4.7: Ratio of Agro-dealers and Distributors to geographical areas

LGA	Total size (land) of LGA (sq. km)	Ratio of agro-dealers to geographical coverage area (sq. km)	Ratio of distributors to geographical coverage area (sq. km)
Hai DC	1,011	1:67	N/A
Mbeya Rural	2,432	1:143	1:2,432
Kalambo DC	4715	1:37	N/A
Masasi DC	4,429.2	1:403	N/A

***Source**: http://www.tamisemi.go.tz, Number of input dealers and Auditors analysis of 2018*

From Table 4.7, it was noted that in Masasi DC agro-dealers were scattered in distances compared to Kalambo DC and in Mbeya DC. One distributor covers more than 2,000 sq. Km. There were no distributors in Hai DC, Kalambo DC and Masasi DC despite of having geographical areas covering 1,011, 4715 and 4,429 sq km, respectively.

Reasons for the shortage of agro-dealers and distributors are:

i) *Based on the agro-ecological zones*

There were five agro -ecological zones in the country that produce varieties of cereal crops, roots and tuber, pulses, oil and seeds, fruits and vegetables, fiber crops and permanent crops. Nature of these crops produced also attracts agriculture inputs dealers and distributors to operate. For example regions which produce more cereal crops such as maize and paddy, attracts more agro-dealers compared to regions that have limited production of cereal crops. This is because agro-dealers tend to choose their operations to the agricultural zones, which produce crops that use both seeds and fertilizers.

ii) Usage of quality agricultural inputs by the farmers

Agro-dealers operate in areas where farmers use more improved seeds and fertilizers compared to areas where they use less. For example in Southern Highland regions namely Mbeya, Iringa, Njombe and nearby regions, farmers use more than 50% of the fertilizers imported in the country. Hence, such areas attracts many agro-dealers and distributors compared to the regions where farmers use less improved seeds or fertilizers since there is limited market for those agricultural input.

Consequently, the shortage of agro-dealers and distributors in the country impact farmers, by making them search for quality seeds and fertilizers far away from their homes as observed in the visited LGAs. Table 3.26 shows the average distance farmers used to access quality agricultural inputs.

4.9 Inadequate Mechanism for regulating Price of Fertilizers

Section 4(1)(u) of Fertilizer Act of 2009, provides that, TFRA as a regulatory body has an obligation of setting prices of fertilizers in the country.

The indicative price established comprises the following elements; Free on Board (FOB), Marine Costs, Freight Insurance, Profit Margin (2%), costs from Airport to wholesalers and Profit Margin (4%); and Distribution to retailers' costs and profit margin (6%).

The following are the evidence, which show that there is inadequate mechanism of regulating the indicative prices.

Inadequate mechanism to ensure information about Indicative Prices to reach all intended Users

Inspection report from TFRA of March 2018, showed that indicative prices did not reach all intended users, the information mostly ends at Regional and LGAs level without flowing down to village level. Most agro-dealers are unaware of the prices established by TFRA for the fertilizers such as DAP and UREA that are supplied in the villages. Interviews held with officials from Hai DC indicated that indicative prices do reach LGAs level but there was no mechanism to ensure that such critical information flows down to all villages.

Furthermore, according to interviews held with farmers from Hai DC, Mbeya DC, Kalambo DC and Masasi DC, it was noted that some farmers are unaware of established indicative prices. The main reasons mentioned for this unawareness was non-display of Indicative Prices of the fertilizers posters

by the agro dealers. Consequently, this led to inconsistency of fertilizer prices. Table 4.8 indicates the number of farmers and their level of awareness of indicative price by the farmers.

Table 4.8: Farmers awareness on the Indicative Prices

LGAs	Village	Number of Farmers interviewed	Farmers who are aware of Indicative Prices	Percentage of awareness (%)
Hai DC	Nkwansira and Kimashuku	16	8	50
Kalambo DC	Mkowe and Singiwe	21	0	0
Mbeya rural DC	Ntangano-Ijombe and Uyole	18	5	28
Masasi DC	Mbemba and Chigugu	20	0	0

***Source**: Auditors' Analysis, September 2018*

From Table above 4.8, it can be seen that most farmers were unaware of indicative prices established by TFRA.

Also, in the review of TFRA inspection reports the indicative price is said to be the problem contributing to the unavailability of fertilizer in some regions. This is because agro - dealers reported that they do not get profit when using the prices indicated by TFRA.

b) Fluctuations of indicative prices in a single agricultural season

The review of indicative prices that were established by the TFRA in August 2017 and February 2018 reveals that there were differences on the indicative prices for the 50-kg bags fertilizers that were distributed in the country. In some regions there were prices fluctuations, a situation that confuses farmers. Table 4.9 below shows variations of prices within one agricultural seasons of 2017/18 in the visited regions.

Table 4.9: Price Fluctuation for 50-kg bag fertilizer within one agricultural season

Region	August 2017 Price (In TZS)		February 2018 Price (In TZS)		Variations of Prices between the August 2017 and February 2018 (In TZS)	
	DAP	UREA	DAP	UREA	DAP	UREA
Kilimanjaro	62,217	46,934	56,726	53,446	-5,492	+6,512
Mbeya	68,000	51,228	58,720	55,405	-9,280	+4,177
Rukwa	65,500	48,500	61,677	58,308	-3,823	+9,808
Mtwara	76,667	60,000	56,713	53,434	-19,954	-6,287

Source: *Indicative Prices between August 2017 and February 2018*

Table 4.9 shows that there were price variations based on time of importation of agricultural inputs. For the visited regions, the highest price variation was TZS 19,954 which show that if fertilizers were imported at the right time it could reduce the price to farmers who ultimately bear the burden of such variations.

The following were the reasons to show that Tanzania Fertilizer Regulatory Authority (TFRA) inadequately regulated indicative prices:

i. Indicative Price do not represent all types of fertilizers

According to Fertilizer Regulations of 2011, TFRA were required to set prices on the fertilizers such as UREA, Di-Ammonium Phosphate (DAP), Calcium Ammonia Nitrate (CAN), Ammonium Sulphate (SA), NPKs and any other type of fertilizer determined by TFRA so as to ensure prices are controlled. The review of importation report status between years 2013/14 and 2017/18 revealed that the country imports about 16 types of fertilizers.

Currently, DAP and UREA are procured through bulk procurement methodology and the indicative prices are only for those two types. The review of demand of fertilizers of 2017/18 and the fertilizers supplied reports of 2016/17 in the country revealed that, DAP and UREA accounts for 61% of the fertilizers that were used in the country, hence TFRA should focus more on these two types of fertilizers.

ii. Inadequate implementation of stakeholders' recommendations on price regulation

According to the interviews held with officials from Tanzania Fertilizers Company (TFC) and Fertilizer Society of Tanganyika (FST) it was noted that they were involved during the time of price setting but the challenges were on the implementation of their recommendations.

The costs related to operationalization of the stores or go-downs owned by distributors were not included during the time of setting price. Hence, the prices established were unprofitable to some distributors. This is because distributors of agricultural inputs are required to have store or go-downs all over the country to store the inputs needed in different regions. Hence, they are required to employ personnel who would manage those stores or go -downs. Consequently, distributors were reluctant to distribute some fertilizers in some of the needed areas as observed in Kalambo DC during the on-season of 2018. This resulted in unavailability of fertilizers in the market.

4.10 Inadequate monitoring and evaluation conducted by TFRA to authorized inspectors in LGA

It was noted that there was no monitoring and evaluation done by TFRA to its authorized Inspectors. Moreover there were insufficient reports submitted by the authorized inspectors in the LGA to TFRA showing conducted activities in their LGAs. Therefore, there were no means of identifying extent of progress and challenges faced by the inspectors in the LGAs. The authorized fertilizer inspectors prepare inspection reports and submit to TFRA. These reports are used by TFRA to track performances of the fertilizer inspectors in the LGAs. But it was noted that the adopted reporting system by the LGAs is operating on an ad hoc mode. It was therefore difficult to follow and track progress of the facilities.

Reasons for non-conducting of M&E to LGAs

i) Absence of well-prepared M&E guidelines by TFRA in conducting M&E activities to its authorized inspectors;
ii) TFRA do not plan for monitoring and Evaluation activities, therefore not budgeted.

Based on the reasons given above, there is no means of measuring the extent of performances of the authorized inspectors working in the LGAs. Also, there is no well-defined means of identifying progress, and challenges in the LGA level. Similarly, the way forward and recommendations are not efficiently set and measured.

CHAPTER FIVE

AUDIT CONCLUSION

5.1 Introduction

This chapter provides conclusions of the audit based on the audit objective and findings presented in chapter three and four of this report. The conclusions were formulated based on the overall and specific objectives of the audit as presented in chapter one of this report.

5.2 Overall Audit Conclusion

There were inadequate mechanisms to ensure that good quality agricultural inputs are available to farmers. This is caused by inadequate control to ensure quality agricultural inputs were supplied and meet the actual demand as a result of inadequate distribution system that was executed by the Ministry of Agriculture, TFRA and TOSCI. This might impact the productivity of crops in the country, a situation that led to food insecurity as well as fall of income to individual farmers and the country as well.

Farmers in the country were using agricultural inputs that were either of low quality or sub standards caused by inadequate mechanism to ensure good quality agricultural inputs are available to farmers. There was limited implementation of awareness creation to farmers that could have assisted in farmers identifying quality features of the supplied agricultural inputs. There was no baseline survey that was conducted to all farmers based on their agricultural zones in the country to ensure the demanded agricultural inputs are supplied according to soil status of a particular area.

Currently, there was an average supply of 71% of the demanded fertilizers and 53% of the demanded seeds in the country. The low levels of supply were due to inadequate seed production or importation as well as limited knowledge on the utilization of quality seeds and fertilizers by farmers. Also, based on the distribution system that were employed by agricultural input distributors under National Voucher System, agricultural inputs always reached farmers late due to delays in distribution system as well as infrastructural problems to some remote areas in the country.

5.3 Specific Audit Conclusions

5.3.1 Inadequate mechanism to ensure quality inputs are supplied in the country:

There is existence of low quality and substandard agricultural inputs in the market. Mostly caused by weak quality control of agricultural inputs during the importation, production and distribution. This was evidenced by the existence of agro-dealers who do not meet the requirements for storage and supply of the agricultural inputs.

Presence of unregistered agro-dealers operating without being licensed by TOSCI or TFRA and those who supply inputs only during agricultural season is another challenge. Therefore, farmers access low quality agricultural inputs supplied by these agro-dealers. Also, lack of knowledge by farmers on application of inputs lowers agricultural productivity, and consequently, hinders the attainment of the government objectives to farmers of increasing crop yields per acre to ensure sustainable development in agriculture sector.

There were inadequate conducts of inspection activities at entry points, and to agricultural input sellers. Inspections during seed production were few and conducted late. Lack of resources both human and finance are major reasons for the failure to cover all planned inspection activities. Lack of tools to facilitate inspections was also observed to be among reasons for such low conduct of inspection.

5.3.2 Demand Forecasting was not conducted efficiently in the country

Ministry of Agriculture through its regulatory authorities did not establish demand of inputs sufficiently. These institutions did not have mechanisms to collect the actual needs from the farmers. Only hypothetical means of demand establishment were used. Therefore, the total amount of agricultural inputs demanded was not realistic.

Currently, there are no baseline surveys in the country that show the actual needs from farmers. Financial constraints is said to be the reason for the failure to conduct baseline surveys.

The current system of demand establishment used does not function efficiently and hence leading into delays of demand submission. Also, there was inadequate coordination between agricultural extension officers from LGAs and farmers who were not fully involved during demand establishment process.

5.3.3 Inadequate distribution system and untimely supply of Agricultural Inputs

Farmers from remote areas did not have access to agricultural inputs because of poor infrastructure. Demand of agricultural inputs is high during the rainy season whereas most of the roads are inaccessible.

Most of the agricultural inputs used in the country are imported from abroad because there are very few locally based agricultural input producers. This causes inability to timely provide agricultural inputs to farmers. Using private companies to supply quality agricultural inputs does not ensure timely supply of agricultural inputs throughout the country.

There are inadequate mechanisms to regulate prices of fertilizer in the country. Few inspections to assess compliance of inputs sellers with the established prices are conducted. In addition, farmers were not aware of indicative prices, and the indicative prices used in the country cover only few types of fertilizers.

Farmers also face challenges when accessing credit facilities to enable them to purchase required inputs because of lack of collateral securities. Seeds producing companies also have the same challenges because most of them did not use all arable land to produce the needed quality seeds.

5.3.4 Inadequate Monitoring and Evaluation of the performance of TFRA

There was inadequate monitoring and evaluation of performance of TFRA and TOSCI. This was noted to be at all levels of performance i.e. Monitoring and Evaluation of TOSCI and TFRA by the Ministry of Agriculture as well as Monitoring and Evaluations conducted internally by TOSCI and TFRA in their respective entities. To a great extent, this affected the attainment of the ministerial goals and objectives in ensuring that good quality agricultural inputs are supplied to all farmers in the country.

Furthermore, the Ministry of Agriculture did not fulfill its monitoring and evaluation obligation in ensuring that TOSCI and TFRA ascertain the quality of seeds and fertilizers supplied in the country, respectively.

Moreover, despite that the Ministry of Agriculture introduced Agricultural Routine Data System (ARDS), whose objective was to quickly capture the agricultural information from the LGA level, the system was not effectively utilized and as a result it could not provide an effective means of tracking progress and challenges on issues related to agricultural inputs.

TOSCI also did not conduct monitoring and evaluation to its zonal offices. Although there were authorized inspectors at LGA level who worked as seed inspectors, TOSCI did not conduct monitoring and evaluation on their performances in ensuring that they perform their duties in accordance to the conferred mandates and guarantee supply of good quality seeds in their respective areas.

CHAPTER SIX

AUDIT RECOMMENDATIONS

6.1 Introduction

The audit findings and conclusions highlighted some weaknesses of the system used to ensure farmers have access to good quality agricultural inputs. The weaknesses were noted in three audit parameters namely, availability of good quality, meeting the demand of the farmers and timeliness in the distribution of agricultural inputs.

The National Audit Office believes that in order to improve the system used to ensure availability of quality agricultural inputs to farmers the recommendations produced in this report need to be fully implemented.

The recommendations will also ensure the presence of the 3Es of Economy, Efficiency and Effectiveness in the use of the public resources. The recommendations are specifically addressed to the Ministry of Agriculture through Tanzania Official Seed Certification Institute (TOSCI) and Tanzania Fertilizers Regulatory Authority (TFRA).

6.2 Specific Audit Recommendations

6.2.1 Mechanism to ensure quality agricultural inputs are supplied in the country

The Ministry of Agriculture should:

1) Strengthen mechanisms that will ensure quality agricultural inputs are supplied in the country, by having well equipped Performance Evaluation tools that will help in monitoring the extent of implementation of relevant policies specifically on issues of quality agricultural inputs to farmers.

Tanzania Fertilizers Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI) should:

1) Strengthen quality control mechanisms at entry points and to agro-dealers to ensure control of supply of standard agricultural inputs to farmers;

2) Ensure availability of tools, human and financial resources needed in ascertaining availability of quality agricultural inputs to farmers in the country; and

3) Ensure that all actors such as producers of agricultural inputs, agro-dealers, importers and authorized inspectors are registered and trained so as to increase knowledge and awareness on issues related to agricultural inputs.

6.2.2 Demand forecasting of agricultural inputs

The Ministry of Agriculture should:

1) Conduct a baseline survey so as to establish effective demand of needed agricultural inputs;

2) Improve available reporting mechanism so as to ensure timely and proper analysis of agricultural inputs demanded in the country; and

3) Ensure that seed demand is effectively established so as to ensure that seeds at adequate quality and quantity are timely supplied to farmers.

Tanzania Fertilizers Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI) should:

1) Improve the system and mechanism that will ensure timely reporting and proper analysis of needed fertilizers and seeds according to demand; and

2) Formulate awareness creation mechanism on importance of quality seeds and fertilizers to key actors such as farmers, agro-dealers and agricultural extension officers.

6.2.3 Distribution system to ensure timely supply of Agricultural Inputs

The Ministry of Agriculture should:

1) In consultation with PO-RALG make sure that they locate specific areas in selected LGAs for the production of good quality seeds; and

2) Strengthen mechanisms to ensure farmers' access to credit facilities.

Tanzania Fertilizer Regulatory Authority (TFRA) should:

1) Improve mechanisms for ensuring timely distribution of quality fertilizers to farmers;

2) Improve mechanism for ensuring that indicative prices for all types of fertilizers are timely developed, communicated to the intended users and are complied with; and

3) Ensure proper coordination between importers, distributers, fertilizer sellers and farmers within the distribution chain so as to control quality of the fertilizers distributed to farmers.

REFERENCES

1. Agricultural Development Economics Division (ESA) of the Food and Agricultural Organization (FAO), and with the Development Research Group (DECRG) of the World Bank, National Panel Survey of Tanzania conducted on 2009.

2. United Republic of Tanzania, Ministry of Industry, Trade and Marketing, Agricultural Marketing Policy December, 2008

3. Guo, Zhe and Koo, Jawoo & Wood, Stanley, Fertilizer Profitability in East Africa a spatially explicit Policy analysis, 2009

4. Africa Enterprise Challenge Fund, Registering and Certifying Agricultural Inputs in Tanzania: An Updated Assessment of Key Constraints and Recommendations for Change, October 2016.

5. Adeleke Salami, Abdul B. Kamara and Zuzana Brixiova, Smallholder Agriculture in East Africa: Trends, Constraints and Opportunities, AFRICAN DEVELOPMENT BANK GROUP, April 2010

6. International Fertilizers Development Center in support of the African Fertilizer and Agribusiness Partnership, Tanzania Fertilizer Assessment, June 2012.

7. IPP Media, Nipashe Newspaper, Article on Effects of substandard Agricultural Inputs in Njombe District Council, October 2016

8. The Citizen Magazine Tanzania, Tackle Challenges Facing Agriculture, January 2016

9. United Republic of Tanzania, Agricultural Sector Development Strategy 1&2 2001/02-2014/15 & 2017/18 - 2024/25.

10. United Republic of Tanzania, National Agricultural Policy, 2013

11. United Republic of Tanzania, The Fertilizers Act, 2009 and its Regulations of 2011 and its amendments of 2017

12. United Republic of Tanzania, The Seeds Act, 2003 and its Regulations of 2007

13. United Republic of Tanzania, President's Office - Regional Administration and Local Government Strategic Plan, 2011/12 – 2015/16

14. United Republic of Tanzania, Ministry of Agriculture Food Security and Cooperatives, Mid Term Strategic Plans, and 2011-2016
15. United Republic of Tanzania, Ministry of Agriculture Food Security and Cooperatives Annual Reports of 2013/14 -2017/18

16. United Republic of Tanzania, Tanzania Official Seed Certification Institute, Strategic Plans, and 2013/14 -2017/18

17. United Republic of Tanzania, Tanzania Official Seed Certification Institute Plans and Annual Implementation Reports of 2013/14 - 2017/18

18. United Republic of Tanzania, Tanzania Fertilizer Regulatory Authority Plans and Annual Implementation Reports of 2013/14 - 2017/18

19. United Republic of Tanzania, Tanzania Official Seed Certification Institute, Inspection Reports between 2013/14 and 2017/18

20. United Republic of Tanzania, Tanzania Fertilizer Regulatory Authority, inspection Reports between 2013/14 and 2017/18

APPENDICES

Appendix 1: Responses from the Audited Entities

This part covers the responses from the three audited entities namely, the Ministry of Agriculture, Tanzania Fertilizer Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI). The responses are divided into two i.e. general comments and specific comments in each of the issued audit recommendations. This is detailed in appendices 1(a) and 1(b) below:

Appendix 1(a): Responses from the Ministry of Agriculture

General Comment

The Ministry of Agriculture acknowledges receiving Audit comments on the Supply of quality agricultural inputs to farmers. The Ministry assures you that, she will work on these comments so as to improve performance and boost production and productivity of crops in the country.

Specific Comments

S/No	Recommendation to the Ministry of Agriculture	Comments from the Ministry of Agriculture	Planned actions	Implementation Timelines
1.	Strengthening mechanism that will ensure quality agricultural inputs are supplied in the country, by having well equipped Performance Evaluation tools that will help in monitoring the extent of implementation of the policy specifically on issues of quality agricultural inputs to farmers	-Adherence to regulations and procedures along Inputs supply chain. - Operationalization of Monitoring and Evaluation System	-Registration of ALL Agro dealers -Spot check and Regular inspection to Agro dealers by TOSCI and TFRA - Train more seed and fertilizer inspectors	July,2019

S/No	Recommendation to the Ministry of Agriculture	Comments from the Ministry of Agriculture	Planned actions	Implementation Timelines
2.	Conduct a baseline survey so as to establish effective demand of needed agricultural inputs	The Ministry has planned to carry out the baseline survey for the 2019/2020 financial year and it reflects in its budget.	-Training Agricultural Officers (enumerators in 185 LGAs) -Develop seed Data base	July,2019/2020 to June, 2020/2021
3.	Improve available reporting mechanism so as to ensure timely and proper analysis of agricultural inputs demanded in the country	The Ministry has introduced Agricultural Routine Data System (ARDS), a data base tool.	-Improve ARDS Tool to capture all information pertained to Agricultural inputs demand, availability, supply and use. - Develop and align key performance indicators (KPI) for improving reporting.	June,2020
4.	The Ministry to ensure that seed demand is effectively established so as to ensure that seeds at adequate quality and quantity are timely supplied to farmers	-To conduct a baseline survey to establish the demand for inputs -In support of BMGF to enhancing seed systems in the country	-Involve LGAs and Regional secretariats -Establish data base for seed demand	June, 2024
5.	In consultation with PO-RALG make sure that they locate specific areas in selected LGAs for the production of good quality seeds	-Well noted. -Production of quality seeds are guided by seed regulations which stipulate conditions for seed farm establishment. -Communication with LGAs about site selection for seed production is in force.	-LGAs to select areas for production of quality seed based on regulations -Train seed producers for both certified and quality declared seeds (QDS).	June, 2024

S/No	Recommendation to the Ministry of Agriculture	Comments from the Ministry of Agriculture	Planned actions	Implementation Timelines
6.	Strengthen mechanisms to ensure farmers' access to credit facilities	-AGITF to open more branches to make farmers access their services -Advice unbankable farmers to acquire collateral from PASS	-Strengthening of producers SACCOS, AMCOS, COPERATIVES SOCIETIES -Advice farmers to contact TADB for soft loans	June, 2022

Appendix 1(b): Responses from the Tanzania Fertilizer Regulatory Authority (TFRA)

General Comment

TFRA main function is to regulate all matters relating manufacturing, importation, exportation, sale of quality of fertilizers, fertilizer supplements and sterilizing plants in the country

Specific Comments

S/No.	Recommendations to TFRA	Comments from TFRA	Planned actions	Implementation Timelines
1.	Strengthen quality control mechanisms at entry points and to agro-dealers to ensure control of supply of standard agricultural inputs to farmers	-Training of new fertilizer inspectors has been conducted. -Routine inspection is conducted	-To increase the number of inspector in the country by 50 - To train 10 fertilizer dealers association and farmer on good practice in handling fertilizer - To carry out inspection all over the country	2019/2020 Continuous process Continuous process
2.	Ensure availability of tools, human and financial resources needed in	-TFRA has provided safety gears and inspection tools to fertilizer inspectors -TFRA facilitated inspection through its staff and inspectors from LGA's	Subject to approval of organization structure and scheme of service the Authority will recruit 35 new	2019/2020 to 2020/2021

S/No.	Recommendations to TFRA	Comments from TFRA	Planned actions	Implementation Timelines
	ascertaining availability of quality agricultural inputs to farmers in the Country	-Currently TFRA has 29 staffs	staff in financial year 2019/2020 who will enhance implementation of TFRA core activities in assuring availability of quality fertilizer.	
3.	Ensure that all actors such as producers of agricultural inputs, agro-dealers, importers and authorized inspectors are registered and trained so as to increase knowledge and awareness on issues related to agricultural inputs	-Training has been conducted in several regions. Since training is a continuous process the authority will keep on providing training to key stakeholders in fertilizer value chain on issues related to fertilizer -TFRA has registered 2840 agro dealers -	- In financial year 2019/2020 the Authority will conduct training to agro dealers in the regions in Southern Highlands (Iringa, Njombe, Songwe, Mbeya, Ruvuma, Rukwa, Katavi) which have high fertilizer utilization. - TFRA is planning to register 600 new fertilizer dealers in financial year 2019/2020	2019/2020 -2019/2020
4.	Improve the system and mechanism that will ensure timely reporting and proper analysis of needed fertilizers and seeds according to demand	TFRA in collaboration with other Government institution will keep on sensitizing the use of fertilizer as per soil requirement.	- To collaborate with TARI and other partners in order to have current/updated soil mapping	Continuous process
5.	Formulate awareness creation mechanism on importance of	TFRA has conducted training to agro dealers in 10 Regions (Lindi, Mtwara, Iringa, Tabora, Shinyanga, Mwanza, Mara, Geita,	In financial year 2019/2020 the Authority will conduct training to agro dealers in the	Continuous process

S/No.	Recommendations to TFRA	Comments from TFRA	Planned actions	Implementation Timelines
	quality seeds and fertilizers to key actors such as farmers, agro-dealers and agricultural extension officers	Simiyu, Kagera) on the legal framework, fertilizers, handling and its judicial use. Also TFRA every year participate in Nane Nane Agriculture exhibitions and also staffs have been attending different TV programs to create awareness on the use of quality fertilizer	region in Southern Highlands (Iringa, Njombe, Songwe, Mbeya, Ruvuma, Rukwa, Katavi) which have high fertilizer utilization.	
6.	Improve mechanisms for ensuring timely distribution of quality fertilizers to farmers.	- Announce tender earlier before cropping season - TFRA sensitize importers and distributors in early distribution of fertilizer - TFRA in collaboration with LGA's ensures fertilizer distributed is of good quality	-Early August fertilizer imported under BPS will be available before the start of cropping season -TFRA will ensure all other fertilizers are available before the cropping season starts by requesting the importers to submit their procurement plans	- Sept, 2019 - 2019/2020
7.	Improve mechanism for ensuring that indicative prices for all types of fertilizers are timely developed, communicated to the intended users and are complied with	- Indicative prices is issued for fertilizer under BPs because the tender price is used as reference price in setting up indicative prices. The indicative prices are developed and communicated before the season starts. - For other fertilizer once the demand has increased will be included under BPS hence indicative prices will be prepare and issued	TFRA will keep on developing and issuing indicative prices for fertilizer under BPS. The indicative prices will be developed and communicated before the start of a season.	2019/2020
8.	Ensure proper coordination	TFRA is conducting inspection throughout the distribution/fertilizer value chain	- Fertilizer Stakeholders platform will be initiated in	2019/2020

S/No.	Recommendations to TFRA	Comments from TFRA	Planned actions	Implementation Timelines
	between importers, distributors, fertilizer sellers and farmers within the distribution chain so as to control quality of the fertilizers distributed to farmers	starting from the importer to the retailer of the fertilizer for quality assurance	order to discuss with key stakeholder in the value chain on the fertilizer legal framework, fertilizers, handling and its judicial use. - TFRA will keep on conducting inspection throughout the value chain	Continuous process

Appendix 1(c): Responses from the Tanzania Official Seed Certification Institute (TOSCI)

General Comment

TOSCI accepts all recommendations raised by the performance auditing and will work on them in order to improve the seed quality control services offered to the public.

Specific Comments

S/ No	Recommendation to TOSCI	Comments from TOSCI	Planned actions	Implementing Timelines
1	Strengthening quality control mechanism at entry points and agro-dealers to ensure control of supply of standards agricultural inputs to farmers	Recommendation accepted and to be implemented	Ensure that Seed Import Permits (SIPs) are timely issued and the seed lots are tested for germination test	Immediately implemented
			Make sure that all districts in entry pints have authorized inspectors that can help to regular inspect seed stockiest in the district. This can help to reduce the tendency of unlawful seed stockiest to sell seed that may enter illegally in the country.	In 2020/2021 Financial Year
			To increase post-harvest seed inspections in the districts bordering	Annually implemented

S/ No	Recommendation to TOSCI	Comments from TOSCI	Planned actions	Implementing Timelines
			with other countries, continue advising the government to put at one roof seed import (SIP) services offered by TOSCI and issued by Plant Health Service of the Ministry of Agriculture.	
2	Ensure availability of tools, human and financial resources needed in ascertaining availability of quality agricultural inputs to farmers in the country	Recommendation accepted and to be implemented	To allocate enough funds in the annual financial budget to purchase tools and equipment.	Annually implemented
			To seek for donor support and continue to collaborations with donor agencies in various projects in the seed industry that are working the area of seed to allocate some funds to strengthen TOSCI capacity	Two years
			To continue request the government to allocate enough staff to TOSCI	Annually
			To utilize effectively the current manpower	Immediately
			To train Agricultural Extension Officers and register them as	Annually

S/ No	Recommendation to TOSCI	Comments from TOSCI	Planned actions	Implementing Timelines
			Authorized Seed Inspectors (ASIs) in the districts with no ASIs to offer seed quality control services especially in remote areas where TOSCI Official Seed Inspectors can easily not reach	
3	Ensure that all actors such as producers of agricultural inputs, agro-dealers, importers and authorized seed inspectors are registered and trained so as to increase knowledge and awareness on issues related to agricultural inputs	Recommendation accepted and to be implemented	To ensure that enough fund is allocated in each financial year budget to train new –seed dealers (seed producers, importers) and Authorized Seed Inspectors	Annually
			To establish a system that will be providing refreshers courses to the existing seed dealers and authorized seed inspectors	2020/2021 Financial Year
			To make sure that the trained seed dealers are registered	Annually
			To organize regular mass media (TV, radio programmes and newspapers) briefing and features on issues related to seed quality control	Annually
4	Improve the system and mechanism that will ensure timely reporting and proper analysis of needed fertilizers	Good Recommendation	This is the role of the Ministry of Agriculture	

S/ No	Recommendation to TOSCI	Comments from TOSCI	Planned actions	Implementing Timelines
	and seeds according to demand.			
5	Formulate awareness creation mechanism on importance of quality seeds and fertilizers to key actors such as farmers, agro-dealers and agricultural extension officers.	Good recommendation	This is coordinated by the Ministry of Agriculture	

Appendix 2: Detailed main audit questions with sub-questions

This part provides the list of four main audit questions and their respective sub-questions as detailed below:

Audit question 1	:	**To what extent do farmers complaints about the availability and accessibility of good quality agricultural inputs?**
Audit question 2	:	**Are quality agricultural inputs supplied to farmers?**
Sub-question 2.1	:	Do TOSCI and TFRA set aside needed resources that facilitate them to conduct test and analysis of sampled agricultural inputs?
Sub-question 2.2	:	Do Regulatory Bodies adequately conduct periodical inspections of agricultural inputs?
Sub-question 2.3	:	Are dealers of agricultural inputs registered/certified and meet all requirements for supplying agricultural inputs to farmers?
Sub-question 2.4	:	Is the process of registration and certification of agro-dealers efficiently conducted?
Audit question 3	:	**Is existing mechanism for procurement and distribution of agricultural inputs guarantee supply of good quality inputs to farmers?**
Sub-question 3.1	:	Has the Ministry of Agriculture established plans that ensure accessibility and availability of good quality inputs to farmers in Tanzania?
Sub-question 3.2	:	Are actors sufficiently involved in the planning for importation/production and distribution of agricultural inputs?
Sub-question 3.3	:	Are the prices of agricultural inputs affordable to farmers? i) Is the system for regulating prices of agricultural inputs working and provide needed support to farmers? ii) Are credit facilities available and sufficiently provided to farmers to purchase agricultural inputs?
Sub-question 3.4	:	Are procedures for demand forecasting and supply of agricultural inputs to farmers sufficiently functioning? i) Is demand forecasting for agricultural inputs conducted effectively? ii) Does the Ministry of Agriculture effectively analyze collected data to ensure availability of needed agricultural inputs?
Sub-question 3.5	:	Is there effective reporting mechanism of the results of demand forecast to ensure availability of agricultural inputs to farmers?

		i) Are the results of demand forecast for agricultural inputs timely communicated to key-stakeholders to facilitate procurement/production of needed agricultural inputs?
Sub-question 3.6	:	Are methods used by the Ministry to conduct demand forecast produce good and needed information that facilitate smooth procurement and/or production of needed agricultural inputs?
Sub-question 3.7	:	Does the Ministry of Agriculture ensure timely distribution of agricultural inputs to farmers? i) Do Regulatory Bodies ensure timely availability of agricultural inputs to farmers?
Sub-question 3.8	:	Is the coordination between importers/producers and distributers during supply of agricultural inputs functioning well?
Audit question 4	**:**	**Does the Ministry of Agriculture have working mechanism to monitor and evaluate TOSCI and TFRA performances?**
Sub-question 4.1	:	Does Ministry of Agriculture have monitoring tools to assess performance of both TFRA and TOSCI?
Sub-question 4.2	:	Does the Ministry of Agriculture have resources to ensure to facilitate monitoring activities to both TFRA and TOSCI?

Appendix 3: Different documents reviewed and reasons for review

This part provides the list of documents that were reviewed by the audit team in order to obtain appropriate and sufficient information to enable the audit team to come-up with clear findings which are supported by collaborative evidences.

Type of document reviewed	Reasons for review
Ministry of Agriculture	
1. National Agricultural guidelines	Understanding the commitment of the Ministry of Agriculture on managing the availability and accessibility of agricultural inputs in the country
2. Strategic Plans for the period 2011-2016	To examine how the Ministry has set strategies that include accessibility and availability of agricultural inputs.
3. Annual Activity Plans from July 2013 to June 2018	Extent to which Ministry plan for issues regarding agricultural inputs
4. Approved Medium Term Expenditure Framework from July 2013 to June 2018	To find out how the Ministry allocates resources to related to agricultural inputs.
5. Implementation and Performance Reports from July 2013 to June 2018	To assess the performance and implementation status of planned activities regarding agricultural inputs.
President's Office - Regional Administration and Local Government	
1. Strategic Plan and Budget 2. Implementation and Monitoring Report 2013 to December 2018 3. ASDP reports, from July 2013 to June 2018 4. Approved Medium Term Expenditure Framework from July 2013 to June 2018	To examine the extent of coordination during the implementation of Agricultural Input activities and
Tanzania Fertilizers Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI)	
1. Annual reports and Strategic Plan from July 2013 to June 2018 2. Fertilizer and Seeds inspection reports from July 2013 to June 2018 3. Implementation reports from July 2013 to June 2018	To examine the efficiency and effectiveness of TOSCI and TFRA to ensure quality agricultural inputs are supplied in the market

4. Training reports to seed and fertilize dealers, from July 2013 to June 2018 5. List of Registered Fertilizers and Seeds dealers from July 2013 to June 2018 6. Agricultural Inputs Inspections procedures 7. Inspection reports from July 2013 to June 2018	

Appendix 4: Officials interviewed and reasons for interviews

This part provides the list of officials interviewed by the audit team to get a broader understanding of the audit area and identify existing challenges, root causes and eventually the consequences to those problems and challenges

S/N	Entity	Official Interviewed	Reasons
1	Ministry of Agriculture	➢ Director of Crop Development ➢ Assistant Director-Input Section ➢ Plant Health Section-Officers ➢ Seed Inspectors ➢ Fertilizer Inspectors ➢ Ag. Director Policy and Planning	• To examine more information on extent of the problem • To examine to what extent the Ministry is fulfilling its role of ensuring quality agricultural inputs are available to farmers. • To determine challenges/gaps faced by the Ministry of Agriculture during the implementation of an agricultural policy and programmes in the country, • To get confirmation of information obtained from reviewed documents related to the provision of Seeds and Fertilizers.
2	President's Office - Regional Administration and Local Government	Director of Sector Coordination Agricultural officials from the Department of Sector Coordination	• To examine the extent PO – RALG coordinated agricultural issues specifically the seeds and fertilizers at Local Government level. • To determine to what extent PO – RALG implemented agricultural policies and coverage concerning agricultural inputs availability and accessibility.

3	Tanzania Fertilizers Regulatory Authority (TFRA)	Fertilizer Registrar Fertilizer Inspectors Administration and Legal Officers	• To determine to what extent TFRA is implementing fertilizer-related activities. • To examine how TFRA procure importers of Fertilizer that ensures supply of quality fertilizers.
4	Tanzania Fertilizer Company (TFC)	Director General	• To assess coordination mechanism and challenges faced during the distribution of fertilizers in the country • To understand pricing establishment techniques and control mechanisms
5.	Fertilizer Society of Tanganyika (FST)	Chairman	• To assess coordination mechanism and challenges the importers of fertilizers in the country are facing
6	Tanzania Official Seed Certification Institute (TOSCI)	Director of Seed Certification Department Director of Research and Promotion Director of Finance Quality Assurance Manager Seed Inspectors	• To determine to what extent TOSCI is implementing seeds activities. • Quality Assurance mechanisms to ensure quality seeds are supplied in the market.
7	Agricultural Seeds Agency (ASA)	Director of Production Director of Marketing and Distribution	To determine challenges facing Seeds Producers in the country.
8	Tanzanian Seed Trade Association (TASTA)	Chairperson	To determine challenges facing Seeds dealers Associations in the country.
9	Input Sellers	Input Sellers and workers	To determine how agricultural input sellers comply with the

			requirements of agricultural inputs business in the country
10	Farmers Association Muungano wa Vikundi vya Wakulima Tanzania (MVIWATA), and Tanganyika Farmers Association	Director General Research Officers	To determine challenges facing all levels of farmers related to Seeds and Fertilizers in the country.
11	Farmers	75 Farmers in the 8[20] visited villages	To examine their level of knowledge on quality of inputs, indicative price, awareness creation and the use in agricultural activities.

[20] Nkwansira, Kimashuku, Mkowe, Singiwe, Ntangano-Ijombe, Uyole, Chigugu and Mbemba village

Appendix 5: Inspections conducted by TOSCI to ensure Quality of Seeds Distributed

This part shows the extent on which seed producers delays to submit their field inspection request to TOSCI as well as number of inspection conducted by TOSCI to those established farms to ensure quality of the seeds produced.

Company	Crop	Variety	Farm Location	Hectares	Planting Date	Application Receipt Date	Status	Days Delayed	Application Status	Required Inspection	Inspections Conducted
ASA-MOROGORO	OPV MAIZE	TMV1	TUNDUMA	16 H.a	05-02-18	03-04-18	Late Application	27	Accepted by TOSCI	3 (prior to flowering, at flowering, and before harvesting)	2
ASA-MOROGORO	PADDY	TXD 306	KILOMBERO	32 H.a	25-01-18	03-05-18	Late Application	68	Accepted by TOSCI	2 (at flowering and edible stage)	0
ASA-MOROGORO	PADDY	TXD 306	MOROGORO	4.8 H.a	15-04-14	07-05-14	On time	-8	Accepted by TOSCI	2 (at flowering and edible stage)	0

QUTON	COTTON	UKM08	MSONGOMANI IGUNGA	77.6 H.a	15-11-15	07-06-16	Late Application	175	Accepted by TOSCI	3 (before flowering, at flowering and prior to harvesting)	0
QUTON	COTTON	UKM08	MSEMEMBO VILLAGE Near Manyoni	71 H.a	15-12-13	18-03-14	Late Application	63	Accepted by TOSCI	3 (before flowering, at flowering and prior to harvesting)	1-ball and spiting stage
SEEDCO	MAIZE	SC627	SUMBAWANGA Near NAMANYERE TOWN	38 H.a	01-02-18	12-02-18	On time	-19	Accepted by TOSCI	3 (prior to flowering, at flowering, and before harvesting)	0
SEEDCO	MAIZE	SC403	IRINGA-IFUNDA	166 H.a	30-10-17	13-12-17	Late Application	14	Accepted by TOSCI	3 (prior to flowering, at	1-prior flowering

										flowering, and before harvesting)	
SEEDCO	MAIZE	SC403	IRINGA-IFUNDA	134 H.A	30-11-17	10-01-18	Late Application	11	Accepted by TOSCI	3 (prior to flowering, at flowering, and before harvesting)	0
HIGHLAND SEED GROWER	MAIZE	UH6303	MLALE EAST	60 H.a	26-12-16	25-01-17	On time	0	Accepted by TOSCI	3 (prior to flowering, at flowering, and before harvesting)	0
HIGHLAND SEED GROWER	MAIZE	SITUKA	MSIPAZI Near NAMANYERE	8 H.a	01-04-16	30-05-16	Late Application	29	Accepted by TOSCI	3 (prior to flowering, at flowering, and before	1-milking

										harvestin g)	
MERU AGRO-TOURS AND CONSULT	MAIZE	MALE HB 515	IGANYA-MLOWO	1.5 H.a	28-01-18	05-03-18	Late Applicati on	6	Accep ted by TOSCI	3 (prior to flowering , at flowering , and before harvestin g)	0
MERU AGRO-TOURS AND CONSULT	BEANS	UYOLE 03	IGANYA-MLOWO	30 H.a	05-03-18	16-04-18	Late Applicati on	12	Accep ted by TOSCI	2	0
IFFA SEED	MAIZE	SITUKA	WEST-QUASH	36 H.a	08-02-18	16-02-18	On time	-22	Accep ted by TOSCI	3 (prior to flowering , at flowering , and before harvestin g)	0
IFFA SEED	MAIZE	SITUKA M1	MAGUGU WEST	35 H.a	17-01-16	22-02-16	Late Applicati on	6	Accep ted by TOSCI	3 (prior to flowering , at flowering , and before	0

										harvestin g)	
SUBA AGRO	MAIZE	CML444/ 489	BLOCK 16 MLOWO	4 H.a	12-01-18	31-01-18	On time	-11	Accep ted by TOSCI	3 (prior to flowering , at flowering , and before harvestin g)	0
AGRISEED TECH LTD	SOYA BEANS	SOYA 02	1 FIELD ULAYA, KILOSA	1 H.a	27-03-18	19-06-18	Late Applicati on	54	Accep ted by TOSCI	2 (at Flowerin g and Edible stage)	0
AGRISEED TECH LTD	SOYA BEANS	SOYA 04	MWAHOM A-ITEWE VILLAGE	3.8 H.a	20-01-18	19-02-18	On time	0	Accep ted by TOSCI	2 (at Flowerin g and Edible stage)	0
ITENTE Co. LTD	BEANS	LYAMUN GO	NORTH-EAST LAKE VICTORIA	3.15 H.a	08-11-17	20-12-17	Late Applicati on	12	Accep ted by TOSCI	2 (at Flowerin g and Edible stage)	0

ITENTE Co. LTD	MAIZE	SITUKA M1	NORTH-EAST LAKE VICTORIA	0.74 H.a	18-02-17	18-04-17	Late Application	29	Accepted by TOSCI	3 (prior to flowering, at flowering, and before harvesting)	0
AMINATA	MAIZE HYBRID	MATE PARENT OF H104	KINAWANGA VILLAGE SUMBAWANGA	1 H.a	13-01-18	11-03-18	Late Application	27	Accepted by TOSCI	3 (prior to flowering, at flowering, and before harvesting)	0
AMINATA	MAIZE HYBRID	NATA H104	MAWINZUSI-SUMBAWNGA	30 H.a	20-12-17	11-03-18	Late Application	51	Accepted by TOSCI	3 (-prior to flowering, 2 at flowering, and before harvesting)	0

Appendix 6: Operationalization at the entry points by the Ministry of Agriculture, TFRA and TOSCI

S/No	Ports of entry	Regional	PHS-Operated Entry	TOSCI-Operated Entry	TFRA-Operated Entry
1	Kilimanjaro International Airport	Kilimanjaro	√	X	X
2	Dar Es Salaam Airport	Dar Es Salaam	√	X	X
3	Dar Es Salaam Habour	Dar Es Salaam	√	X	√
4	Dar Es Salaam TAZARA	Dar Es Salaam	X	X	X
5	Regional Post Office	Dar Es Salaam	X	X	X
6	Mbamba Bay	Ruvuma	X	X	X
7	Kasumulo	Mbeya	√	X	X
8	Tunduma	Mbeya	√	X	X
9	Kasesya	Rukwa	√	X	X
10	Kibondo	Kigoma	√	X	X
11	Kigoma port	Kigoma	√	X	X
12	Kibirizi post	Kigoma	√	X	X
13	Karema	Katavi	X	X	X
14	Makambe border	Kigoma	X	X	X
15	Murongo	Kagera	√	X	X
16	Bukoba Port	Kagera	√	X	X
17	Bukoba Airport	Kagera	√	X	X
18	Mutukula	Kagera	√	X	X
19	Kemondo	Kagera	√	X	X
20	Mwanza Port	Mwanza	√	X	X
21	Musoma Port	Mara	√	X	X
22	Sirari-Tarime	Mara	√	X	X
23	Tengeru	Arusha	√	X	X
24	Namanga	Arusha	√	X	X
25	Tarakea	Kilimanjaro	√	X	X
26	Holili	Kilimanjaro	√	X	X
27	Horohoro	Tanga	√	X	X
28	Mkomazi	Tanga	X	X	X
29	Tanga harbor	Tanga	√	X	X
30	Mbeya Southern Highlands	Mbeya	√	X	X
31	Itungi port	Mbeya	X	X	X

S/No	Ports of entry	Regional	PHS-Operated Entry	TOSCI-Operated Entry	TFRA-Operated Entry
32	Isongole	Mbeya	X	X	X
33	Lindi port	Lindi	X	X	X
34	Mtwara Port	Mtwara	√	X	X
35	Mtambaswala	Mtwara	√	X	X
36	Kabanga	Kagera	√	X	X
37	Isaka	Shinyanga	√	X	X
38	Rusumo	Kagera	√	X	X
39	Ujiji port	Kigoma	X	X	X
40	Kasanga border	Kigoma	X	X	X
41	Nyanzige border	Kigoma	X	X	X
42	Mabamba border	Kigoma	√	X	X
43	Manyovu border	Kigoma	√	X	X
44	Kagunga border	Kigoma	X	X	X
45	Mgambo border	Kigoma	X	X	X
46	Buhingu border	Kigoma	X	X	X
47	Kalya border	Kigoma	X	X	X
48	Kashangulu border	Kigoma	X	X	X
49	Msimbati border	Mtwara	X	X	X
50	Kilambo border	Mtwara	X	X	X
51	Songwe International Airport	Songwe	√	X	X
52	Bagamoyo	Pwani	X	X	X
TOTAL OPERATED ENTRY POINTS			32	0	1