



THE UNITED REPUBLIC OF TANZANIA
NATIONAL AUDIT OFFICE



**GENERAL REPORT ON THE PERFORMANCE
AND SPECIALISED AUDITS FOR THE PERIOD
ENDING 31ST MARCH, 2019**

**REPORT OF THE CONTROLLER AND AUDITOR
GENERAL OF TANZANIA**

March, 2019

THE UNITED REPUBLIC OF TANZANIA



National Audit Office

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THE UNITED REPUBLIC OF
TANZANIA



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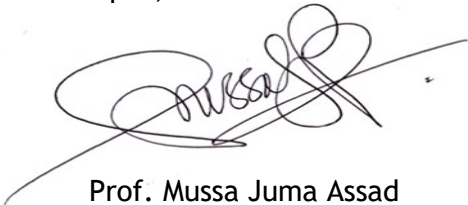
Your Excellency Dr. John P. Magufuli,
The President of the United Republic of Tanzania,
State House,
1Barack Obama Road,
11400 Dar es Salaam.

**Re: Submission of a General Report of the Controller and Auditor
General on the Performance and Specialised Audit Reports**

Pursuant to Article 143(4) of the Constitution of the United Republic of Tanzania of 1977 (as amended from time to time), and Sec.10 (1) of the Public Audit Act No. 11 of 2008, I hereby submit to you my General Report on the Performance and Specialised Audit for the period ending 31st March, 2019.

This report includes six performance audit reports and one follow - up report covering agricultural sector. This General Report will be tabled before the Parliament in April, 2019.

I submit.



Prof. Mussa Juma Assad
CONTROLLER AND AUDITOR GENERAL

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LIST OF ACRONYMS AND ABBREVIATIONS

A - EBG	-	Agricultural Extension Block Grant
ARDS	-	Agricultural Routine Data System
ASDP	-	Agricultural Sector Development Programme
ASDS	-	Agricultural Sector Development Strategy
BXW	-	Banana Xanthomonas Wilt
CBAF	-	Community Based Armyworm Forecasting
CMC	-	Credit Management Committee
DADPs	-	District Agriculture Development Programmes
DAICO	-	District Agricultural, Irrigation and Cooperatives Officer
FAO	-	Food and Agriculture Organization
FFSs	-	Farmer Field Schools
GDP	-	Gross Domestic Product
IPM	-	Integrated Pest Management
LGAs	-	Local Government Authorities
M&E	-	Monitoring and Evaluation
MITI	-	Ministry of Industry, Trade and Investments
MLND	-	Maize Lethal Necrosis Disease
MTEF	-	Medium Term Expenditure Framework
NIRC	-	National Irrigation Commission
PHS	-	Plant Health Services
PO-RALG	-	President's Office Regional Administration and Local Government
SAGCOT	-	Southern Agriculture Growth Corridor in Tanzania
SDGs	-	Sustainable Development Goals
SIDO	-	Small Industries Development Organization
SMEs	-	Small and Medium Scale Enterprises
TDC	-	Technology Development Center
TFRA	-	Tanzania Fertilizer Regulatory Authority
TOSCI	-	Tanzania Official Seed Certification Institute
TPRI	-	Tropical Pesticides Research Institute
VAEO	-	Village Agricultural Extension Officer
WAEO	-	Ward Agricultural Extension Officer
WARCs	-	Ward Agricultural Resource Centers

PREFACE

I am pleased to present my General Report on Performance and Specialized Audits. This time, the report concerns six individual audits and one follow-up report focusing on agricultural development in the country. Main audited entities were the Ministries and authorities responsible for the development of agricultural sector.

This report aims at providing our stakeholders (Members of Parliament, Central and Local Government Officials, Media, the Donor Community, Non-Government Organisations, Community Based Organisations, etc.) with analysis of the findings arising from the individual performance and specialized audits conducted by my office as of March 2019. The details of the summarized matters can be read from the individual audit reports issued to respective Accounting Officers.

This report is being submitted to the President of the United Republic of Tanzania (URT), His Excellency Dr. John Pombe Joseph Magufuli, in accordance with Article 143 of the Constitution of the URT of 1977 (as amended from time to time) and Section 34(1) and (2) of the Public Audit Act No. 11 of 2008.

Under Article 143(4) of the Constitution of the URT of 1977 (as amended from time to time), the Controller and Auditor General is required to submit to the President every report he makes. Upon receipt of such report, the President shall direct the persons concerned to submit such reports in the first sitting of the National Assembly before the expiration of seven days from the day the sitting of the National Assembly began. The same Article allows the Controller and Auditor General to submit his reports to the Speaker of the National Assembly should the President, for whatever reason, fail to submit the reports to the Speaker as is required by law.

The enactment of the Public Audit Act, 2008 enhanced the operational independence of my office in the fulfilment of my Constitutional mandate. The operational independence of my office is expected to enable me to acquire the necessary controls over all the resources available for the office including human and financial, which will enable my office to perform its tasks without being under undue influence and control of any person or authority including those that I audit.

The legislation has broadened the scope of the audit to be conducted by my office by mandating me to carry out Performance, Specialised, Environmental and Special Audits in addition to the normal Regularity Audits we have been conducting over the years.

In essence, this report has enabled me to provide the necessary independent assurance to Parliament concerning the proper use and accountability, transparency and probity in the use of public resources in the agricultural sector specifically on: Provision of extensions serviced to farmers, crop pest and disease outbreak, pesticides in agricultural activities, availability and accessibility of good quality agricultural Inputs (seeds and fertilizers) to farmers, constructions of Irrigation infrastructures, provision of support to SMEs and provision of agricultural extension services to farmers in Tanzania.

The main objective of conducting these audits was to examine the identified problems in the respective area; establish whether allocated resources had been effectively spent with due regard to economy, efficiency and effectiveness as intended and appropriated by Parliament in the above mentioned areas.

It is worth noting that while my office conducts audits and reports on the performance of various Central, Local Government and Public Body programmes and activities based on various laws, rules and regulations, the ultimate responsibility for ensuring that there is, economy efficiency and effectiveness in the use of public resources lies with respective Accounting Officers. At the same time, it is the responsibility of the Accounting Officers to ensure that the observations and recommendations raised by the Controller and Auditor General are acted upon.

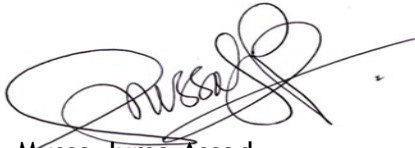
Parliament rely on the Controller and Auditor General and the National Audit Office for assurance in regard to financial reporting and public resources management in the MDAs, LGAs, Public Authorities and other bodies, particularly regarding the economy, efficiency and effectiveness in programme implementation. My office contributes through recommendations given towards improvements in the public sector performance.

In this regard, the Central, Local Governments and Public Authorities and my office each has a role to play in contributing to parliamentary and public confidence building in the better use of public resources with a view of speeding-up the development process of the country and its people. However, while the roles of public sector entities and National Audit Office of Tanzania (NAOT) may differ, the desire for efficient utilization of public resources remains a common goal.

In order to meet the Parliamentarians' expectations and, more broadly, of the public at large, NAOT continually reviews its audit approaches to ensure that the audit coverage provides an effective and independent review of the performance and accountability of public sector entities. Moreover, we seek to ensure that our audit coverage is well targeted and addresses priority areas to maximize our contribution in improving public administration. Hence, our work acts as a catalyst in improving efficient utilization of public resources.

I would like to acknowledge the professionalism and commitment of my staff in achieving our goals and undertaking the work associated with meeting our ambitious audit programs even though they have been working in very difficult conditions marked with insufficient funding and working tools, relatively low salaries and sometimes working in very remote and inaccessible locations.

I hope that the National Assembly and the public at large will find the information in this report useful in holding the Government accountable for its stewardship of public funds and its delivery of services to the Tanzanian citizens.



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28th March, 2019

ACKNOWLEDGEMENT

I would like to express my gratitude to those who created an enabling environment for me to discharge my constitutional obligations. I would like to thank every member of my staff for their endeavours to once again, meet the statutory reporting deadline. With lots of appreciation, I am obliged to pay tribute to my family and the families of my staff members for their tolerance during our long absence from our homes in fulfilling this constitutional obligation.

I would like to thank the Government and the Parliament of the United Republic of Tanzania for their continued support to my office in carrying-out its duties.

Furthermore, my sincere appreciation is extended to the donor community particularly the Swedish National Audit Office (SNAO), USAID, DFID, European Union (EU), African Development Bank (AfDB), Swiss and German Development Cooperation (GFG project) managed by German International Cooperation (GIZ), the World Bank through the Public Financial Management Reform Programme funding and all well-wishers who have contributed immensely towards the transformation of my office. Their contributions in developing the mental asset, IT systems and physical assets of my office have had tremendous impact on our success.

I am equally indebted to all our other stakeholders including Accounting Officers of the audited entities for providing full support and vital information needed for the preparation of the individual performance and specialised audit reports which are the inputs to this general report.

My special appreciation is also extended to the academic community and subject matter experts from the University of Dar es Salaam, Sokoine University of Agriculture (SUA), Mzumbe University, freelance experts and retired officers who added value to our reports through critical reviews which immensely improved the output of the individual performance audit reports.

I would also like to pay tribute to the Public Accounts Committee (PAC) to which this report together with the individual reports will be presented for scrutiny and discussion. We look forward to the Committee inputs and directives emanating from the discussions of these reports.

Last but not least, I would like to thank all public servants throughout Tanzania, without forgetting the role of the taxpayers to whom this report is dedicated. Their invaluable contributions in building the nation cannot be underestimated. May the Almighty God bless you all as we commit ourselves to promote greater accountability on the use of public resources in the country.

EXECUTIVE SUMMARY

Performance audits seeks to improve accountability and performance of government organizations. Also, it provides an objective assessment of the extent to which the audited body has used its resources in carrying out its responsibilities with due regard to economy, efficiency and effectiveness. Section 28 of Public Audit Act No.11 of 2008 gives the Controller and Auditor General of Tanzania mandate to carry out performance audit.

This general report provides common weaknesses noted, conclusion and recommendations in seven performance audits on agricultural sector conducted between 2015 and 2019 relating to provision of extension services to farmers, agricultural crop pests and diseases outbreak, pesticides in agricultural activities, provision of support services to Small and Medium Enterprises, availability and accessibility of good quality agricultural inputs to farmers, supervision of construction activities of irrigation projects in Tanzania and provision of extension services which includes its follow-up.

We have focused specifically on assessing how the government is managing agricultural development in order to ensure efficient, competitive and profitable agricultural industry that contributes to the improvement of the livelihoods of Tanzanians and attainment of broad based economic growth and poverty alleviation. The report provides highlights on the issues revealed in the conducted performance audit against what was expected in terms of service delivery.

The report gives insights based on individual performance audit reports on the extent to which government entities manage the development of agricultural sector and ensure that there is effectiveness in execution of its interventions in the development of agricultural sector for the public sector.

The following were the main findings from the audits conducted:

1) Ineffective Process for Forecasting Demand of Agricultural Inputs

The audit noted that the process of establishing demand for agricultural inputs was not conducted effectively so as to ensure the availability of the actual needs for the farmers. The process was accompanied by weaknesses in gathering data to be used in forecasting of the demand while the actual process of computing forecasted demand was conducted by a limited number of key actors in the supply chain of the agricultural inputs. Ultimately these deficiencies resulted into inaccurate figures for demand forecasts and the longstanding gap between the demand and supply of the agricultural inputs. For instance, during the past 4 years, the average supply of agricultural inputs including seeds, fertilizers and pesticides met only 39 percent of the total demand.

2) Inefficient distribution of quality agricultural Inputs

The audit noted that the distribution system for agricultural inputs was not efficient to ensure timely supply of quality agricultural inputs to farmers. In the 8 of the LGA's visited the team noted a delay ranging from 3 to 5 months after commencement of agricultural season. Despite having a few agro-dealers the distribution system was highly dependent upon the private sector on which producers or importers distributed their agricultural inputs through local distributors and agro-dealers. The audit noted further that there were weak controls on the distribution networks for agricultural inputs which allowed the distribution and sale of low quality, fake, unauthorized and unsuitable inputs to farmers.

3) Inadequate Quality Control of Agricultural Inputs

The audit noted weaknesses in quality control activities performed by TPRI, TOSCI and TFRA. The weaknesses were noted on registration, inspection and trainings as means of ensuring the quality control for agricultural inputs.

Inadequate Registration of Agricultural Inputs and Agro-dealers: The audit noted weaknesses in registration of agricultural inputs and agro-dealers which gave a room for presence of un-registered agro dealers and agricultural inputs in the market. The audit noted that 33 percent of the agro dealers were not registered for selling the seeds and fertilizers in the market. The audit noted further that there were no frequent updates of the list of pesticides allowable for use. Consequently, the weaknesses in inspections and registration of agricultural inputs led to illegal importation of agricultural inputs, selling of repacked agricultural inputs and supply of low quality agricultural inputs in the market.

Inadequate Inspection of Agricultural Inputs: The audit noted that TOSCI, TFRA and TPRI did not adequately conduct inspections of field and ports of entries to ensure that only registered agricultural inputs are imported and sold in the market. The audit also noted that there were no sufficient controls in the importation of seeds which allowed importation of fake and low-quality seeds in the country. Furthermore, it was noted that field inspections were not adequately conducted in 16 out of the 19 sampled seed farms.

Inadequate Dissemination of Knowledge to farmers, agro-dealers and agricultural extension officers: The audit noted that dissemination of knowledge to pesticides sellers, seed and fertilizer sellers, agricultural extension officers and farmers was not adequate to transfer the knowledge about the agricultural inputs. The assessment on the knowledge and awareness of the agricultural inputs noted that farmers lacked knowledge on the proper usage of seeds, pesticides and fertilizers; extension officers lacked knowledge on the transfer of extension services to farmers that

include proper usage of seeds, fertilizers and pesticides; and agro dealers lacked knowledge on quality and proper use of pesticides and fertilizers they were selling. In the visited LGAs, about 80 percent of the seed and fertilizer sellers had no knowledge about the seeds and fertilizers they were selling.

4) Inadequate Management of Agricultural Crop Pests and Diseases Outbreak

The audit noted that the Ministry of Agriculture did not execute well the strategies for managing the agricultural crop pests and diseases. This was caused by ineffective mechanisms to control pests and diseases outbreak on preventive mechanism, control mechanisms and coordination between the different actors in managing crop pests and diseases outbreak.

Inadequate preventive mechanism to reduce crop pests and diseases: The audit noted that the mechanisms to ensure that crop pests and diseases are effectively reduced to the minimum were not well developed and executed. The audit noted that there was insufficient inspection at entry points, awareness of farmers on application of integrated crop pest management methods and limited access to improved seeds and pesticides for controlling pests and diseases.

Inadequate Control mechanisms to reduce crop pests and diseases: The Ministry of Agriculture and PO-RALG did not sufficiently undertake control mechanisms in managing the agricultural crops pests and diseases outbreaks. The audit noted that surveillance for identification of crop pests were not done, reporting and interventions were not conducted and risk based plans were developed in some of the visited LGAs. However, they were not sufficiently implemented.

Weak Coordination on the Management of Agricultural Crop Pests and Diseases: The audit noted that there was weak coordination mechanism observed at both the regional and district levels. The coordination between Ministry of Agriculture and private sector and between government institutions was not sufficiently done. For instance, due to lack of laboratories, Plant Health Services inspectors were sending to TPRI samples confiscated at entry points for laboratory testing, however, there was no established systems to support smooth and efficient exchange of samples.

5) Inadequate Management of Irrigation infrastructures

The audit noted that the construction works for irrigation infrastructure were not adequately managed in visited irrigation zones, as a result, the irrigation schemes that were not completed on time, resulted in higher costs than previously agreed and hence the quality of the works was compromised. The audit noted that 76 percent of the irrigation schemes

were constructed behind schedule. Furthermore, 40 percent of the irrigation schemes ended up with costs overruns.

Inufficient Plans for Construction of Irrigation Schemes: The audit noted that the overall plans before the construction of irrigations schemes were not sufficiently done and that only 3 percent of the feasibility studies that were planned to be conducted were actually carried out. The audit also noted the over-dependence on donor funds which formed about 90 percent of the total funds released for supporting irrigation activities between 2014/15 to 2017/18. Furthermore, the audit observed that feasibility studies were not adequately executed and their results not adequately used during the implementation of the construction activities since key components in some of the feasibility studies were skipped.

Inadequate Supervision of the Construction Activities on Irrigation Infrastructure: The audit noted weak supervision of the construction activities which resulted into delays in project completion. Out of the 83 irrigation schemes which were assessed, 76 percent were found to have been delayed beyond agreed completion time. The projects were found to have improper construction schedules, unrealistic designs, delayed payments to contractors and incapable contractors' due to lack of equipment.

6) Inadequate provision of extension services to farmers

The audit noted that the provision of extension services for farmers was not sufficient and did not guarantee the conveyance of modern farming practices and processing that increases crop yields and value to the agricultural outputs. The audit observed that the methods that were used for provision of services were limited to Field Farm Schools (FFS) and Ward Agricultural Resource Centers only while other methods were not sufficiently employed. Moreover, the tools adopted by the extension officers were not effective and did not involve sufficient number of farmers including the FFS method, which was adopted by only one percent of the total number of farmers that were visited.

Inadequate capacity building for extension officers: The audit noted that the extension officers were not equipped with up to date knowledge on the provision of extension services such as new techniques of delivering the services and updated materials for trainings. In addition, extension officers were not trained on the use of manuals and they were not trained on the pesticides management.

Inadequate Funding for Provision of Agricultural Extension Services: The funding for the provision of extension services was not effective to assist in providing smooth operations of the agricultural extension service activities. The audit noted weakness in the budgeting process where activities were under-budgeted while for some of the budgeted funds were misallocated

into other activities not related to extension services. For instance, the funding for establishment of FFS and trainings for extension officers and farmers were released by 97 percent while implementation was done at 30 percent for establishment of FFSs. Trainings for extension officers were done at 59 percent whereas only 1 percent only of farmers were trained on proper farming methods.

7) Insufficient Provision of Support Services to Agro-processors

The audit found that SMEs including agro-processors were not sufficiently provided with required support services on technology, funds, market as well as business trainings that would facilitate in adding value to agricultural products. The audit noted that only 9 percent of all SMEs registered by SIDO were trained while 37 percent of all loan applicants did not receive funding from SIDO despite being eligible for loans. Transfer of technologies to agro-processors was not sufficiently done because the number of technologies that was actually transferred to agro-processors was below the average number technologies transferred in a period of four years 2013/14 to 2017/18.

Inadequate planning on Provision of Support Services to Agro-processors: The audit noted that the plans for provision of support services were not done at sufficient level to guarantee the quality of support services provided. The audit also noted that stakeholders were not involved during budgeting. In addition to that, issues of agro-processors were not given sufficient priority by the Ministry during budgeting. At the Ministerial level, the budget for developing the agro-processors was only 30 percent of the funding available while 70 percent was left for recurrent expenditure.

Inadequate Needs Assessment for Agro-processors: The audit noted that there was no sufficient system for collection of SMEs needs that would guarantee consideration of needs for bigger proportion of agro-processors. SIDO who were supposed to conduct needs assessment managed to conduct only 1779 needs assessments which were below their target of 2150 needs assessments in the past 4 years.

Inadequate Monitoring of Agro-processing Activities: The audit noted that the reporting systems and follow-up activities were not sufficiently done. The system only allows reporting of quantitative information of the business plan indicators at higher levels above operational level, but the qualitative and detailed information are not reported to supervisory and top management levels. The audit further observed that SIDO officials rarely or never visited most of the agro processors.. In a sample of 36 agro-processors who were visited, only 6 percent of them were frequently visited while the remaining 94 percent were either not visited or rarely visited. Consequently, the inadequate provision of extension services led to insufficient contribution of the agro-processors to the economy whereby

their contribution to GDP is currently at 35 percent which is below the target set by the Ministry of Industry and Trade which is 50 percent.

Audit Conclusion

In general, the audits recognized government's efforts towards agricultural development in the country. However, issues uncovered by the audit reports led to the conclusion that the government has not effectively managed the implementation of various interventions to make agriculture more productive, resilient, and sustainable taking into account its importance to country's economy.

The main strategies identified by the Ministry of Agriculture as key for the development of agriculture are not adequately managed by the Ministry as well as its stakeholders. The noted weaknesses were on the management of agricultural Inputs, quality control of the agricultural inputs, crop pests and diseases outbreak, construction of irrigation Infrastructure, provision of extension services to farmers and provision of support services to agro-processors in the country.

Audit Recommendations

The Ministry of Agriculture should:

- 1) Update and improve the existing procedures for registration, inspection and training to agro-dealers and farmers to ensure availability of quality agricultural inputs in the market;
- 2) Establish mechanisms that will ensure strategies for control and prevention of crop pests and diseases outbreaks are updated to promote the quality of produced crops in order to reduce the level of food insecurity and improve the quality of crops in the international market;
- 3) Strengthen its capacity, and in collaboration with the Ministry of Industry and Trade provide support services to all categories of agro-processors to promote value addition on the agricultural products that would enable the sector to become semi-industrialized;
- 4) Strengthen its means of support to local input producers of seeds, pesticides and fertilizers in order to stimulate local production of needed agricultural inputs hence ensure timely availability of required inputs;
- 5) Ensure that professional development programmes for extension officers are developed based on their needs and are adequately implemented with an objective of imparting them with capacity to provide extension services to farmers including up-to-date knowledge about modern farming practices and technologies;
- 6) Review its chain of actions to ensure that all interventions that are aimed at improving the provision of agricultural extension services

- in LGAs are effectively delivered in a manner that will produce intended results;
- 7) Set a mechanism that will ensure that designs are reviewed to ascertain their viability prior to deployment of contract to commence construction works;
 - 8) In collaboration with the Ministry of Industry and Trade ensure that SIDO develops effective mechanism including adopting reverse engineering for acquiring and disseminating affordable modern technologies to agro-processors to strengthen value addition for agricultural products;
 - 9) Ensure that TOSCI strengthens coordination mechanism by ensuring presence of Terms of Reference with LGAs inspectors to ensure that inspection activities at their respective LGAs are adequately conducted;
 - 10) Ensure that TFRA conduct soil tests throughout the country so as to guide the demand and distribution of fertilizers in different parts of the country based on the soil type and nutritional content of the soil;
 - 11) Ensure that the National Irrigation Commission liaise with PO-RALG to develop a mechanism of approving and supervising the construction of irrigation schemes as per the requirements of National Irrigation Act; and
 - 12) Ensure that TPRI revisits and improves the existing procedures for registration of pesticides and pesticides sellers in order to widen coverage and varieties of registered pesticides to cater for the needs of different parts of the country.

CHAPTER ONE

INTRODUCTION

1.1 Background

Performance audit in the public sector is important since it seeks to improve the accountability and performance of government undertakings so that the citizens receive good services timely from the government. In Performance Auditing different number of factors are considered in selecting areas of focus. These factors include public outcry and importance of the area in relation to socio-economic development.

Performance audits aim to evaluate whether activities, programmes or projects involving collection or use of public funds in Ministries, Departments, Local Government Authorities and other public organizations have been managed with regard to the three Es' i.e. economy, efficiency and effectiveness:

- **Economy** - Minimizing the cost of resources used for an activity, having regard to appropriate quality;
- **Efficiency** - The relationship between inputs and outputs, in terms of goods, services and results, and the resources used to produce them in such a way that minimum inputs are used to produce same outputs or same inputs are used to produce more outputs; and
- **Effectiveness** - The extent to which objectives are achieved and the relationship between the intended impact and the actual impact of an activity.

1.2 Mandate

The Controller and Auditor General of Tanzania is given the legal mandate to carry out performance audit by the Public Audit Act No.11 of 2008. Section 28 of the Act states that:

The Controller and Auditor-General shall, for the purposes of establishing the economy, efficiency and effectiveness of any expenditure or use of resources of the entities, enquire into, examine, investigate and report, in so far as he considers necessary on:

- (a) *The expenditure of public monies and the use of resources by such Ministries, Departments, Agencies, Local Authorities and all such public authorities and other bodies;*

- (b) The conduct of and the performance of their functions by Accounting Officers, Head of Departments and Chief Executives of all such entities;*
- (c) Compliance with environmental laws, regulations and internal environmental policies and standards.*

The performance audit attempts to determine whether the initial objectives set at the beginning of an undertaking were achieved. As a consequence of that, it is then deduced as to whether due regard for economy, efficiency and effectiveness was considered. Recommendations for improvement are made in those areas where it is felt that deficiencies occurred.

Audits were conducted in accordance with the International Standards for Supreme Audit Institutions on performance auditing. Those standards require the NAOT to plan and perform the audit to obtain sufficient and appropriate evidence to provide a reasonable basis for findings and conclusions based on audit objective(s). I therefore report that the evidence obtained provides a reasonable basis for the findings, conclusions and recommendations based on the set audit objective(s).

1.3 Purpose of this general report

The presentation of this general report aims at assisting Members of Parliament, the Government, Mass Media, the Public and other stakeholders to make informed decisions in order to implement the requirements for increased economy, efficiency and effectiveness in the conduct of government businesses. The report provides highlights on the issues revealed in the conducted performance audits against what was expected in terms of planned interventions, implementation of interventions, risk management, monitoring and evaluation of agricultural development activities in the country. This is based on our analysis from the six performance audits carried-out on the agricultural sector. These six performance audits relate to:

- i. Provision of extension services to farmers in Tanzania (2015) which includes its follow- up audit (2019);
- ii. Management of agricultural crop pests and diseases outbreak in Tanzania (2016);
- iii. Management of pesticides in agricultural activities in Tanzania (2017);
- iv. Provision of support to SMEs in Tanzania (2018);
- v. Availability and accessibility of good quality agricultural inputs to farmers in Tanzania (2019); and
- vi. Supervision of construction activities of irrigation projects in Tanzania (2019).

1.4 Main Focus of this General Report

This report focuses on presenting issues regarding the mechanisms instituted by the government in managing agricultural development in order to ensure efficient, competitive and profitable agricultural industry that contributes to the improvement of the livelihoods of Tanzanians and attainment of broad based economic growth and poverty alleviation. Thus, the agricultural sector should be managed and utilised for the long-term benefit of the nation as a whole.

Similarly, agriculture is a significant source of revenue to the government and major economic activities to more than 77.5 percent of Tanzanians¹. Agriculture contributed to 30 percent of the GDP in 2017/18. It is on this basis, the Controller and Auditor General decided to come up with the general report on the performance audits on management of agricultural operations in the country.

1.5 Data Validation Process

The audited Ministries, Departments and Agencies were given opportunities to discuss and comment on the individual audit findings and correct factual misrepresentation.

1.6 Structure of the Report

This general report is structured into eight chapters as follows:

- i. *Chapter one* provides an introductory part of the performance audit, mandate and the purpose of the general report;
- ii. *Chapter two* focuses on the brief description of the management for managing agricultural development in Tanzania;
- iii. *Chapter Three* covers findings on the accessibility and availability of agricultural inputs to famers;
- iv. *Chapter Four* covers findings on the mechanisms for quality control of agricultural inputs that are either locally produced or imported from abroad;

¹National Agriculture Policy, 2013

- v. *Chapter Five* covers findings on the management of crop pest and diseases outbreak in agricultural activities;
- vi. *Chapter Six* covers findings on the measures taken by the government in ensuring that there are adequate irrigation infrastructures in the country;
- vii. *Chapter Seven* covers findings on the provision of extension services to farmers in the country;
- viii. *Chapter Eight* covers findings on the provision of support services to agro-dealers;
- ix. *Chapter nine and ten* focus on overall conclusion and recommendations respectively on the issues observed in the agricultural sector.

CHAPTER TWO

SYSTEM FOR MANAGING AGRICULTURAL DEVELOPMENT IN TANZANIA

2.1 Background

Tanzania has continued to depend on the agricultural sector for economic growth and development of its citizens as it provides employment for 77.5 per cent of Tanzanians. In the year 2016 agricultural sector contributed 29.1 percent of GDP compared to 29.0 percent in 2015 (The Economic Survey 2016), in 2017/2018 its contribution to GDP was 30 percent. Agriculture contributes significantly in the increase in income and poverty reduction. Agricultural development therefore remains the key sector to the country's economic and social development, at least in the foreseeable future.²

Agricultural Sector growth for 2016 decreased compared to 2015. Growth for agricultural economic activities that include crops, livestock, forestry and fishing was 2.1 percent compared to 2.3 percent in 2015.

Tanzania has over 44 million hectares of arable land with only 33 percent of this amount in cultivation and 29.4 million hectares for sustainable irrigation development. The country has classified 2.3 million hectares as high potential; 4.8 million hectares as medium potential; and 22.3 million hectares as low potential

It is widely accepted that the current increase in global warming and climate change, have negative effects on the optimal availability of water resources for crop production worldwide including Tanzania. In this regard, Tanzania needs to take advantage of utilising the identified irrigation potential area. Despite huge opportunities the country had, crops production in Tanzania is faced with many challenges which need more robust and concerted efforts to address them.

The critical weaknesses in agriculture are low productivity of land, labour and capital. This is caused mainly by inadequate finance to obtain productivity enhancing inputs, low returns to labour due to inadequate knowledge and skills; low use of labour saving technologies and low use of improved farm inputs such as quality seeds, fertilizers, and pesticides. Also, over dependence on rain fed agriculture, inadequate agricultural support services, poor rural infrastructure, weak agro-industries and poor linkages within the value chain of agricultural produce all stand as major factors that might hold back the nation from yielding income and investing in this important sector. If these challenges are not addressed immediately and properly, the country might fall into the category of developing countries

² [Hotuba ya Wizara ya Kilimo Mifugo na Uvuvi final Mei 13.05.2017.pdf visited on 18/02/2019](#)

in Africa with huge agricultural potential that has failed to raise the standard of living of their people.

To enhance rapid progress in the agricultural sector, Tanzania requires the involvement of the Government in directing resources and leading other players towards a desired development direction. The Government is supposed to participate in investment and ownership of strategic processes and infrastructure.

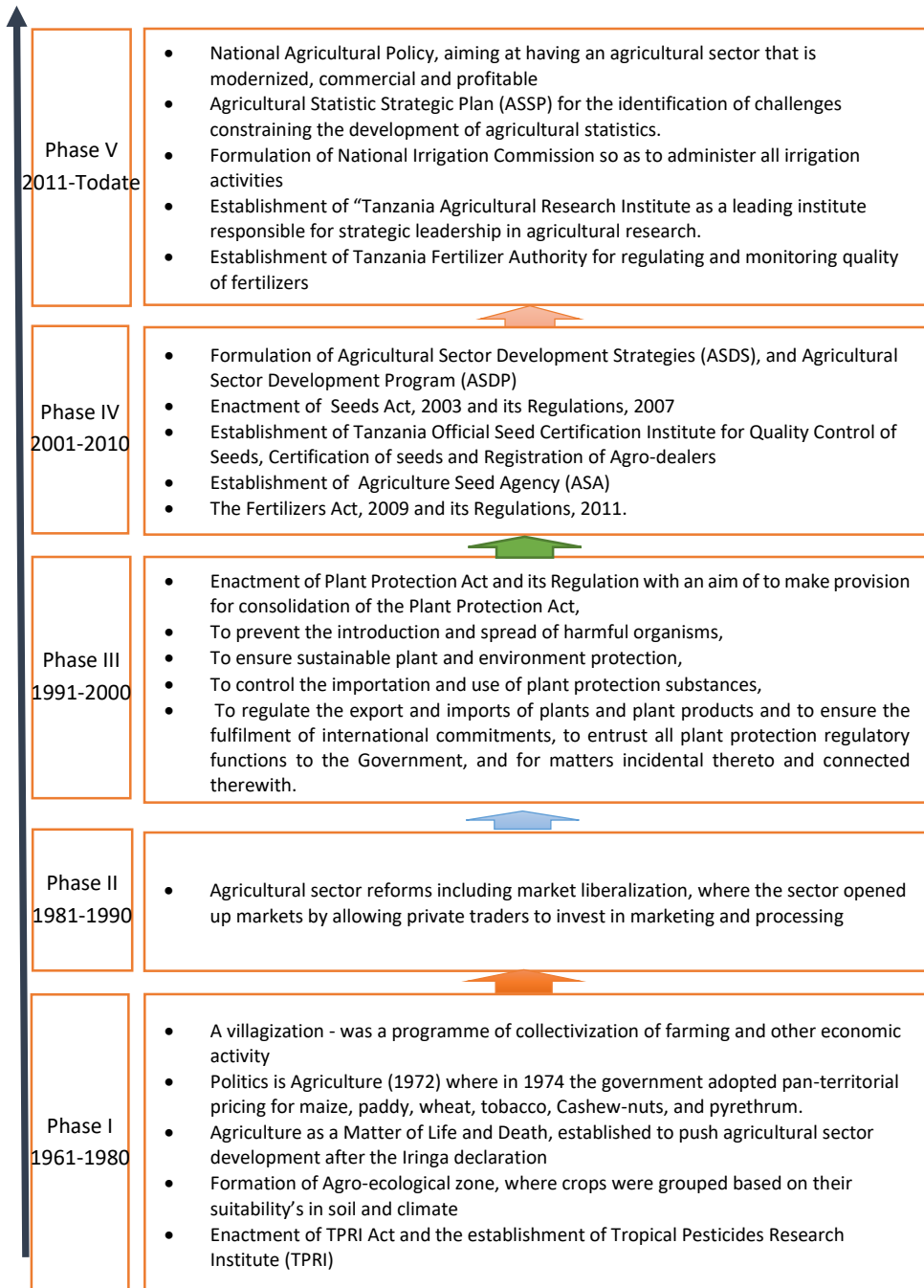
2.2 History of Agricultural Development in Tanzania

From independence, agriculture in Tanzania has been passing through various reforms with the aim of making it productive and sustainable. Different initiatives, strategies, policies and slogans (party manifesto) were launched for the purpose of improving agriculture. During the mid to late 1980s and early 1990s, there were a series of reforms in the agricultural sector, including market liberalization, removal of state monopolies, withdrawal of government from production projects, and reliance on the private sector for agriculture production. A major concern was the fact that reforms did not take into account existing socio-economic differentiation, and little or no consideration was given to how policy impacts might have reinforced access to economic opportunities and exacerbated inequalities.

In 1981 the government launched the National Economic Survival Programme (NESP), which aimed at increasing national production and exports. This was followed by a structural adjustment program between 1982 and 1985.

In 1986, the government formulated the Economic Recovery Programme (ERP), this was followed by a structural adjustment programme from the World Bank and many other donors started to increase their assistance to Tanzania substantially. Refer Figure 2.1 for more information

Figure 2.1: Timeline for Transition of Agricultural Sector in Tanzania



2.3 Strategies for the Development of Agriculture in the Country

In the Vision 2025, agricultural sector is identified as an important arena whereby the economic strategic intervention would be implemented to contribute to the building of a strong solid foundation for highly productive, competitive and dynamic economy.

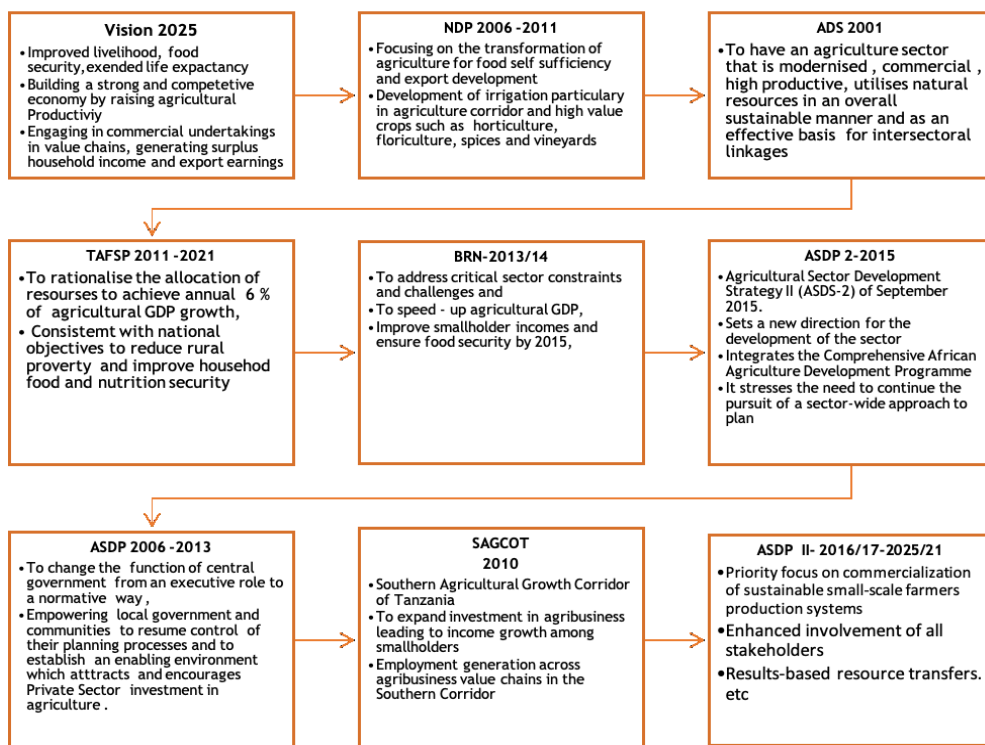
The vision envisages for agriculture to be transformed from a low productivity agricultural economy to a semi-industrialized one, led by modernized and highly productive agricultural activities which are effectively integrated and buttressed by supportive industrial and service activities in the rural and urban areas³.

2.3.1 Government initiatives for the transformation of Agricultural Sector

The Government of Tanzania developed and implemented various long and medium-term policy frameworks for the transformation of the agricultural sector to make it more resilient.

³ Government of URT- 1999-The Tanzania Development Vision 2025. Dar es Salaam.

Figure 2.2: Various Government interventions for improvement of agriculture productivity



Source: Agricultural Development Programme, 2016-2021

2.3.2 Agricultural Sector Development Strategy (ASDS)

The Agricultural Sector Development Strategy (ASDS) was prepared in 2001 as a step forward towards laying the foundation for the ways to develop the agricultural sector, and the national economy at large as well as poverty reduction especially in the rural areas.

The primary objective of ASDS was to create an enabling and conducive environment for improving profitability of the sector as the basis for improved farm incomes and reduction of rural poverty in the medium and long-term. The aim of ASDS was to achieve a sustained agricultural growth rate of 5 per cent per annum primarily through the transformation of the sector from subsistence to commercial agriculture. In order to operationalize ASDS the Ministry of Agriculture introduced /initiated the *Agricultural Sector Development Programme (ASDP)*.

2.3.3 Agricultural Sector Development Programme (ASDP)

ASDP is the programme framework for developing agricultural sector and operationalizing the Agricultural Sector Development Strategy (ASDS). It is part of the operational response to a set of policies and initiatives designed to re-orient and re-invigorate the national economy. ASDP is the main tool for central government for coordinating and monitoring agricultural development and for incorporating national reforms. It also establishes operational linkage between the Agricultural Sector Lead Ministries (ASLMs) and other national stakeholders as well as introducing more effective management systems.

2.4 Legal and Regulatory Framework

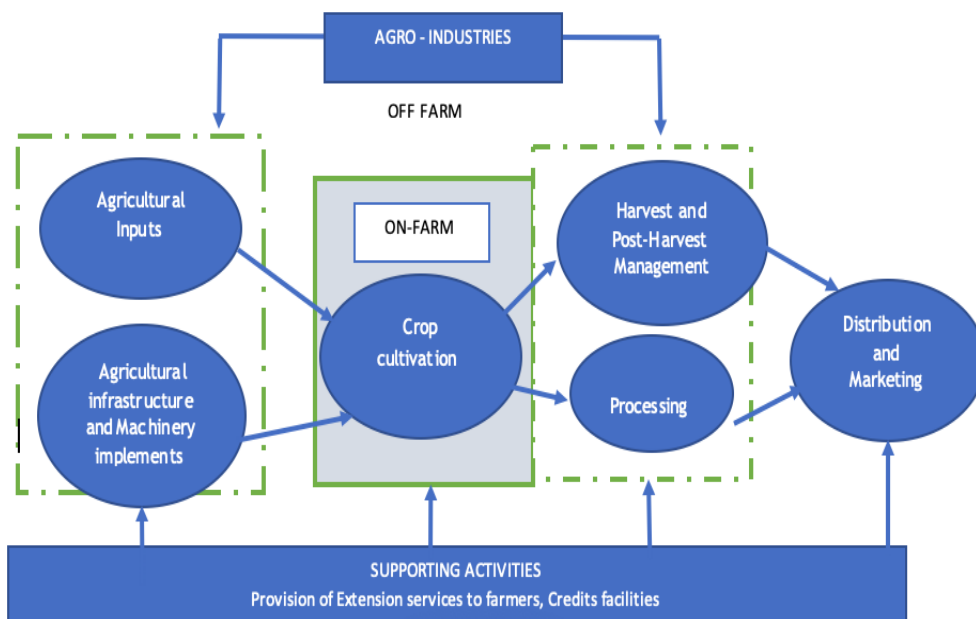
Agriculture is mainly governed by the National Agriculture Policy of 2013. The main objective is to develop an efficient, competitive and profitable agricultural industry that contributes to the improvement of the livelihoods of Tanzanians and attainment of broad based economic growth and poverty alleviation.

There are various laws and regulations governing the management of agriculture in the country; these are the following: Plant Protection Act No 13 of 1997, Protection Regulations of 1998, Seed Act No.18, 2003, Fertilizers Act of 2009, and its Regulations of 2011 revised 2017, and other acts and regulations relevant for various agricultural issues.

2.5 Model for Agricultural Strategic Development in Tanzania

Strategic Agricultural Development in Tanzania involves the strategic supply of agricultural inputs (fertilizers, pesticides and improved seeds) to well-trained farmers. This enables farmers to have a fertile and productive field and ultimately an increased harvest with quality. A strategic post-harvest management is required to reduce post-harvest loss. This is possible when farmers have access to market and yield processing to add value.

Figure 2.3: Model for agricultural strategic development



2.6 Need for Audit in the Agricultural Sector

The National Audit Office of Tanzania decided to carry out performance audit in seven different areas of the agricultural sector. These areas are of significant importance since they can trigger the government of Tanzania to grasp opportunities offered by the industry. These seven areas are explained below as follows:

First, provision of extension services to farmers is certainly an important factor of production because it is capable of transforming all the other factors for the betterment of human life and human welfare. Hence, by building capacity of farmers in agriculture, the country can maximize benefits accruing through transformation of agricultural sector. Extension, research, and training play pivotal roles in linking farmers to new technologies, information and knowledge that are central in enhancing agricultural productivity.

Second, management of agricultural crop pests and diseases outbreak insists on the control mechanisms for managing outbreaks of agricultural crop pests and diseases and putting together preventive mechanisms for managing outbreaks of agricultural crop pests and diseases. If not controlled, the agricultural crop pests and diseases causes socio-economic implications in the country. In agricultural areas, crops pests and disease outbreaks contributed to decline in agricultural productivity.

Third, management of pesticides since it allows the country to efficiently manage the quality of pesticides to safeguard against human health risks and environmental degradation in order to ensure sustainability of land productivity.

Fourth, provision of support to SMEs which are among the key players and require special attention to spearhead growth of the economy by stimulating socio-economic development of the country. Small and Medium-Sized Enterprises (SMEs) are the backbone of growth in production, employment and innovation. It is therefore crucial for the government to provide an enabling environment for agricultural SMEs in the country.

Fifth, availability and accessibility of agricultural inputs have a huge impact on the productivity of agricultural produces. The backbone of any agricultural revolution is access of farmers to modern agricultural inputs⁴. Agricultural inputs help to increase crop intensity, yield and improve quality of land thus ensuring better returns to the farmer. Agricultural inputs also reduce risks due to weather and thus minimizing post-harvest wastages⁵. Fertilizer improves soil texture, recycles nitrogen and introduces essential bacteria to the land which improves productivity.

Finally, availability and management of irrigation schemes at the outset is an essential input in accelerating the irrigation growth rate and helpful in meeting the other input targets. Since Irrigation and its technology is complex, its management requires well experienced and skilled personnel. Therefore, it is important to ensure that quality infrastructure in the irrigation activities meet the needs of the agriculture industry.

2.7 Key Players in the Agricultural Sector in Tanzania

There is a number of key-stakeholders in the area of agriculture in Tanzania. These stakeholders are grouped into five main categories which include: the sector ministry, oversight institutions, international organizations, agricultural research institutions and institutions which provide support to the industry.

Sector Ministries: This includes mainly the Ministry of Agriculture which is charged with responsibility to oversee the agricultural sector in the country. Among other duties the Ministry of Agriculture is formulating and reviewing Government policies and regulations in the agricultural sector. President's Office - Regional Administration and Local Government (PO-RALG) is responsible to oversee the implementation of the National Agricultural Policy at local Government level. The Regional Secretariats are responsible to create conducive environment for Local Government Authorities (LGAs)

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

⁵ <https://www.slideshare.net/JitinKollamkudy/agricultural-inputs-46989116>

to operate efficiently, assist LGAs in capacity building, provide technical support to LGA's and monitor the performance of LGAs. The Local Government Authorities (LGAs) have the role to facilitate technical coordination between the sector Ministries and the citizens.

Oversight Institutions: These include institutions such as Tanzania Fertilizers Regulatory Authority (TFRA), Tanzania Official Seed Certification Institute (TOSCI), Tanzania Food and Drug Authority (TFDA), National Environmental Management Commission (NEMC) and Tropical Pesticides Research Institute (TPRI). These government institutions have the duty of overseeing specific areas such as day to day operations of farmers, Extension Officers, Agriculture Officers, Agro-dealers, Agro Processors and other agricultural stakeholders.

International Organizations: This includes institutions such as Food and Agriculture Organization (FAO), United States Department of Agriculture (USDA), and African Development Bank (AfDB) which are responsible for co-financing of the Agricultural sector, strengthening the Agricultural Routine Data System (ARDS) and supporting the Monitoring and Evaluation of Agricultural activities.

Tanzania Agricultural Research Institute (TARI): These include Agricultural Research Institute located throughout the country. The institute is responsible for research under the Division of Research and Training (DRT) of the Ministry of Agriculture and Food Security. The Institute is also responsible for the promotion and coordination of agricultural biotechnology activities in the country. Its mandate is to conduct and promote research for the development of various crops along within various agricultural zones in the country.

Institutions which provide support to the industry: These include institutions such as the Ministry of Education, Science and Technology and Ministry of Labour. These Ministries through their training institutions such as universities, colleges and vocational training centres have the role of building the capacity of the Tanzanians to engage in agricultural activities. On the other hand, they have the responsibility to enforce labour laws in the same industry. Ministry of Finance and Planning is responsible for fiscal management and ensuring appropriate management of revenues accrued from agricultural activities. The Agricultural Input Trust Fund operates under the Ministry of Agriculture.

2.8 Performance Audit Reports Conducted

The National Audit Office conducted six Performance Audits and one Follow-up audit in the area of agriculture. The intention of the National Audit office is to ensure that there is enhanced performance in those areas taking into account its importance to the country's economy.

These performance audits focused on: provision of extension services; management of crop pest and diseases outbreaks; management of pesticides; provision of support to SMEs; availability and accessibility of agricultural inputs; and construction of irrigation schemes for agricultural development.

The audit findings and conclusions from these six Performance Audits and one Follow-up audit have been used to develop the general overview of the entire agricultural sector in the country which is presented in the remaining chapters of this report.

CHAPTER THREE

AVAILABILITY OF AGRICULTURAL INPUTS

3.1 Introduction

The availability of good quality agricultural inputs remains vital in the country as agricultural sector is the backbone of the economy in the country. Accessibility and availability of quality agricultural inputs in the country ensure the sustainable increase in productivity at both individual and national levels. Also, agricultural inputs reduce risks due to weather and thus minimizing post-harvest wastages.

This chapter covers issues relating to the availability of agricultural inputs such as seeds, fertilizer and pesticides in the country. The main actor involved in ensuring availability of good quality agricultural inputs in Tanzania is the Ministry of Agriculture through Tanzania Official Seeds Certification Institute (TOSCI), Tanzania Fertilizers Regulatory Authority (TFRA), Agricultural Seed Agency (ASA) and Tropical Pesticides Research Institute (TPRI). These institutions under the Ministry of Agriculture carry-out functions including regulating and enhancing accessibility of good quality agricultural inputs through registration, trainings and conducting inspection activities to inputs producers and agro-dealers in seeds, fertilizers and pesticides.

Findings are categorized into demand establishment; distribution of agricultural inputs and monitoring and evaluation of availability and accessibility of agricultural inputs in the country. The following sections provide details of the assessment of the availability of agricultural inputs in the country:

3.2 Demand Forecasting of Agricultural Inputs was not conducted effectively

The process of establishing demand for agricultural inputs is not conducted effectively so as to ensure the availability of agricultural inputs against 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 which show the discrepancies between the agricultural inputs demanded and that which is available/supplied.

3.2.1 Limited sources of data for establishing demand for 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 for 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 which 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.

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 up to the year 2018, the Ministry of Agriculture did not conduct any baseline survey to understand the total demand of agricultural inputs by farmers according to ecology and number of farmers. The survey helps to establish demand of the agricultural inputs in the country but it was observed that the Ministry of Agriculture only came-up with hypothetical demand which is used to fulfil farmers' demands on agricultural inputs.

The Ministry stated further that conducting baseline surveys is expensive in terms of time and costs as it must involve all actors from farmers, village, ward, district, regional levels and thereafter has to be compiled nationally.

Regarding fertilizers, TFRA through bulk procurement system was required to establish the annual demand in order to procure the fertilizers needed in the country. But, fertilizers 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.

We noted that there were no baseline surveys conducted to assess seeds suitability depending on the agro-ecological zones. Currently, Seeds were 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.

Further, with respect to pesticides, it was observed that about 90 percent of pesticides used in the country were imported. The importation of needed pesticides in the country was highly influenced by the market forces of demand and supply. No baseline survey was conducted by the Ministry of Agriculture that could be used to guide the importation or production of the pesticides used in the country. Consequently, non-conducting of baseline surveys may have affected the country's agricultural productivity as farmers were limited in their choices of quality inputs.

3.2.2 Inadequate Demand Estimation Process

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

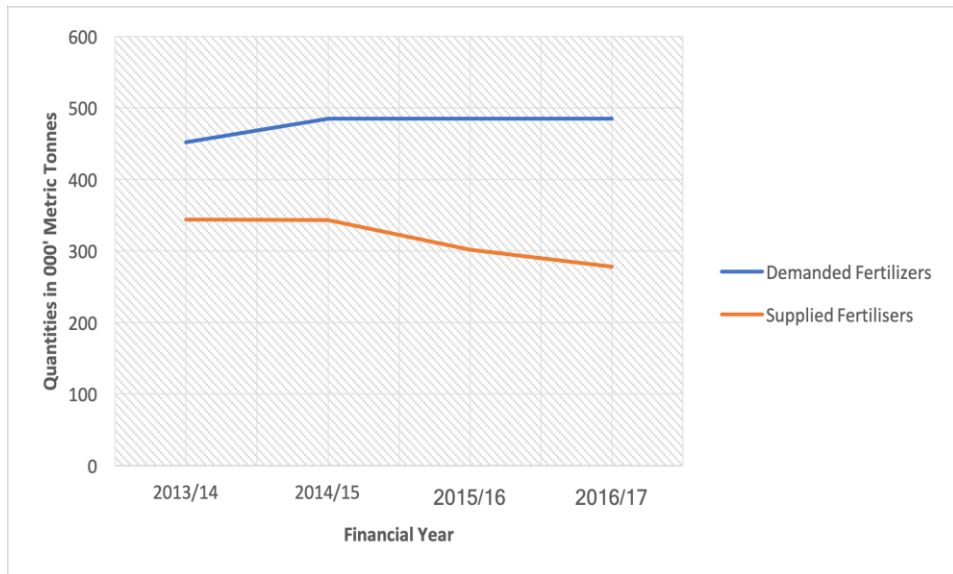
Agriculture through TOSCI, TFRA and TPRI do not have a proper estimations methodology that is used to estimate the demand for agricultural inputs.

On the one hand, there is no model, software or other more accurate methodology that is used in estimating the figures for agricultural inputs demand forecasting. 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 will show the demanded and used inputs all over the country. On the other hand, the demand estimation process did not involve all actors needed in the process. In order to have effective annual demand, all actors from different levels from farmers, village, ward, district, regional up to Ministerial level should be involved. Also, there should be annual involvement of farmers during the process of estimation of demands on agricultural inputs such as seeds and fertilizers needed for their agricultural activities.

There were inadequate involvements of farmers 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 LGAs⁶, it was noted that due to unavailability of extension officers, information about annual demands was not reliably determined. Consequently, there was a clear shortage of agricultural inputs supplied in the country from the visited LGAs hence farmers were unable to access agricultural inputs such as Sulphate Manganeseine, Nitrable, MOP and SEEDCO 719. Therefore, it was noted that the agricultural inputs available in the market do not suffice the actual demand of the inputs. Figures 3.1 and 3.2 provides the analysis of the variation of the amount of inputs demanded against what was supplied.

⁶ Hai DC, Mbeya DC, Kalambo DC and Masasi DC.

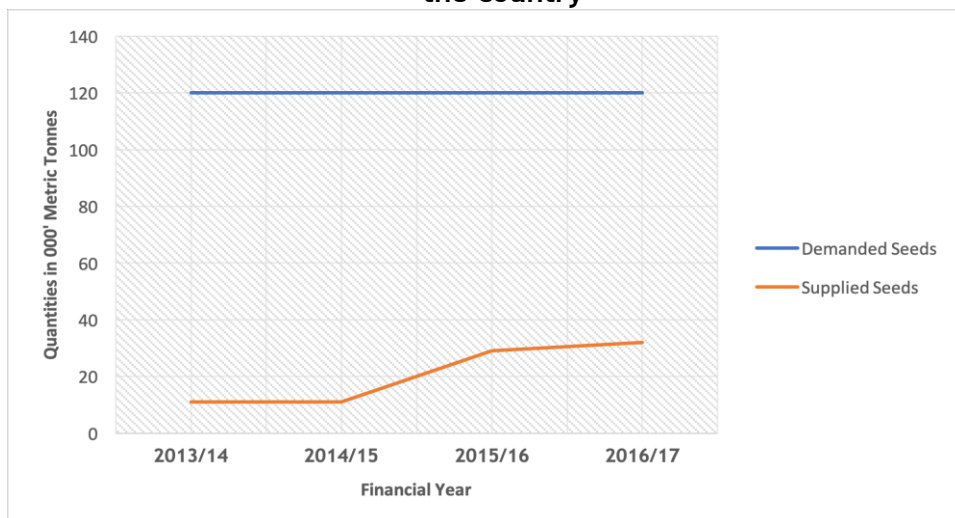
Figure 3.1: Comparison between demanded against supplied fertilizers in the country



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

Figure 3.1 above shows that there is a significant variation between the amount of inputs 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 percent of the actual demand for fertilizers was met.

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

Figure 3.2 revealed that the estimates for demand of seeds have been constant for all of 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 low pace until 2016/17 where the supply met only 27 percent of the demand for seeds.

On the other hand, the accuracy in estimating demand for pesticides increased from 12 percent in 2013/14 to 58 percent in 2015/16. However, the rate was still far below the actual demand and therefore created a deficit in the supplies for inputs which could affect the capacity of farmers in fighting crop diseases and increasing production and productivity.

During the past 4 years, the average supply of agricultural inputs including seeds, fertilizers and pesticides met only 39 percent of the total demand.

3.2.3 Reporting of the demands forecasted does not ensure timely availability of agricultural inputs

Our audit noted that demand establishment process does not start right from farmers in the village who are supposed to identify all varieties of agricultural inputs needed in association with Village Agricultural Extension Officer (VAEO). The Ward Agricultural Extension Officers (WAEO) are 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 regulatory authorities who adjust those demands so as to reflect the reality of the existing situation. LGAs submit their actual demand to regional secretariat at the end of each financial year. Agricultural inputs whose demands have not been timely forecasted are the following:

For the Fertilizers: TFRA officials pointed out that some LGAs failed to establish their demand on time therefore information from those LGAs was not included in the demand establishment process. For example, in Rukwa Region annual demand was reported in June and commencement of agricultural season was in August. The time spent in importation or production and distribution of agricultural fertilizers do not guarantee their availability before the commencement of agricultural season.

For Seeds and Pesticides: The review of annual demands from the visited LGAs revealed that the submission was done at the end of June each year. But, it was observed that due to variation in time of the commencement of agricultural seasons, this period is not realistic to some of the regions. Untimely reporting of demand from LGAs led to delays in compiling the annual demand hence some farmers were not timely supplied with the required seeds or pesticides.

3.3 Inefficient distribution of quality agricultural Inputs

The functioning of the distribution system is not efficient enough to ensure timely supply of quality agricultural inputs to farmers. The distribution system was highly dependent upon the private side on which producers or importers distribute their agricultural inputs through local distributors and agro-dealers. The distribution system comprises noticeable weaknesses on areas of timeliness, quality and price controls that affect the essence of efficient system for distribution of agricultural inputs to farmers. The following sections provide details of the weaknesses observed in the distribution system for agricultural inputs:

3.3.1 Untimely Supply of required Seeds, Fertilizers and Pesticides

Interviews with officials from TOSCI and TFRA revealed that agricultural inputs should be available to farmers one month before the commencement of the agricultural season. In the visited LGAs it was revealed that there were a delay in supplying seeds, fertilizers and pesticides. The delay ranged from 3 to 5 months after commencement of the agricultural season. This delay was experienced during the National Voucher System which was adapted to distribute agricultural inputs to farmers. Further analysis of the current situation for each agricultural input revealed the following:

(a) Seeds and Fertilizers

The Ministry of Agriculture used the voucher system in 2015/16 to distribute the required seeds and fertilizers needed in the country. There was a delay in timely availability of such inputs caused by infrastructural problem and untimely distribution of vouchers needed to procure such agricultural inputs. Poor infrastructure also contributed to the increase in costs of distribution and the additional costs were incurred by farmers especially during the rainy season.

Untimely supply was also caused by the inability and low commitment by agriculture inputs local producers. Although local producers guarantee timely availability of inputs compared to importation which might be affected by delays as it involves procurement process, transportation into the country, and distribution to the regions from the port of entry which very often takes long, however, their production capacity and supply of the inputs were considered unreliable. That was due to low capacity of Agricultural Seeds Agency (ASA) in producing seeds to ensure timely supply of seeds in the country. The seeds production capacity of ASA does not guarantee timely availability of quality seeds to farmers.

The production of seeds at ASA did not sufficiently address the actual demand of seeds in the country. The ASA targeted to produce 30 percent of the total annual demand of quality seeds in the country annually. During the period between 2015/16 to 2017/18, the maximum productivity noted was in 2017/18 whereby ASA managed to produce 2.2 percent of the planned target of producing 36,000 Metric Tonnes.

Under production of quality seeds by ASA was a result of lacking productive seeds farms. It was noted during the audit that only one out of the nine farms owned by ASA which were used to produce various seeds needed in the country was actually producing seeds throughout the year. The one productive farm was using irrigation scheme while the remaining 8 farms were depending on seasonal rainfall. In addition, the audit also noted that there was underutilization of the arable land in ASA farms. Out of 8,500 hectares of arable land owned by ASA, only 4,020 hectares which is equivalent to 47 percent were utilized for production of seeds. Under production of seeds intensified the shortage of the quality seeds demanded by farmers in the country and forced them to use local or low quality seeds which did not guarantee maximum productivity.

(b) Pesticides

There was untimely distribution of pesticides used in the country through cooperatives unions as there was unavailability of needed pesticides in the country. For example, Cashew nut Board of Tanzania (CBT) had distributed over 12,000 tons of pesticides to farmers across the country for the 2017/18 agricultural season but farmers did not access timely the required pesticides

as evidenced by Cashew nut farmers from Mtwara. More than 90 percent of pesticides used in the country are imported. The common pesticides used in the country were for few cash crops such as Cashew nut, Cotton and Tobacco. Consequently, farmers did not access good quality agricultural inputs on time, hence they alternatively opted to use the available inputs of lesser quality which affected productivity of their agricultural crops.

3.3.2 Supply of low quality, fake, unauthorized, unsuitable inputs to farmers.

TOSCI, TFRA and TPRI were required to ensure quality of the distribution of agricultural input such as seeds, fertilizers and pesticides in the country.

Seeds

During the audit it was revealed that there were supply of unviable maize seeds which failed to germinate such as Pioneer 2859, DKC 90-89, SC 627 and SC 403, and viable maize seeds that grew but did not produce the intended results, Pioneer 3253 and SC 625. There was also the supply of seeds which were not re-tested after 7 months as required. This was caused by inadequate inspections that were conducted by TOSCI. Inspections conducted do not cover all entry points, agro-dealers and farms.

Fertilizers and Pesticides

Fertilizers distributed also were supplied without considering the suitability of such soil contents. Also, there were supply of illegal pesticides in the country such as Kumulus, Mo - Karatep, Movil, Mo -Durs, Movor, Quickphos, Amine and Mocron 720 EC. Also, the agricultural input sellers have the tendency of repacking or opening of the agricultural input packages such as bags or plastic containers the practice of which reduces its efficacy. The following photos revealed the existing behaviour of opening pesticides and fertilizers from their containers or bags.

Photo 3.1: Opening of fertilizers and Pesticides in the visited LGAs



Source: Auditors' Observations in February, 2018 and November, 2019

Photo 3.1 shows the opened pesticide in a plastic container in Morogoro Rural DC and opening of fertilizers in Hai DC. The effects of opening up the already packed and sealed pesticides and fertilizer include reducing efficacy of such inputs and therefore become ineffective when they are applied to the crops. The supply of low quality agricultural inputs reduces crop yields and hence causes economic losses both to farmers and the national as well.

3.3.3 Unaffordable Price of Agricultural Inputs Supplied

The National Agricultural Policy of 2013 requires the Ministry of Agriculture to ensure access to modern agricultural inputs by farmers. Farmers from the visited LGAs explained that the price of agricultural inputs were very high. This is because there was inadequate implementation of subsidies given on agricultural inputs planned so as to ensure that farmers were provided with the required inputs. It was further noted that the government had a commitment of paying 50 percent of TZS 200,000 worth agricultural inputs to farmers as subsidies. But, it was further noted that, the government managed to contribute some amount to the maximum of TZS 78,500/= which is equivalent to 39 percent of the total contribution. Hence, farmers were required to contribute 61 percent instead of 50 percent of the market price of the agricultural inputs supplied.

Also, the agricultural prices were observed to be high compared to agricultural yields in 2018. It is estimated that one farm hectore produces 10 bags of maize whereby each bag is sold at a price of TZS 30,000/-which in total is TZS. 300,000/=. The total approximated costs of agricultural inputs is TZS. 200,000/= which is about 67 percent of the farmers total income per hectore.

The audit also noted that there was limited access to credit by farmers to facilitate the purchasing of agricultural inputs during the agricultural seasons. The loans conditions require farmers to have securities and to be in a registered group of farmers. The audit noted that individual farmers were neglected from such conditions also the financial institution loans interest of 20 percent annually was too high to most of the farmers. As a result farmers opted to use less expensive agricultural inputs which did not guarantee quality or they used local seeds hence the agricultural crop yield was low.

3.3.4 Inadequate Mechanism for regulating price of Agricultural inputs

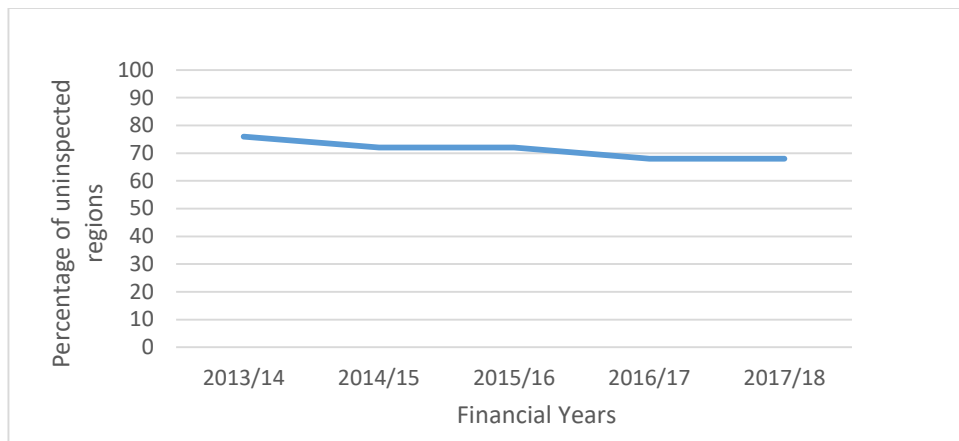
There was inadequate mechanism for regulating price of good quality agricultural inputs in the country as elaborated below:

Fertilizers

Section 4 of the Fertilizer Act, 2009 requires TFRA to regulate the price of fertilizers based on the appropriate methods. The audit teams noted the information about indicative prices do not reach all levels of informants such as Regional Secretariat, Local Government Authorities, Wards and village levels. Inspection reports from TFRA revealed that there were some agro-dealers who were not aware about the indicative prices established. Also, farmers were unaware of the indicative prices. We noted that only 17 percent of farmers in the visited LGAs were aware about the indicative prices established.

Under Bulk procurement system, TFRA is required to conduct regular inspections to ensure agro-dealers complied with the indicated prices. But, due to inadequate conduct of inspection activities, overstating of the fertilizers prices by agro-dealers in some regions has been a common phenomenon. This is because only few regions are annually covered by the inspections conducted by TFRA. Figure 3.3 shows the number of regions not covered by TFRA inspections from 2013/14 to 2017/18.

Figure 3.3: Percentage of regions not covered by TFRA’s inspection from 2013/14 to 2017/18



Source: Annual plans and implementation reports from 2013/14 to 2017/18

Figure 3.3 shows that there was an increase in the inspection activities conducted by TFRA from 2013/14 to 2017/18. However, there was a slight decrease in the percentage of the regions un-inspected which meant that the inspections conducted by TFRA were not increasing sufficiently. The percentage of un-inspected regions dropped from 76 percent in 2013/14 to 68 percent in 2017/18. This was due to an increase in release of amount budgeted for inspection activities. As a result, Agro-dealers tend to overstate the price of fertilizers more than they are required to sell. Based on the inspection reports reviewed, it was noted that in some of the LGAs, prices for fertilizers increased up to 33 percent above the indicative prices set by TFRA.

Seeds and Pesticides

Currently, there is no formal system for regulating the prices of seeds and pesticides in the country. However, the audit team noted that seeds availability depended on the subsidies provided by the Ministry of Agriculture or with the minimum price set by the government seed producer namely, Agricultural Seed Agency (ASA) which is commonly below the market prices for seeds. On the other hand, pesticides used to control diseases on cotton, tobacco and cashew nuts were subsidized and distributed to farmers who were under crop cooperative unions at a price below the market prices.

3.3.5 Presence of input sellers who do not meet the required standards of supplying inputs

Our audit noted the existence of various input dealers who did not comply with the registration and business related requirements for selling seeds, fertilizers and pesticides as narrated below:

Non-compliance with registration requirement

According to the Fertilizers Act, 2009, Plant Protection Act, 1997 and Seeds Act, 2003, any seller shall be registered before operating any agricultural input business. From the visited regions, it was noted that there were presence of agricultural inputs supplied by dealers who were unregistered; unauthorized; unlicensed; and seasonal in the market. Also, there were presence of on-season input sellers who were highly visible in Mbeya Region. This was recalled following the inspection that was conducted in year 2014/15 to 37 agro-dealers where it was revealed that 19 equivalent to 51 percent were seasonal input sellers. Also, inputs were supplied to farmers through weekly auctions conducted in the visited LGAs. The inputs were sold in an open space contrary to the legal requirements as observed in Photo 3.2 below.

Photo 3.2: Selling of agricultural inputs in the open space at LGAs doing weekly auction



Source: Auditors' observation, January 2018

Photo 3.2 shows inputs pesticides and liquid fertilizers being sold in an open market by unregistered seller without any technical know-how on their usage. These unregistered sellers were also unable to transfer knowledge to the farmers when requested by the farmers who bought the agricultural inputs.

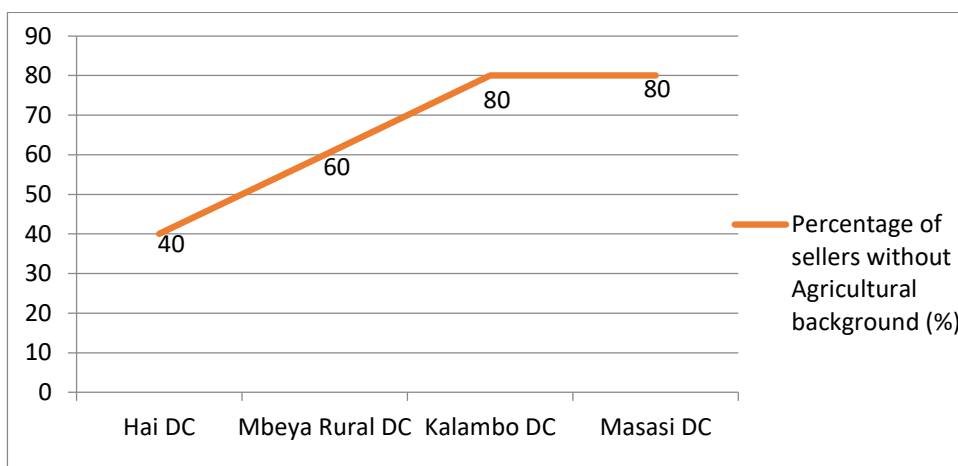
Presence of the cumbersome registration procedures and high costs for registration was said to be the reasons that limit some agro-dealers to register with the relevant regulators such as TOSCI, TFRA and TPRI so as to be licensed to conduct the agricultural input business. This being so, there were supply of agricultural inputs of low quality which also did not comply with the storage conditions as observed in photo 3.2.

Non-compliance with business related knowledge requirements

According to Plant Protection Act, 1997 and Seeds Regulations, 2003, input sellers shall be equipped with knowledge, ability and appropriate facilities to maintain the quality and viability of the agricultural input offered for sale. Through the visits made by the audit team to the LGAs, it was noted that there were presence of input sellers who had no agricultural knowledge as well as not trained either by TOSCI, TPRI or TFRA. This led to the failure of agro-dealers to provide knowledge to farmers.

It was further observed that in Kalambo DC and Masasi DC up to 80 percent of the visited input sellers have no agricultural related background as presented in figure 3.4 below.

Figure 3.4: Percentage of sellers without Agricultural knowledge



Source: *Auditors' analysis, 2018*

As a consequence, agro-dealers were unable to provide knowledge to farmers on the applicability of the agricultural inputs.

3.3.6 Insufficient number of agro-dealers in the country

In order to ensure timely availability of agricultural inputs in the country local manufacturers, importers, distributors and agro-dealers should be present to render that service. Our audit noted uneven distribution of agro-dealers and distributors in the country, a situation which results into non-availability or untimely supply of the required agricultural inputs in the country. It was observed that more than 90 percent of the pesticides and fertilizers used in the country were imported while about 40 percent of the quality seeds were also being imported. There were some challenges to ensure timely availability of required quality inputs to farmers based on the geographical and number of farmers served.

Insufficient number of agro-dealers and distributors compared to the farmers served

Regulatory authorities such as TOSCI, TFRA and TPRI were responsible for regulating distribution of agricultural inputs to farmers in the country. In the visited regions, our audit noted that the number of agro-dealers and distributors was comparatively not enough to cover all needs of the farmers in the respective villages. In the four regions visited, it was further noted that the ratio of agro-dealers to farmers was 1:42,000 while the ratio of distributors to villages was 1:792. That means, on average one agro-dealer served up to 42,000 farmers annually and one distributor served up to 792 villages in the region. In addition, in the same four regions that were visited by the audit team there were 16 LGAs that did not have distributors of good quality agricultural inputs.

Insufficient number of agro-dealers and distributors compared to the geographical coverage served

From the visited regions, our audits revealed that the number of agro-dealers and distributors were widely scattered hence they were not able to cover and cater for the needs of all the geographical areas in the respective villages. We noted that one agro-dealer covered up to 643 square kilometers in the region and one distributor covered up to 17,000 square kilometers. Therefore, in the visited LGAs, it was also noted that farmers tend to travel in a range of about 20 km to 100 km searching for quality agricultural inputs. This is due to the fact that some agro-dealers were not located in the remote areas where farmers live and work.

3.4 Monitoring and evaluation of availability and accessibility of agricultural inputs in the country

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. This activity is conducted by Monitoring and Evaluation Unit under the Directorate of Policy and Planning at the Ministry of Agriculture.

3.4.1 Inadequate Monitoring and Evaluation of the performance of TFRA and TOSCI by the Ministry of Agriculture

Our audit noted inadequate monitoring and evaluation of activities being carried-out by the Ministry of Agriculture. The Ministry of Agriculture is required to quarterly conduct Monitoring and Evaluations of its institutions such as TOSCI and TFRA. In so doing, the Ministry will be able to identify key indicators used to measure performances such as adoption of agricultural technologies (Improved seeds (crops) and use of fertilizer), number of extension staff in the country, total agricultural research spending as a share of agriculture to the country's GDP. For the period

covered by the audit, there were only monitoring and evaluation reports related to Ward Agricultural Resource Centres (WARCs) conducted in 2018. Activities related to fertilizers and seeds were inadequately prioritized by the Ministry of Agriculture in its monitoring work. Inadequate monitoring was caused by inadequate prioritization of Monitoring and Evaluation of activities by the Ministry of Agriculture.

3.4.2 Inadequate Monitoring and Evaluation on Seeds distribution activities by TOSCI

There was inadequate Monitoring and Evaluation by the Ministry to TOSCI HQ and also by TOSCI HQ to Zonal Offices and authorized inspectors available in the LGAs as described below:

Non-conducting of Monitoring and Evaluation to Zonal Offices

TOSCI has got four zonal offices which include Northern, Southern, Eastern and Lake zonal offices. During the audit, it was noted that there was no Monitoring and Evaluation being conducted by TOSCI to its zonal offices to assess their performances on the provision of quality activities such as inspection to the agro-dealers, farms, entry points. The noted reasons for such non-conducting of M&E include:

- a) *Unavailability of M&E guidelines:* There were no Monitoring and Evaluation guidelines established that can be used to assess zonal performances; and
- b) *Absence of M&E plans:* there were no established plans that were observed to ensure tracking of the implementation status of the institute's objectives through its zonal offices.

Thus, due to inadequate monitoring, TOSCI could not properly identify performances of its zonal offices including challenges they were facing during their provision of services to farmers.

Non-conducting of Monitoring and Evaluation to LGAs

TOSCI also did not conduct M&E on the LGAs' authorized inspectors as there was no terms of reference that define what authorized inspectors should perform. LGAs' authorized inspectors were trained to assist TOSCI to conduct inspection within 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 that were established by TOSCI to assess the performance of LGAs' authorized inspectors. Hence, there was no means of measuring the performances of the authorized inspectors.

3.4.3 Inadequate Monitoring and Evaluation conducted by TFRA

It was noted that no monitoring and evaluation was done by TFRA to assess performance of its authorized inspectors located in the LGAs. Moreover, there were no reporting mechanisms that were used by TFRA to assess the activities performed by authorized inspectors despite that these inspectors were involved in the inspection of fertilizers in their respective LGAs.

The reasons for inadequate monitoring and evaluation were due to the absence of guidelines that could be used by TFRA to conduct Monitoring and Evaluation of its authorized inspectors in the LGAs. Also, there was no M&E plan established by TFRA to assess performance of the authorized inspectors. For this reason, there was no means of measuring the performances of the authorized inspectors. Also, there was untimely identification of challenges that are facing those inspectors on the provision of their services within their respective LGAs.

CHAPTER FOUR

QUALITY CONTROL OF AGRICULTURAL INPUTS

4.1 Introduction

This chapter presents findings on the management of the quality control of agricultural inputs in the country. Agricultural inputs covered under this chapter included pesticides, seeds and fertilizers.

Findings are categorized into registration of agricultural inputs and sellers; inspection to agricultural inputs sellers; and dissemination of knowledge on proper uses and storage of agricultural inputs to farmers and sellers.

Three performance audit reports have been used, to sum up issues addressing quality control of agricultural inputs these include:

- Performance audit on the management of pesticides;
- Performance audit on the management of availability and accessibility of good quality Agricultural inputs; and
- Performance audit on the provision of extension services to farmers.

Key actors involved in the management of quality control for agricultural inputs included: The Ministry of Agriculture, Tropical Pesticides Research Institute (TPRI), Tanzania Fertilizer Regulatory Authority (TFRA) and Tanzania Official Seed Certification Institute (TOSCI) which are responsible for quality control of pesticides, fertilizer and seed respectively.

4.2 Inadequate Registration of Agricultural Inputs and Agro Dealers

The audit noted that interviewed official from the Ministry of Agriculture pointed out that there were weaknesses in the registration of agricultural inputs. This was verified by availability of unregistered agro dealers and agricultural inputs in the market as detailed below:

4.2.1 Inadequate Registration of Pesticides

Reviewed information from both the Ministry of Agriculture and TPRI showed that registration of pesticides was not adequately conducted due to inadequate implementation of pesticides registration activities.

i) Health and Environmental Risk Assessment were not adequately Conducted

It was noted that not much was done by the Ministry of Agriculture and TPRI in conducting health and environmental assessment to ensure safety on the supplied pesticides.

It was reported that, before the registration, TPRI conducted toxicological, mechanistic studies and related chemicals to ensure that registered pesticides are safe for use. It was further reported that after the registration, TPRI conducted Health Assessments to test pesticides exposures to farmers.

The audit team reviewed a report on Monitoring of Farmers Safety of 2015 issued by Tropical Pesticides Research Institute for the purpose of establishing the extent of post health assessment conducted to farmers. Based on the conducted review, it was noted that there were fewer efforts on assessing post health to farmers to identify health risk. This was despite the increase in the use of pesticides among farmers in the country and occurrences of poisoning cases due to pesticides.

The reviewed report showed that for the three years from 2015 to 2017, the post health assessments were performed to only 992 farmers. Out of these 992 tested farmers, 359 equivalent to 36 percent were detected to have cholinesterase levels below the acceptable tolerance of 24.5 U/G per gram Hemoglobin.

It was further noted that, small scale farmers who account for almost 81 per cent of the whole population in the country were not well covered during the Post Health Assessment conducted by TPRI. Testing was mainly done to farmers employed in large plantations to check whether they met the requirements of exporting agricultural produce to the European, Asian and American markets.

On the other hand, the report further showed that few environmental impact assessments were conducted on the use of different types of pesticides. The results of the conducted assessments showed the presence of DDT which was considered to be higher than the recommended environmental permissible limits for soil standards and unfortunately, there were no remedial measures that have been taken to arrest the situation.

ii) No Periodic Update on the List of Registered Pesticides

It was established that the list of registered pesticides was not regularly updated contrary to the requirement that the list should be updated at least twice a year. It was reported that sometimes it took one to two years to update the list. The audit team noted that the List of pesticides that was in use during the time of conducting this audit was released in June, 2015.

Table 4.1 shows the status of updating the lists of registered pesticides for the last seven years.

Table 4.1: Lists of Registered Pesticides from 2010/11 to 2017/18

Financial Year	Status of Updating	Date Updated
2011	Updated	November, 2011
2012	Not updated	-
2013	Updated	April, 2013
2014	Updated	January, 2014
2015	Updated	June, 2015
2016	Not updated	-
2017	Not Updated	-

Source: List of Registered Pesticides from 2010/2011 to 2017/2018

Table 4.1 indicates that there is a failure to periodically update the list of registered pesticides. It was also noted that it took 9 months up to 2 years to update the list of registered pesticides.

4.2.2 Inadequate quality control procedures for Seeds and Fertilizers

Based on the visits conducted to farmers in four visited District Councils of Hai, Mbeya Rural, Masasi and Kalambo, it was noted that there were a number of complaints on the quality of seeds and fertilizers supplied in the market. The complaints were on the presence of unviable seeds and presence of viable seeds that grow but do not produce the intended result. Also, there were complaints regarding availability of substandard fertilizers. For instance, in Kilimanjaro and Arusha region specifically Hai, Meru and Moshi Districts there were supply of maize seeds namely Pioneer 2859, DKC 90-89, SC 627 and SC 403, which had no germination capacity as confirmed by TOSCI.

The audit further noted that the issued complaints were due to inadequate implementation of registration activities for seeds and fertilizers. For instance before 2017, the seed registration process took a long time as seeds were being tested in different farms from three agro-ecological zones in the country. Interviewed officials from TOSCI reported that this has contributed to inadequate compliance to the registration requirements for seeds.

4.2.3 Inadequate Registration of Agro dealers

Before 2017, registration activities for agricultural inputs and agro-dealers were conducted by the Ministry of Agriculture through Agricultural Input Section. Currently, the registration activities are done by Tropical Pesticides Research Institute (Pesticides sellers), Tanzania Fertilizers Regulatory Authority (Fertilizer sellers) and Tanzania Official Seed Certification Institute (Seeds sellers).

It was reported that there was non-compliance in the registration of Agro dealers in the country. This was evidenced by the presence of unauthorized seed, fertilizer and pesticides sellers operating in the country. There were over 50 percent of the agro-dealers who were not registered by TPRI, TFRA and TOSCI.

i) Inadequate registration of Seeds and Fertilizer Sellers

During the interview held with TOSCI officials, it was noted that during planting seasons, several numbers of seed sellers emerge to sell seeds to the farmers. Most of these sellers do not follow the standards that require them to become registered before opening their shops. It was also noted that these unregistered seed sellers lack important skills regarding seeds management. The sellers lack knowledge on types of seeds, seed ecology and how to handle seeds in different types of environment. Table 4.2 shows the number of registered and unregistered seed sellers for the period from 2015/16 to 2017/18.

Table 4.2: Unregistered Seed Sellers in the market

Year	Total number Seed Sellers	Unregistered Seed Sellers	%age of unregistered agro-dealers
2015/16	296	200	68
2016/17	104	20	19
2017/18	1321	300	23

Source: TOSCI registration status, 2015 to 2018

Table 4.2 shows that availability of unregistered seed sellers is still a challenge in the country. However, there was improvements which was caused by the removal of registration fee to seed sellers which increased the number of registered seed sellers. Furthermore, our review of inspection reports in respect of inspections conducted in March, 2018 by TFRA showed that there were unregistered fertilizer sellers but still sell and distribute fertilizers to farmers in their LGAs. This is despite the fact that registration costs were removed by the Government so as to encourage every input seller to comply with the registration and operating procedures of selling agricultural inputs.

ii) Inadequate registration of Pesticide Sellers

Plant Protection Act No.13 of 1997, requires pesticide sellers to be registered by TPRI before opening their shops. Based on the interviews held with officials from TPRI, it was noted that there were weaknesses in registering pesticide sellers due to presence of unregistered pesticide sellers.

Our audit verification during the visit to 6 LGAs⁷ revealed that there was availability of unauthorized pesticides sellers in the country. For instance, in Njombe Region there were 13 out of 19 pesticide shops that were not registered by TPRI. Similarly, the reviewed report on the Status of Pesticide Sellers at Itilima DC of 2017 that was prepared by the Department of Agriculture, Irrigation and Cooperatives, showed that there were 12 out of 17 pesticide shops that were operating without being registered by TPRI.

4.2.4 Factors Contributing to Inadequate Registration of Agricultural Inputs and Agro dealers

Contributing Factors for inadequate Registration of Pesticides

(a) Inadequate Procedures and Absence of Policies to Guide Registration of Pesticides

There was no developed policy document to guide the registration of pesticides in the country. The report further showed that the procedures used for registration needed some improvements because the Plant Protection Act No 13 of 1997 that has been used to establish those procedures is outdated due to changes that have taken place during the last 20 years.

According to the Act, for the pesticides to be registered it is supposed to be tested for three cropping seasons. Currently, this is a challenge due to changes of weather and science development that led to frequent pesticides replacement. But, the Plant Protection Act does not have a provision that allows first registration of pesticides without following the three cropping seasons.

(b) Failure to Conduct Committee Meetings on the Registration of Pesticides

The review of Minutes of the meetings for Pesticides Approval and Registration Technical Sub- Committee (PARTS) and National Plant Protection Advisory Committee (NPPAC) showed untimely conducting of the meetings for approval of pesticides to be registered.

It was noted that for almost a year there was no meeting conducted by the National Plant Protection Advisory Committee (NPPAC). This was due to inadequate and timely releases of funds. In turn it contributed to delay in registering a number of pesticides that were ready to be registered in the country.

⁷ Meru, Itilima, Urambo, Morogoro, Njombe and Masasi

Contributing Factors inadequate Registration of Agro Dealers

(a) Lack of Knowledge on Registration Requirements

It was reported that some of the agro-dealers are unaware of the registration requirements and conditions associated with it. Therefore, they just conduct their businesses without abiding to the registration requirements. This was caused by inadequate dissemination of registration knowledge by TPRI, TOSCI and TFRA.

From the interviews held with some of the unregistered agro-dealers at 4 visited LGAs⁸ it was revealed that the agro-dealers were not clearly aware of the procedures used for registration and from where to initiate the registration process.

(b) High Registration Costs

Agro dealers especially pesticides sellers from the visited LGAs⁹ pointed out that some of the unregistered agro-dealers avoided to get registered due to the high costs associated with the registration requirements. In average it costs TZS 500,000/= to get registered and every year they have to pay TZS 55,000/= for re - registration. They further reported that among the factors that made them to avoid registering their shops was the presence of fees attached with registration process. This was verified by after eliminating the registration fees to seed and fertilizer sellers as the number of seed and fertilizer sellers increased from 296 to 1321 for financial year 2015/16 to 2017/18. But, for pesticide sellers, the situation remains worse since they are still required to pay the related costs for initial registration.

(c) Insufficient Inspections Conducted to Agro Dealers

It was noted that the reasons for inadequate registration of agro-dealers resulted from insufficient inspections conducted by the relevant regulators. Review of various inspection reports showed that insufficient inspections conducted by TOSCI, TPRI, and TFRA led to the agro-dealers to establish their businesses with no considerations to registration requirements.

⁸ Hai, Mbeya Rural, Masasi and Kalambo

⁹ Meru, Itilima, Urambo, Morogoro, Njombe, Masasi, Hai, Mbeya and Kalambo DCs

4.2.5 Consequences for Inadequate Registration of Agricultural Inputs and Agro Dealers

Presence of unregistered and Sub - standard Agricultural Inputs in the Market

The audit noted that there was a challenge of unregistered and substandard agricultural inputs in the market.

With regard to Pesticides, it was noted that unregistered pesticides were found in all districts and regions in Tanzania. However, this was more prevalent in regions and districts that are bordering other countries, for example, Mtwara, Mbeya, Kigoma, Tanga, Kagera and Arusha Regions. Similarly, unregistered pesticides including Dudu- All 450 EC, Ninja Plus - 5EC, Dudu - Acelamectin 5 percent EC, Sevin Dudu Dust, Abamite, Doom, Boss, Lava, Lethal, and Romectin were found in seven out of 13 visited pesticide shops in the visited LGAs .

On the other hand, with regard to seeds, it was noted that there have been decline of agricultural crops due to the use of substandard seeds by the farmers. Table 4.3 provides details regarding the noted incidences of the effects of using supplied substandard seeds:

Table 4.3: Effects of supplied sub-standard seeds to Farmers

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 were conducted
80 Farmers from Hai DC	Kilimanjaro	SEEDCO	SEEDCO 513	Affected 24 acres and yield dropped by 94 tonnes

Source: Inspections reports and farmers' claims, July 2013 - June 2018

From Table 4.3, it is shown that a loss on 236 acres was incurred by farmers whereby some farmers experienced less to no yield at all due to the use of substandard seeds.

Inadequate Inspection of Agricultural Inputs

Our audits showed that the inspections conducted to ensure the quality of agricultural Inputs i.e. Seeds, Fertilizer and Pesticides were not sufficiently conducted with regard to Agro-dealers, in the Ports of Entry and Farms as detailed below:

4.3.1 Inadequate Inspection of Pesticides

Inspectors are required to inspect pesticide sellers and at Ports of Entry as per Plant Protection Act, 1997. Inspectors should also put in place risk based inspection plans, policies and procedures. It was noted that although inspections were conducted at both Ports of entry and pesticide sellers, they were not adequately executed to ensure that only registered pesticides were sold in the market. This was due to the fact that not all Ports of entry and pesticides sellers were inspected as detailed below:

i) Inadequate Inspections carried-out at Pesticide Sellers premises

According to the Plant Protection Act, 1997, pesticides sellers are required to be inspected after being trained to identify if they meet pesticides pre-conditions for establishing pesticides business. They are also required to be re- inspected to find out if they are still complying with the relevant business requirements before renewal of their business permits.

It was noted that inspections conducted by TPRI do not cover all pesticide sellers as required by the Plant Protection Act, 1997. This was noted in all the 6 LGAs¹⁰ that were visited during the audit.

The audit team reviewed 20 files of pesticides sellers that include inspection reports from eight regions of Tabora, Arusha, Simiyu, Dar es Salaam, Morogoro, Njombe, Dodoma and Mtwara. It was revealed that not all pesticides sellers were inspected and for those who were inspected were not frequently re- inspected to find out if they had improved and now they are complying with the relevant pesticides business requirements. For example, one of the pesticides seller did not undergo any kind of re - inspection for a period of fifteen (15) years since he was inspected for the first time, but still for that period he was issued with a pesticides business permit every year and he is continuing with the business. Based on the same reviewed reports, the audit team noted that, TPRI was mostly considering payments for renewing business license as a major factor for re-registering than meeting technical and business requirements on the management of the quality of pesticides.

¹⁰ Meru, Itilima, Urambo, Morogoro, Njombe and Masasi DC

Pesticide sellers that were operating without being re - inspected are shown below in Table 4.4.

Table 4.4: Status of Inspection to Pesticides Sellers in Visited LGAs

Name of Pesticides Shop	Year Business Started	Number of Pesticides Inspection	
		First time Inspection	Re- Inspection
Pesticides shop 1	2010	0	0
Pesticides shop 2	2015	1	0
Pesticides shop 3	2013	1	1
Pesticides shop 4	2016	0	0
Pesticides shop 5	2008	1	8
Pesticides shop 6	2015	0	0
Pesticides shop 7	2016	0	0
Pesticides shop 8	2008	1	2
Pesticides shop 9	1994	1	7
Pesticides shop 10	2015	0	0
Pesticides shop 11	2010	1	2
Pesticides shop 12	2005	1	2
Pesticides shop 13	1999	1	2

Source: Auditors' Analysis from the Interview Notes, January 2018

Table 4.4 shows that five out of 13 pesticide sellers were not inspected at all, eight of them were inspected at the time of registering their pesticide businesses, and only two were regularly being re-inspected. Furthermore, during the visits conducted to 13 pesticide sellers in six LGAs, auditors noted some pesticide sellers located in remote villages that were not complying with the pesticides business requirements because they were never inspected. For example, the two visited pesticides shops at Itilima DC and one shop at Njombe TC had never been inspected since they opened their shops due to their geographical location being far from where TPRI inspectors are based. These shops were opened between 2010 and 2015.

ii) Inadequate Inspection at Ports of Entry

According to the interviews held with pesticide inspectors from the Ministry of Agriculture and TPRI, inspections conducted at Ports of entry were not sufficient. This was verified through the review of Reports on Status of Inspections at Ports of entry from the Ministry of Agriculture which pointed out that, 17 out 58 ports of entry were not performing inspections. This means that agricultural inputs that were imported through those 17 Ports of Entry which were not being inspected, thus posing a risk of importing poor quality agricultural inputs.

4.3.2 Inadequate Procedures for Inspection of Seeds

Officials from TOSCI pointed-out that TOSCI was insufficiently controlling the quality of seeds imported in the country by ensuring that it complied with the stipulated standards. They further reported that there was inadequate conduct of inspections to both seed sellers and Ports of entry due to the presence of fake and low quality seeds in the country that were not meeting the required quality.

i) *Inadequate inspection conducted to Seed Sellers*

The review of the annual plans and implementation reports from TOSCI from 2013/14 to 2017/18 revealed that less than half of the seed sellers were planned to be visited annually. But, the coverage of seed sellers during the inspection was less compared with the planned number. Table 4.5 shows the number of seed sellers inspected from 2014/15 to 2017/18.

Table 4.5: Total Number of Seed Sellers Planned and Inspected from 2013/14 to 2017/18

Financial Year	Registered number of seed sellers	Inspected seed sellers	% age inspected seed sellers
2014/15	525	105	20
2015/16	765	0	0
2016/17	827	296	36
2017/18	987	296	30

Source: Annual implementation plans, 2013/14 to 2017/18

Table 4.5 shows that a large numbers of seed sellers were not covered during the inspections, only 30 percent of the sellers were inspected. Furthermore, the situation in terms of coverage was deteriorating for the year 2017/18, the coverage dropped by six percent from that recorded in 2016/17.

ii) *Failure to conduct Inspections at Ports of Entry*

Based on Seeds Regulations, 2007, the consignment of seed imported in the country should be inspected. The Regulation requires that seeds should not be distributed prior to the outcome of the test results of the sample to establish their viability.

Officials from TOSCI showed that there was existence of fake and uncertified seeds in the country which were imported in the country through ports of entry. TOSCI explained that many of these seeds were entering the country through Tunduma and Namanga borders and were mainly imported by SEEDCO and PANA Com. This was due to the fact that currently, TOSCI is not conducting inspection in the Ports of Entry.

iii) Inadequate Field Inspection to Seed Producers.

Late applications of field inspections

Pursuant to Regulation 27(1) of Seeds Regulations, 2007 requires seed producers to submit an 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 an 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. From 19 sampled seed producers, there were about 11 late applications which are equal to 58 percent. It was also observed that there was no time fixed for the inspectors to inspect the farms after the applications. This was noted to contribute to non-conducting of all required stages of seed farm inspections hence compromise the quality of seeds produced by TOSCI.

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

Field requirements for inspection requires that there should be various inspections to be conducted according to the seed types. Seeds were not inspected at relevant stages of its production as indicated in Table 4.6:

Table 4.6: 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)

Our audit noted that neither maize, beans nor paddy seeds were inspected according to the required stages of its production. It was also noted that despite those seeds not being inspected as required, TOSCI approved and certified them to be used by farmers. The audit further noted that, 16 out of 19 sampled seed farms did not undergo any sort of inspections from TOSCI as per requirements.

4.3.3 Inadequate Procedures for Inspection of Fertilizers

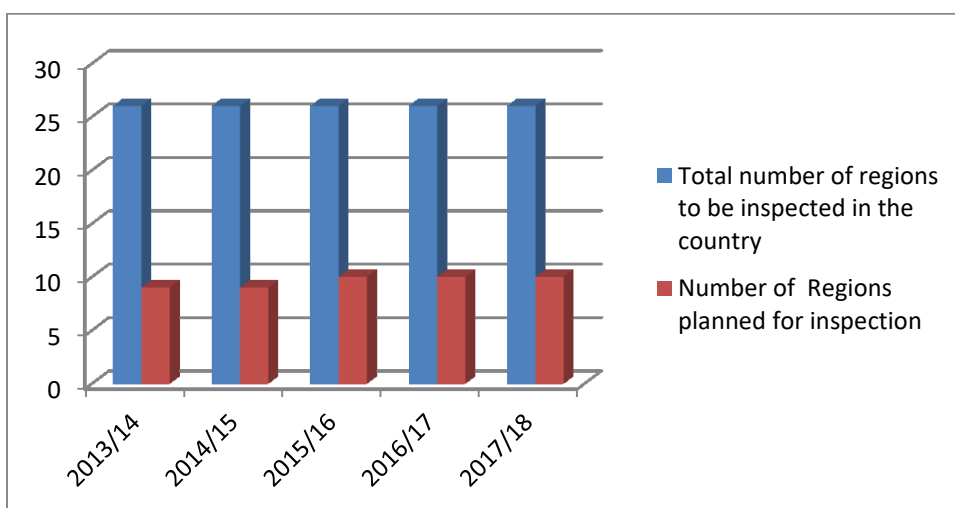
TFRA are required to quarterly conduct inspections to agro-dealers and also inspections at ports of entry to ensure quality fertilizers supplied to farmers.

It was noted that the inspections that were conducted by TFRA at ports of entry and to the agro-dealers were inadequate due to the presence of fertilizers that were not meeting the required quality. These are further elaborated below:

i) Inadequate Inspection of Fertilizers Sellers

The review of annual operational plans from TFRA for the period from 2013/14 to 2017/18 revealed that TFRA did not plan to inspect all fertilizer sellers available in all the regions in Tanzania mainland. Figure 4.1 provides regions that TFRA was 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 20113/14 to 2017/18



Source: Action Plan Reports from July 2013 to June 2018

Figure 4.1 shows that TFRA did not manage to plan inspections to even half of the regions that they were supposed to inspect. But, there were increasing number of regions planned to be covered during the inspection from 2014/15 to 2015/16.

The review of annual implementation reports from TFRA further reported that not all regions that were planned for inspection were covered by the inspection. As a result, even the few regions planned to be inspected could not be covered as indicated in Table 4.7.

Table 4.7: Percentage of covered regions per planned

Financial Year	Planned Number of regions to be Inspected	Actual number of Regions inspected	%age 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 4.7 shows that TFRA did not manage to visit the planned regions to conduct inspection activities. TFRA managed to cover only 80 percent of the planned regions that were supposed to be inspected. Furthermore, the performance trend shows that the number of regions covered is increasing even though it fell short of the target for the last five years.

ii) Inadequate Conduct of inspections at Ports of entry

TFRA explained that there is a limited number of inspectors to facilitate prompt carrying-out of inspection activities in the country. TFRA did not have officials at entry points who deal with quality assurance of the imported fertilizers. Currently, there is an increase in the use of foliar fertilizer in the country as a supplement which is imported through entry points evidenced by its presence 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 the needed quality for production. Almost 90 percent of the fertilizers used in the country are imported through the Port of Dar es Salaam. However, there are some operational challenges at Dar es Salaam Port including lack of laboratory for TFRA to facilitate timely carrying-out of fertilizer analysis. TFRA tend to use TPRI, Sokoine University of Agriculture (SUA), Mlingano Agricultural Research Institute and Tanzania Bureau of Standards (TBS) laboratories as an alternative hence tend to take long and costly for TFRA to use laboratories of those other entities.

Also, there were few fertilizer inspectors during the inspection of fertilizers at the Dar es Salaam Port this is due to the fact that those inspectors can be assigned other duties hence sometimes affecting the inspection processes. In total TFRA has got a total of 108 inspectors, of which eight are located at headquarters and 100 located at LGAs.

4.3.6 Contributing Factors for Inadequate Inspections Conducted to Agro dealers and Points of Entry

It was noted that inadequate implementation of inspection to agro - dealers and at Ports of entry was mainly caused by:

(a) Shortage of Qualified Inspectors

It was reported that, there were few skilled and qualified pesticide inspectors to facilitate inspection activities at Ports of entry and at pesticide sellers' premises.

It showed that most of the inspectors working at the Ministry of Agriculture's zonal offices and Ports of entry were not sufficiently trained in the area of pesticides. In addition, some of the inspectors were not qualified to conduct inspections since they were not approved by the Minister of Agriculture. The reported shortage of pesticide inspectors at both TPRI and the Ministry of Agriculture was 55 and 28 per cent respectively as shown in Table 4.8:

Table 4.8: Allocation of Pesticides Inspectors versus Requirements

Work Station	Number of inspectors required	Number of Inspectors allocated	Shortage of inspectors	Percentage of requirement (%)
TPRI	20	9	11	55
Ministry of Agriculture	230	165	65	28

Source: (Staffing Level requirements) IKAMA from the Ministry of Agriculture and TPRI (2018)

The report further showed that in total there were 99 inspectors in the country (90 at the Ministry of Agriculture and nine at TPRI) required to inspect 1935 pesticide sellers.

Even if all 99 inspectors were to be deployed to inspect the existing pesticide sellers, the ratio of qualified inspectors to pesticide sellers would be 1:20 resulting in a gap of 76 required pesticide inspectors. If the required number of pesticides inspectors were available as required by the Ministry and TPRI, the ratio would be 1:11 which would guarantee maximum impact from the pesticides inspections to be conducted.

(b) Lack of Modern Inspection Tools at Border Points

It was noted that inspections conducted at Ports of entry were not sufficient due to inadequate modern inspection tools to facilitate proper inspections. This was evidenced at Namanga Border Post where we noted lack of necessary tools such as gloves, mask, gumboots, pesticides quality scanner as well as pesticides inspection checklists. This in turn limited the capacity

of inspectors stationed at Ports of entry to effectively inspect all the consignments at those Ports of Entry to establish whether imported pesticides are meeting the quality standards required. An analysis of the availability of inspection tools at the Ministry of Agriculture and TPRI was made by assessing the availability of inspection tools against the required number of tools as shown in Table 4.9:

Table 4.9: Status of Tools to Facilitate Inspection at Entry Point

Name of Entity	Name of Tool	Total Required	Total Available	Shortage
Ministry of Agriculture	Protective Footwear	50 pcs	Nil	50 pcs
	Coverall/ Long sleeve Shirts	50 pcs	Nil	50 pcs
	Hat	50 pcs	Nil	50 pcs
	Safety Glasses/ Face Shield	50 pcs	Nil	50 pcs
	Respiratory Protective Devices	50 pcs	Nil	50 pcs
	Gloves	30 boxes	Nil	30 boxes
TPRI	Motor vehicles	3	1	2
	GPS	3	0	3

Source: Inspection Reports and Auditors' Analysis

Table 4.9 shows that the Ministry of Agriculture and Tropical Pesticides Research Institute lacked necessary working tools such as protective gears, motor vehicles and Global Positioning System (GPS) necessary for facilitating inspection of pesticides at Ports of entry. This implies that not all pesticides that were imported through our Ports of Entry were adequately inspected by the inspectors from the Ministry of Agriculture or TPRI.

(c) Weak Implementation of Sanction to Pesticide Sellers and Importers

Through Section 34 of the Plant Protection Act, 1997, inspectors have been given power to implement sanctions when they find out that pesticide sellers or importers are guilty of not complying with the legal requirements governing the management of pesticides in the country.

However, it was noted that, inspectors were not effectively implementing the required sanctions against pesticide sellers and defaulting importers. This was due to the fact that inspectors were not applying various sanctions as stated in the law. Actions taken to pesticide sellers and importers were mostly limited to issuing warning letters. Other, sanctions such as fines, impounding and prosecutions were implemented very rarely. For example, some of the reviewed inspection reports in respect of inspections conducted between July 2016 and December, 2017 showed that only one case regarding the distribution of pesticides that were not fit for use involving a Chinese Supplying Company in Mtwara Region was taken to court of law. The case

ended by requiring the supplier to transport the substandard pesticides to Dar es Salaam for storage before they were destroyed, and the company was charged a fine of TZS 44,800,000/=.

It was further noted that despite issuing the warning letters, there were no regular follow-ups to examine the level of implementation of the issued sanctions because re-inspections were not frequently conducted to pesticide sellers who were previously sanctioned.

(d) Absence of Procedures and Plans for Conducting Inspections

It was reported that there was no documented inspection policy and procedures in place to elaborate what, how and when to inspect as well as processes of taking actions when someone defaults. Inspectors were using developed inspections and re-inspection forms during their inspections which include checklists on items to be inspected. However, our review of inspection and re-inspection forms revealed that there were some key issues that needed to be checked frequently/regularly but were not included in the re-inspection forms. For example, the re-inspection form was missing key details on items such as protective gears and fire extinguishers; disposal mechanisms; assessment of the premises and list of chemicals found. These items could only be checked by experienced inspectors and not by the newly employed inspectors.

It was further reported by the officials from the Ministry of Agriculture and TPRI that there were neither documented inspection plan in place nor identified risk areas to facilitate planning of the inspections to pesticide sellers and ports of entry.

Contributing Factors for Inadequate Inspection of Seeds and Seeds farms

(a) Absence of TOSCI inspectors at Ports of entry

One of the main reasons mentioned by TOSCI was that they have no inspectors at the entry points. Absence of TOSCI inspectors at entry points poses high risks of importation of substandard seeds in the country. Plant Health Section (PHS) and TOSCI officials are required to be at entry points in order to inspect all 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 Ports of entry and there were no TOSCI inspectors in all Ports of entry as it is indicated in Table 4.10:

Table 4.10: Operationalization in the entry points by institutions

Institution	Entry Points required to operate	Entry Points Operating	Percentage of non-operating entry points (%)
PHS Inspectors	57	47	18
TOSCI Inspectors	57	0	100

Source: Auditors' analysis, 2018

According to the analysis in Table 4.10, TOSCI officials were not allocated in any entry points but PHS inspectors were available in 82 percent of known entry points in the country.

(b) Inadequate number of inspectors at LGAs and TOSCI

One of the main reasons mentioned by TOSCI for inadequate carrying of inspections was inadequate number of inspectors; the number of officials is still inadequate compared to the demand.

Review of the Institute's manning level showed that, at TOSCI headquarters and zonal offices the number of allocated inspectors was 52 out of 112; while at LGAs, the number of inspectors was 80 out of 182 required seed inspectors.

(c) Unclear Guidelines and Absence of Plans for Conducting Inspections

According to the Seed Regulations of 2007, TOSCI inspectors are required to provide for seed transportation order, seed import permit and seed export permit. However, it was revealed that there were no standard operating procedures (SOP) established to be used at the Ports of entry.

Our review of the Institution's Annual Plans revealed that there were no plans set for inspection at entry points. We noted that there were no inspections planned either by TOSCI HQ or Zonal Offices only PHS officials from the Ministry of Agriculture conducted inspections by assessing existence of diseases in the imported or exported seed consignments at the entry points.

(d) 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, it is only TOSCI HQ which is accredited and equipped with all the required and needed tools. The laboratories in the zonal offices are not accredited and equipped with all the tools that are needed. Table 4.11 indicates the shortage of the required inspection tools.

Table 4.11: Shortage of required tools at TOSCI Arusha Zonal Office

Name of the Tool	Required Tool(s)	Available Tools (s)	Percentage of shortage
Plastic Containers for sowing seeds	120 Pcs	40 Pcs	67
Purity Board	4	2	50
Seed Counter	2	1	50
Fume Cup Board	2	1	50
Sample Tray Framers	6	3	50
Glass Containers for sowing vegs	40	20 Pcs	50
Seed Divider	4	3	25
Germinator	1	1	0

Source: Shortage of tools status and auditors' analysis (2019)

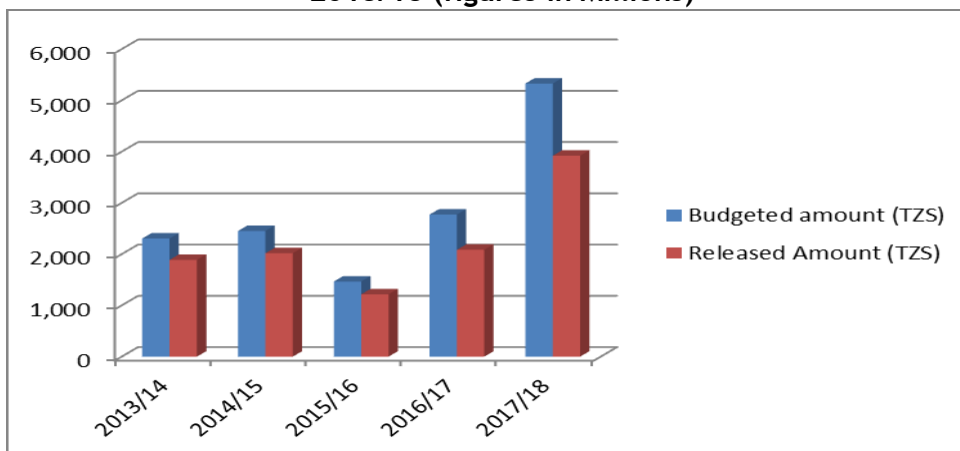
Table 4.11 above revealed that there was a shortage in the number of needed laboratory tools at TOSCI Zonal offices of about 50 percent in 2019.

The audit team further noted that each zone had one working vehicle which was to serve 4 to 5 regions this was not enough due to the scope of the work in the regions since TOSCI has a total of only six out of 13 required vehicles.

(e) Limited Resources to Conduct Inspections

It was further observed that there were inadequate releases of funds to cater for inspection activities as evidenced in Figure 4.2 which contributed to lesser coverage of the inspected areas.

Figure 4.2: Budgeted and released amount at TOSCI from 2013/14 to 2018/18 (figures in Millions)



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

Figure 4.2 shows that there were general increases of the amount budgeted and released at TOSCI but the fund budgeted were not fully released to cater for inspection and other related activities.

Contributing Factors for Inadequate Inspection of Fertilizer

(a) Lack of Inspectors at Entry Point

It was noted that there are about 57 Ports of entry in the country required to have at least a staff from either TFRA or Ministry of Agriculture. But it was revealed that 47 out of 57 Ports of entry have inspectors mainly from Plant Health Services Section who lack necessary skills for inspecting fertilizer control. It was further noted that TFRA only operate in Dar es Salaam out of existed 57 Ports of entry in the country.

(b) Financial Constraints

According to the interviews that were held with officials from TFRA, it was noted that financial constraint was one of the reasons for inadequate carrying-out of inspection activities. It was noted that there were inadequate disbursement of funds to cater for inspection activities in the country. This caused TFRA to sample only few regions to be visited during the inspection activities. Table 4.12 shows the disbursement of funds during the period from July 2013 to June, 2018.

Table 4.12: Funds disbursed for inspectors of TFRA July 2013 to June 2018

Year	Budgeted Amount for inspection (Million TZS)	Actual Amount for inspection (Million TZS)	Percentage released (%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's MTEF between July 2013 to June 2018 and Auditors' Analysis 2018

Table 4.12 shows that TFRA was disbursed with an average of 61 percent of the requested funds, which could not be utilized to the fullest as not all planned regions to be inspected were inspected as shown in Table 4.3. The stated reasons for not covering all the regions which was required to be inspected could not suffice given the analysis done.

For the year 2017/18 TFRA received 99 percent of its requested funds, but it covered only 28 percent of the required inspection. Despite the increase in the funding for inspection activities, the inspection coverage by TRFA was very low.

4.3.4 Consequences for Inadequate Inspections of Agricultural Inputs at Ports of Entry and Agro dealers

i) Supply of Low Quality and Unregistered Agricultural Inputs in the Market

Our audit noted that there were a number of complaints on the quality of seeds supplied in the market. The complaints were on the presence of unviable seeds in the market as the sold seed to farmers failed to grow especially in the Northern Zone. For Example in Kilimanjaro and Arusha Regions specifically Hai, Meru and Moshi Districts there were supply of maize seeds namely Pioneer 2859, DKC 90-89, SC 627 and SC 403, which had no germination capacity as confirmed by TOSCI. Farmers were also complaining about the presence of viable seeds that grow but do not produce the intended results. Moreover, it was noted that unregistered pesticides were found in all districts and regions in the country. However, this was more prevalent in regions and districts that are bordering other countries.

The audit team reviewed twelve (12) inspection reports for the period of July 2016 to December, 2017 that were conducted by TPRI aimed at processes involved in inspecting pesticides such as importation, selling and labeling and found out that there were pesticides such as Abamite, Doom, Boss, Lava, Lethal, and Romectin that were sold in the market without being registered by TPRI.

ii) Selling of Repacked Agricultural Inputs

It was reported that due to inadequate inspection carried-out at agro-dealers premises, resulted into selling of repacked agricultural inputs. This was verified through the visits conducted to pesticides sellers in Morogoro DC as the audit team found repacked pesticides in one of the visited shops. Also, during interviews held with farmers from 4 visited LGAs¹¹, they admitted that there was a repacking of fertilizer bags due to unavailability of small fertilizer bags which fitted their needs in the market. Currently, the available fertilizer bags are packed in 50 kilograms which cannot be afforded by all farmers.

iii) Illegal Importation of Agricultural Inputs

The audit noted existence of pesticides that were illegally imported in the country due to failure to conduct inspections at various ports of entry. This was more prevalent in the regions that are bordering other countries in East, Central and Southern Africa such as Mtwara, Mbeya, Kigoma, Tanga, Kagera and Arusha. Similarly, it was noted that absence of TOSCI inspectors at entry points imposes high risks of importation of substandard seeds in the country.

¹¹ Hai, Mbeya Rural, Masasi and Kalambo

4.4 Inadequate Dissemination of Knowledge to Agro-dealers, Farmers and Extension Officers

4.4.1 Inadequate Dissemination of Knowledge to Agro-dealers

(a) Inadequate Dissemination of Knowledge to Pesticides Sellers

Pesticide sellers have to be trained by TPRI before opening of the pesticides business as a requirement set by the Plant Protection Act No.13 of 1997 and its Regulations of 1998. Training to pesticides sellers is important in order to efficiently manage the pesticides stocked in their shops as well as educate farmers on proper use of pesticides.

Review of training reports for the period under review showed that from September 2015, to September, 2017, TPRI trained 998 pesticides sellers, and the contents of the training focused on the requirements of the Plant Protection Act No. 13 of 1997 for doing pesticides business in the country.

However, it was revealed that there was no established database showing the number of pesticides sellers in the country versus the number of trained pesticides sellers; that would assist to establish a gap of unregistered pesticide sellers since they were not trained as a requirement for them to qualify for pesticide business. The data base would assist as well in the planning for the re -training of pesticide sellers because there were no documented plan and mechanism for re-training pesticide sellers which is very important due to frequent changes in the pesticides formulations and names.

From the six visited LGAs it was noted that there were owners of pesticide shops who were not trained even once on pesticides business requirements as shown in Table 4.13

Table 4.13: Status of Training to Pesticides Sellers

Name of Pesticides Shop	Year Business Started	Number of Trainings	
		Training for registration	Re-trainings
Shop 1	2010	0	0
Shop 2	2015	1	0
Shop 3	2013	1	2
Shop 4	2016	0	0
Shop 5	2008	1	3
Shop 6	2015	0	0
Shop 7	2016	0	0
Shop 8	2008	0	0
Shop 9	1994	1	2
Shop 10	2015	0	0
Shop 11	2010	1	1
Shop 12	2005	0	0
Shop 13	1999	0	0

Source: Auditors' analysis from the Interviews for the visited LGAs (2018)

Table 4.13, shows that only five out of 13 pesticide sellers were trained when registering their pesticides business, out of those five, four were re-trained by CNFA/TAGMARK that was funded by Agro-Dealers Training Project under the Ministry of Agriculture.

It was further reported that despite training being conducted to pesticides sellers¹² by TPRI, not all trained pesticide sellers were really attending their shops. The report showed that most of the pesticides shops were attended to by employed staff that were not trained in pesticides management. For instance, in 10 out of 13 visited shops as sellers, it was found out that employed staff were not trained in managing pesticides but were found to provide technical support to farmers who visited their shops. It was further reported that there were pesticide sellers who were not trained even once regarding pesticides business requirements, for instance in a sample of 13 visited pesticides shops, there were eight untrained pesticide sellers.

(b) *Inadequate Dissemination of Knowledge to Seed and Fertilizer Sellers*

TOSCI and TFRA are required to include provision of training to seed and fertilizer sellers to ensure that seeds and fertilizers sold in the market meet the required standards.

Review of year under Audit Annual Reports showed that training to seed and fertilizer sellers was conducted only once. It was further 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 knowledge to farmers on the application of both seeds and fertilizers.

Based on the analysis done by the audit team, it was revealed that from the few sampled seed and fertilizer sellers from the visited LGAs of Hai, Mbeya, Kalambo and Masasi DC, up to 80 percent of them were lacking good knowledge on agriculture that indicated they could not provide the required advice when selling seeds and fertilizers to farmers.

4.4.2 Inadequate Dissemination of Knowledge to Agricultural Extension Officers

The main function of extension officers at the LGAs was to transfer new agricultural knowledge to farmers to ensure farmers had access to the right information and at the right time. However, it was noted that extension officers at LGAs were not well capacitated to provide extension services to

¹² September,2015 to September,2017

farmers that include proper use of seeds, fertilizers and pesticides. The Ministry of Agriculture and PO-RALG indicated that there was no training needs assessment that was conducted and no training programmes for agricultural extension officers were implemented.

For instance, it was noted that most of the Agricultural Extension Officers were not sufficiently trained on proper handling of pesticides. They mostly depended on the basic knowledge obtained during their certificate/diploma and graduate studies. This was verified during the visits conducted to six selected LGAs as it was noted that half of the agricultural extension officers that were interviewed in Morogoro DC, Njombe TC and Masasi DC were not trained on pesticides management issues. However, for those who were trained, all trainings were conducted more than ten years ago. In Itilima and Urambo DC all of the interviewed agricultural extension officers were not trained at all in pesticides management.

Similarly, 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 out that LGAs conduct limited number of trainings to agricultural extension officers on the proper management of seeds and fertilizers. It was further reported that, for the visited LGAs of Hai, Mbeya, Masasi and Kalambo data showed that, trained extension officers were 2,120 out 5000 planned to be trained equivalent to 42 percent for the financial year 2015/16 to 2017/18.

4.4.3 Inadequate Dissemination of Knowledge to Farmers

According to the Ministry of Agriculture and PO-RALG officials, all farmers in LGAs should be capacitated with different good agricultural practices such as land preparations, use of fertilizers and improved seeds, irrigation methods, pesticide application, etc.

It was reported that the main method that had been used to transfer new agricultural technologies and good practices to farmers was demonstration plots/FFSs. In this case, agricultural extension officers especially at villages had the responsibility of mobilizing farmers to form groups of approximately 25 - 30 farmers so that they could learn by practicing on small farm plots which serve as demonstration plots. The audit team assessed the extent of dissemination of knowledge on the proper usage and storage of agricultural inputs and noted various weaknesses as shown below:

(a) Inadequate Dissemination of Pesticides Knowledge to Farmers

Interviews with officials from TPRI, PO-RALG and six visited LGAs pointed out that farmers were not adequately trained on safe handling of pesticides. Based on the same interviews, it was found out that PO-RALG trained farmers on Good Agricultural Practices through LGAs, but the training rarely included pesticides issues. It was noted that in all six visited LGAs, there

were no training regarding pesticides management not even included in other agriculture training.

The audit team was able to observe how farmers handled pesticides. For example, one farmer in Ndatu village stored the purchased pesticides by hanging them on the tree which was very close to the kitchen of his house. At Lagangabilili village, a farmer was observed spraying pesticides in cotton farm, without putting on all required protective gears. He only put on gumboot and motor cycle's helmet which is not right and the helmet did not cover his face as shown in Photo 4.1.

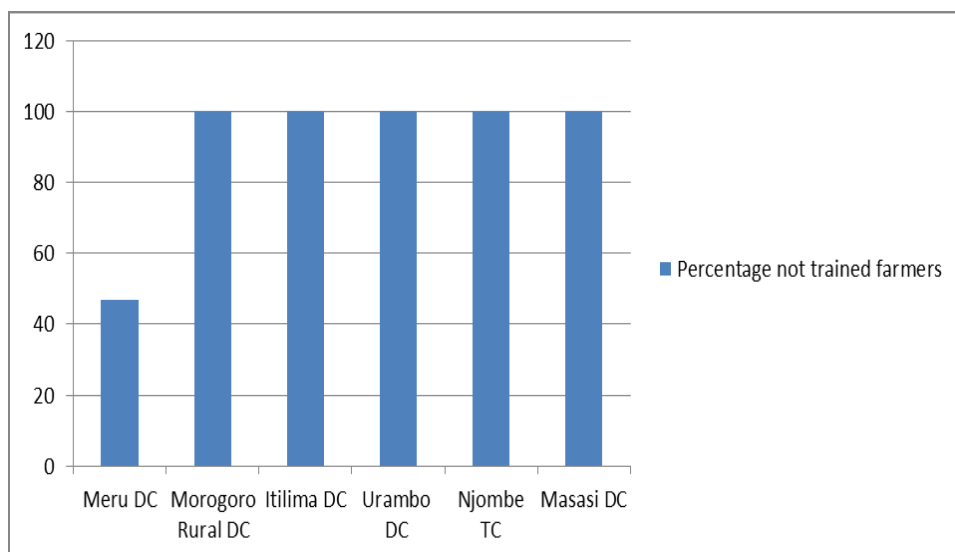
Photo 4.1: A Farmer without protective gears at Lagangabilili village in Itilima DC



Source: Photograph taken by auditors' team on January 17, 2018

Figure 4.3 shows the status of farmers who were not capacitated with pesticides knowledge in six visited LGAs of Meru, Itilima, Urambo, Morogoro, Njombe and Masasi District Councils.

Figure 4.3: Status of Farmers who have Not Received Pesticides Training from 2015/16 to 2017/18 in six Visited LGAs



As shown in Figure 4.3, farmers were not sufficiently equipped with pesticides knowledge as more than 90 percent of the visited farmers were not trained on safe use and handling of pesticides.

(b) Inadequate Dissemination of Knowledge to Farmers on the Proper Usage of Seeds and Fertilizes

It was noted that less number of farmers were capacitated with knowledge on the proper use and storage of seeds and fertilizers. This was verified through the review of training report on uses of seeds and fertilizer from 4 visited LGAs of Hai, Mbeya rural, Kalambo and Masasi as from 2013/14 to 2017/18, a total of 13,874 out of 19,581 planned farmers to be trained were trained. Table 4.14 provide more details

Table 4.14 Status of Trained Farmers in four Visited LGAs from 2013/14 to 2017/18

Financial Year	Planned	Trained	Not Trained	Percentage of Not Trained
2013/14	1708	1203	505	30
2014/15	3592	2396	1196	33
2015/16	4693	3288	1405	30
2016/17	4578	3415	1163	25
2017/18	5010	3572	1438	29

Table 4.14 shows percentage of not trained farmers on the proper uses of seeds and fertilizers ranging from 25 to 33 percent.

4.4.5 Contributing Factors for the Inadequate Dissemination of Knowledge

Various factors were mentioned to be contributing factors for the inadequate dissemination of knowledge regarding proper uses of agricultural inputs.

Contributing Factors for Inadequate dissemination of Knowledge to Agro dealers

Absence of Training Plan

The Tropical Pesticides Research Institute (TPRI) is required to develop a training plan to facilitate pesticides trainings to be conducted to pesticide sellers. However, it was noted that there was no documented training plan to guide the provision of pesticides trainings to pesticide sellers. The main reason for not having a training plan was lack of prioritisation in developing this plan despite the understanding its benefits to the farmers who are the ultimate users of the agricultural inputs.

Contributing Factors for Inadequate Dissemination of Knowledge to Extension Officers

Inadequate Funds Released to the Department of Agriculture, Irrigation and Cooperatives in the LGAs

Despite LGAs being issued with financial circulars requiring them to retain 20 percent of revenue collected from agricultural activities to facilitate agricultural activities in the Department, its implementation status was still low because the amount retained to this Department in almost all visited LGAs¹³ was less than 20 percent. Further, it was found out that improper training provided to agricultural extension officers affected the implementation of their key responsibilities of advising and training farmers in proper usage and handling of pesticides, seeds and fertilizers.

Contributing Factors for Inadequate dissemination of Knowledge to Farmers

(a) Absence of Needs Assessment

Interviewed officials from the Ministry of Agriculture and PO-RALG revealed that there was no training needs assessment conducted to identify training needs for farmers.

¹³ Meru, Morogoro, Itilima, Urambo, Njombe, Masasi, Hai, Mbeya and Kalambo

(b) Shortage of Agricultural Extension Officers

It was revealed that there was a shortage of agricultural extension officers both at village and ward levels that were supposed to impart agricultural knowledge to farmers for the visited LGAs¹⁴ covered by the audit. For example in the visited LGAs of Hai, Mbeya, Masasi and Kalambo DC, available extension officers were reported to be 272 out of the required 531 which is equivalent to 51 percent of the needed agricultural extension officers.

(c) Training being out of TPRI Mandate

It was revealed that TPRI is rarely conducting pesticides training to farmers as such trainings are out of their mandated scope. Training conducted depends on the request made by farmers through their groups. Normally, TPRI is conducting training of trainers (TOT) to selected farmers, also to Village Based Agro-dealers, these are farmers trained to sell pesticides in their villages.

4.5 Inadequate Monitoring of Quality Control Activities

4.5.1 Monitoring of Quality Control Activities on Pesticides Performed by TPRI

Based on the review of Strategic Plan of the Ministry of Agriculture, it was noted that monitoring of pesticides activities performed by TPRI was included. But it was noted that not all three aspects of quality control on pesticides namely registration, inspection and awareness were included. The monitoring conducted by the Ministry of Agriculture was mainly on the control of registration activities through NPPAC¹⁵ and PARTS¹⁶ to ensure registered pesticides met the required standards.

It was further reported that both officials from the Ministry of Agriculture and TPRI considered inspection activities conducted to pesticides sellers and ports of entry as monitoring. This was noted as an indication of failure for the Ministry of Agriculture to prioritize the monitoring of other remaining pesticide activities that included inspection and training. This is contrary to the role of the Ministry of Agriculture as they have to oversee the implementation of developed policies as well as various guidelines set in the area of pesticides.

¹⁴ Meru, Morogoro, Itilima, Urambo, Njombe, Masasi, Hai, Mbeya and Kalambo

¹⁵ National Plant Protection Advisory Committee

¹⁶ Pesticides Approval and Registration Technical Committee

4.5.2 Contributing Factors for Inadequate Monitoring of TPRI

Less prioritization of M&E activities

It was noted that there is less priority in monitoring and evaluation of TPRI activities by the Ministry of Agriculture. This was attributed to insufficient budget allocated to Monitoring and Evaluation section in the Ministry to enable them to perform these activities.

Inefficient utilization of data collection tools

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

Absence of Monitoring Framework and Plan

Our interviews of various Ministry staff indicated that there were no documented framework and plan in place for monitoring the performance on the quality control activities performed by TPRI. As a consequence, the Ministry failed to track progress of the set goals of insuring agricultural inputs supplied in the market are of the required standards. It was further noted that there could be a risk of some problems to be solved for a longer period than expected.

CHAPTER FIVE

MANAGEMENT OF CROP PESTS AND DISEASES

5.1 Introduction

This chapter presents findings observed in the Performance Audit Report on the Implementation of strategies for managing agricultural crop pests and diseases outbreak. It is an undeniable fact that agricultural crop pests and diseases outbreak have reduced the level of food security in some areas, and affected our international trade and market access due to the low quality of the crops which we produce.

The findings in this chapter covers four issues of *control, prevention, coordination, monitoring and evaluation* of activities for managing agricultural crop pests and diseases outbreaks. The following are details of the reported weaknesses:

5.2 Inadequate Preventive Mechanism to Reduce Crop Pests and Diseases Outbreaks

The Ministry has not adequately developed mechanisms to ensure that crop pests and diseases are effectively reduced to the minimum due to inadequate Inspections conducted at ports of entry, insufficient awareness to farmers, and inadequate accessibility of improved seeds. Below are the details:

5.2.1 Inadequate Inspection at Entry Points

It was found that the possibility for most pesticides entering in the country without being properly inspected by TPRI inspectors was high. It was observed that the inspections at entry points were not conducted adequately. This was due to an inadequate number of inspectors and inspection tools at the entry points as described hereunder:

- *Insufficient number of inspectors at entry points:* It was also reported that there was an inadequate number of inspectors located at entry points operated by the Ministry of Agriculture. Out of 51 established official entry points, the Ministry of Agriculture operates only in 36 entry points. This means that one-third of Tanzanian borders were not manned with plant Inspectors, therefore, it was challenging in controlling importation of pesticides;
- *Inadequate inspection tools:* there were inadequate inspections conducted at entry points due to inadequate number of inspectors who also possessed insufficient working tools which are essential in supporting inspection activities at the entry points. Examples of

these working tools included: cold rooms, facial masks tool, gloves, lenses and computers programmed with Pest Risk Analysis (PRA); and

- *Poor adherence to inspection standards and procedures:* it was reported that there was poor adherence to standard operating procedures during inspections at entry points. This was evidenced at Namanga, Mutukula and Tunduma entry points where standard operating procedures were not properly followed during inspections. The reason being that not all the staff at the entry points were well equipped with Pest Risk Analysis (PRA) and Standard Operating Procedures (SOPs) for Phytosanitary Operation and also the Pests List used was outdated.

5.2.2 Insufficient Awareness to Farmers on Application of Integrated Pest Management Methods

The Tropical Pesticides Research Institute (TPRI), the Ministry of Agriculture, and the President’s Office Regional Administration and Local Government (PO-RALG) were required to develop a training plan to facilitate pesticides training to be conducted to pesticides sellers, farmers and agricultural extension officers. However, the audit noted that there was no documented training plan to guide the provision of pesticides training to be provided to pesticides sellers, farmers as well as agricultural extension officers. Moreover, there was no training needs assessment conducted to identify training needs for farmers and agricultural extension officers.

There was inadequate coverage of training provided to farmers by the extension officers as indicated in Table 5.1. For the few training conducted, they did not cover issues related to agricultural crop pests and diseases. Knowledge about the crop pests and diseases was poorly disseminated to the agricultural extensionists and farmers. This left them without the required knowledge on how to handle various challenges regarding crop pests and diseases occurring in the areas.

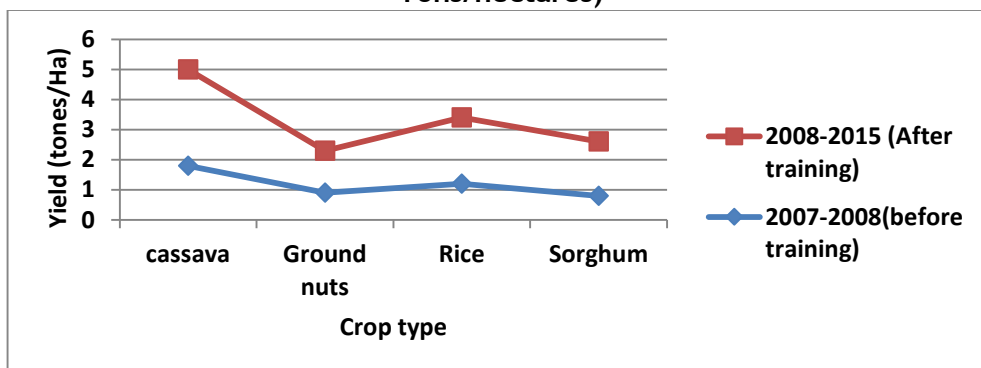
Table 5.1: Number of farmers trained on Agricultural Crop Pests and Diseases Management in LGAs from 2011-2015

LGA	Number of Population Engaged in Farming	Planned No. of farmers to be trained	Number of trained farmers	% Trained Farmers
Mbarari DC	270,465	120	0	0
Nanyumbu DC	135,771	0	0	0
Bahi DC	175,401	0	0	0
Meru DC	285,131	13,000	0	0
Masasi DC	313,117	1200	200	17
Muleba DC	540,310	549	549	100
Lushoto DC	177,818	223	223	100

Source: Progress report from Visited District Councils (2011-2015)

Table 5.1 shows that farmers visited in seven LGAs four LGAs did not receive training on integrated pest management methods in the years 2011-2015. The reasons for insufficient training were inadequate prioritization of the training activities to farmers. The available extension officers are not capacitated with up-to-date knowledge of agricultural crop pests and diseases. Therefore, it becomes difficult for them to disseminate new knowledge to farmers regarding crop pests and diseases. Thus, insufficient training on integrated pest management to farmers reduced the capacity of farmers to take preventive measures on outbreaks of agricultural crop pests and diseases. One example was cited at Nanyumbu District whereby after the training, the yield increased from 0.8 tons/ha to 3.2 tons/ha. Figure 3.4 shows the increment of yields after the training.

Figure 5.1: The impact of training on productivity level (yield in Tons/hectares)



Source: Auditors' computation using Data from Nanyumbu Participatory Research Report, 2015

Figure 5.1 shows the importance of training on agricultural crop pests and diseases outbreaks to farmers. The analysis shows that in 2007/08 before training, the yields were less than 2 Tons/Ha, but after the training was provided to farmers from 2008 up to 2015 there had been an improvement in farmers' yields up to 3.2 Tons/Ha. The gap in the figure between the blue and red graphs shows the improvement trend.

5.2.3. Inadequate Accessibility of Improved Seeds and Pesticides for Controlling Pests and Diseases

Subsidies on farm inputs were given to farmers but were not enough to reach all the farmers in the country. There were few numbers of farmers who were able to access the improved seeds and pesticides due to inadequate release of these inputs to farmers. In most cases, there was a delay in accessing improved seeds through subsidies. When farmers requested for subsidies, they did not receive them on time. Mostly they received them off-season. This was observed in all seven visited LGAs. Table 5.2 gives a

detailed analysis on maize seed subsidies at Kikwe Ward in Meru District Council.

Table 5.2 : Maize Subsidies Analysis to Farmers at Kikwe Ward

Year	Village	Requested Subsidies per number of Farmers	Released Subsidies per Number of Farmers	Percentage of released subsidies (age)
2013/14	Karangai	311	57	18
	Maweni	250	50	20
	Kikwe	212	300	140
	Nambala	301	50	17
2014/15	Karangai	Nil	Nil	Nil ¹⁷
	Maweni			
	Kikwe			
	Nambala			
2015/16	Karangai	587	200	34
	Maweni	418	200	48
	Kikwe	450	200	44
	Nambala	591	300	51

Source: Agricultural Input Distribution Report of Kikwe Ward

Table 5.2 shows that the requirement of an agricultural input (seeds that have high resistance to diseases) was higher compared to the released inputs. In most villages, released inputs were less than half of the requested inputs (seed) due to insufficient needs assessment done to farmers as well as an insufficient budget to support the supply of seeds.

Factors contributing to Inadequate Accessibility of Improved Seeds and Pesticides

(i) *Inadequate needs assessment:* most released inputs were less than half of the requested inputs (seed) due to inadequate assessment of farmers' needs; and

(ii) *Inadequate inspection of seed sellers:* Review of the annual plans and implementation reports from TOSCI from 2013/14 to 2017/18 revealed that annual inspection plan was covering less than a half of the actual number of seed sellers. Many of the seed sellers were not inspected to ensure that the seeds sold to farmers were resistant to crop pests and diseases. Table 5.3 shows the number of seed sellers inspected in the year 2013/14 to 2017/18

¹⁷Request is made upon receipt of notification from LGAs after receiving subsidies, for 2014/2015 LGAs did not receive subsidies

Table 5.3: Total number of seed sellers planned and visited for the inspection from 2013/14 to 2017/18

Financial Year	Registered number of Agro-dealers	Inspected agro-dealers	% age inspected agro-dealers
2014/15	525	105	20
2015/16	765	0	0
2016/17	827	296	36
2017/18	987	296	30

Source: Annual implementation plans, 2013/14 to 2017/18

Based on Table 5.3, average of only 22 percent of total agro-dealers were inspected between the year 2013/14 and 2017/18.

(iii) *Inadequate inspection of agro-dealers and pesticides in the market:* it was observed that there were pesticides in the market which were below standards. This is due to inadequate inspection of the pesticides in the market. Hence there were more supply of substandard pesticides to farmers. For example, reviewed inspection reports by TPRI for the period of July 2016 to December, 2017 showed that Abamite, Doom, Boss, Lava, Lethal, and Romectin were sold in the market without being registered by TPRI. Many of the substandard pesticides were found in regions and districts that are bordering other countries. These included: Mtwara, Mbeya, Kigoma, Tanga, Kagera and Arusha regions; and

(iv) *Inadequate registered agro-dealers with knowledge on quality pesticides in the markets.* The audit observed that for the purpose of registration training about quality agriculture inputs including pesticides and seed was imparted to agro-dealers. However, the registered agro-dealers who are expected to sell quality inputs to farmers are few compared to the demand.

Impact of Inadequate Accessibility of Improved Seeds and Pesticides

This caused the farmers to use seeds from local varieties which had low genetic potential and highly prone to diseases and insect pests. As a result, farmers ended up with little yield, leading to food insecurity and low income. Moreover, the use of pesticides of good quality is likely to lead to challenges in dealing with crop pests and diseases. This resulted into yield that was below expectations.

5.3 Inadequate Controlling Mechanisms for the Management of Agricultural Crop Pests and Diseases Outbreaks

Control mechanisms had not been managed adequately by the Ministry of Agriculture and PO-RALG as they were required to do by the Plant Protection Act 1997. This is illustrated by the following scenarios:

5.3.1 Insufficient surveillance for easy identification of Agricultural Crop Pests and Diseases Outbreaks

Tanzania is a member of the IPPC and therefore has the obligation of having a functional surveillance system for early detection of pests and diseases problems at any given time. Effective surveillance system helps to control quickly and minimize crop damage.

Agricultural crop pests (Armyworm) were detected by forecasting through pheromone traps. The Ministry of Agriculture in collaboration with Community-Based Armyworm Forecasting (CBAF) was able to distribute more than 400 pheromone traps in 29 LGAs since 2002. The audit found that the available pheromone trap at Chigugu village, in Masasi District Council was well functioning. However, Bahi District Council traps were no longer in use due to lack of pheromone lure and skills on how to service pheromone traps.

In addition, there was a high outbreak of crop diseases such as Maize Lethal Necrosis Disease (MLND) in areas like Meru District Council yet farmers and extension officers were not well equipped with the knowledge on how to deal with the outbreak. This shows that although surveillance was done, dissemination of the knowledge to farmers and extension officers was still a problem. This had affected farmers in different ways including the problem of food insecurity and loss of income. In addition, insufficient surveillance contributed to the lack of updated pests list at the national level which is a requirement in international trade and market access for agricultural products.

5.3.2 Inadequate Reporting and Intervention on the Agricultural Crop Pests and Diseases Outbreaks

During the forecasting and outbreak incidences, farmers report their cases to village extension officers who report the case to Zonal Plant Protection Officer through District Agricultural Officer. Thereafter, Zonal Plant Protection Officer takes action, or if the reported incidence requires attention of the Ministry of Agriculture, the report is directly sent to the Ministry of Agriculture through Plant Health Section.

Reporting of outbreaks did not follow normal reporting structure and there were weak linkages between the Ministry of Agriculture and PO-RALG despite PO-RALG being responsible in administering all LGAs in the country. The reason being that according to the LGA structures all Agricultural

officers report to LGAs which are under PO-RALG while technical support is provided by the sector Ministry i.e. the Ministry of Agriculture.

Reports which were sent to PO-RALG were District Agriculture Development Programme (DADPs) implementation reports on which the aspect of agricultural crop pests and diseases was rarely covered. This suggests that agricultural crop pests and diseases issues were not given priority. Therefore, to a large extent, this caused a delay in implementing activities which needed technical support from the ministry of agriculture, because agricultural officers mostly prefer activities that are channelled to the reporting structure i.e. PO-RALG.

5.3.3 Insufficiently Developed Risk-Based Plans for the Management of Crop Pests and Diseases Outbreaks

The Ministry of Agriculture and the seven visited LGAs used Integrated Pest Management Plan (IPM) as developed risk-based plans to manage agricultural crop pests and diseases. However, the following weaknesses were noticed in this system:

Despite the Ministry of Agriculture having established several risk-based plans, the plans were prepared under ad-hoc basis. The audit noted that the Ministry, PO-RALG and LGAs did not have common plans on how to deal with outbreaks although all the LGAs were experiencing a similar outbreak of pests and diseases.

The audit further found that in 4 out of 7 visited LGAs planning was not done because it was not given a priority. Further reviews were made on budget report summary of 2015 from TPRI and three visited entry points. It was found that the implementation of some risk based elements was not adequately done by these institutions. This was caused by low priority in the preparation of the risk-based plans for managing crop pests and diseases by MALF and LGAs.

5.3.4 Insufficient System for Recording of Agricultural Crop Pests and Diseases Information

Good system for keeping records is a key tool needed for easy analysis of diseases and pests to show the spread trend of crop pests and diseases eruption in a country. It was pointed out that there was an insufficient system for keeping records of the outbreaks. For all visited sites, it was observed that there was an insufficient system to record information about crop pests and diseases.

Many LGAs failed to implement the installed data system “Agricultural Routine Data System (ARDS)” for recording of agriculture and livestock issues. This was due to inadequate trained personnel who knew and

understood the system. For example, in Muleba and Meru DCs the auditors failed to access the system because of the absence of a trained personnel.

Lack of working tools such as laptops and internet access affected the sharing of agricultural pests and diseases information between LGAs and the Ministry of Agriculture timely.

Furthermore, for the received information did not represent a true picture of what was happening in the LGAs as far as agricultural crop pests and diseases were concerned.

5.3.5 Inadequate Follow-up and Feedback Mechanism of the Activities for Managing Agricultural Crop Pests and Diseases Outbreaks

According to the Strategic Plan (2011-2016) of PO-RALG and the Ministry of Agriculture, both had a role of making a follow-up after the outbreaks of crop pests and diseases for the provision of feedback to the key stakeholders namely LGAs.

However, it was observed that the Ministry of Agriculture did follow up mostly when the outbreaks of agricultural crop pests and diseases occurred. The audit showed that the Ministry of Agriculture received incidence reports from LGAs but did not receive implementation reports; hence it became difficult for the Ministry of Agriculture and PO-RALG to make a follow-up on the outbreaks. The main reason for failure to submit the implementation reports from the seven visited LGAs was that the PO-RALG more concerned with administrative issues rather than technical.

It was indicated that there were inadequate follow-up and feedback mechanisms by Ministry of Agriculture and PO-RALG. In seven LGAs and five Agricultural Research Institutes sampled, it was indicated that follow-up were mostly done on an ad-hoc bases. It was conducted only when the outbreaks of agricultural crop pests and diseases had occurred. The reason for inadequate follow-up was due to non-prioritization of outbreaks of crop pests and diseases in the plans of the Ministry.

Due to insufficient follow-ups, information was not well shared as feedback was not given on all interventions. This resulted into failure in the effective control of the outbreaks in various LGAs.

Currently, the Ministry has tried to deal with this issue through improving various systems such as ARDS which allows the trained officials from LGAs to upload their information to the system which is accessible at the ministerial level. Moreover, the District Agriculture and Irrigation Cooperative Officers (DAICO) are now required to report agricultural matters directly to the Ministry, which allows quick response and transfer of information at the Ministerial level.

5.4 Inadequate Coordination of activities relating to Management of Agricultural Crop Pests and Diseases

Information sharing among key stakeholders is the key element of having effective coordination in managing agricultural crop Pests and Diseases. The report pointed out weaknesses in the coordination among key actors and other stakeholders.

5.4.1 Inadequate Coordination at Regional Secretariat Level

The audit observed that during outbreak intervention only 2 (Kagera and Arusha) out of 6¹⁸ visited Regional Secretariats were able to coordinate with the Local Government Authorities after MLND and BXW disease outbreak.

The audit noted that there was a weak coordination mechanism observed at both the regional and district level. The regional secretary is responsible for reporting outbreak information to PO-RALG. However, it was observed that the reports did not include information on outbreak interventions performed by LGAs and the Ministry of Agriculture because the Ministry worked together with the LGAs in combating disease outbreaks without involving the Regional Secretariat.

This became a challenge for the RS to coordinate issues regarding pests and diseases outbreaks as the RS had no status regarding interventions of the outbreaks. In this regard, it became difficult for RS to plan for intervention. Consequently, PO-RALG and RS did not have updated status of crop pests and diseases outbreak which eventually became difficult for both PO-RALG and RS to plan for crop pests and diseases outbreak interventions.

5.4.2 Inadequate Coordination between the Ministry of Agriculture and Other Stakeholders

Weak coordination was observed at different levels and categories as analysed and discussed:

i) Weak coordination between Government and Private Sector

The audit indicated that there was a weak coordination between key stakeholders i.e. the Ministry of Agriculture, Non-Government Organizations (NGOs) and LGAs in the management of crop pest and diseases. Although there was memorandum of understanding between the government and private sector yet some of the NGOs operated without official notification to LGAs or the Ministry. This affected the coordination and tracking of the activities conducted.

¹⁸ Dodoma, Arusha, Kagera, Tanga, Mtwara and Mbeya

ii) *Weak coordination between government institutions*

The audit noted that there was weak coordination between the PHS inspectors at the entry points and TPRI. It was observed that the PHS inspectors at entry points did not have laboratories to conduct needed tests for the confiscated goods. Therefore PHS send samples to TPRI for further analysis and inspection. But there was no well-established systems which supported smooth and efficient exchange of samples and laboratory results, hence leaving some confiscated goods for a long time at entry points and some being released with no proper assurance of their safety.

5.4.3 Inadequate Monitoring and Evaluation of Activities for Managing Agricultural Crop Pests and Diseases Outbreaks

The audit noted that there was inadequate monitoring of crop pests and outbreak of diseases at different levels as detailed below:

i) *Monitoring and Evaluation conducted by the Ministry*

This activity was conducted through Plant Health Section and TPRI as they are responsible to control outbreak of pests and diseases at entry points and to farmers as well.

Monitoring and Evaluation at the Ports of Entry

Review of the Ministry of Agriculture MTEF for 2013/14 and 2014/15 showed that monitoring activities budgeted by Plant Health Services section included: monitoring and evaluation of entry points and biocontrol unit in prevention and controlling of crop pests and diseases; and monitoring of the performance of Plant Health Services border post. However, a review of the Ministry MTEF showed that monitoring activities were not implemented by the Ministry of Agriculture due to shortage of fund.

Monitoring of Pesticides by the Ministry

The Ministry, through Tropical Pesticides Research Institute (TPRI) was supposed to ensure that pesticides used were effectively controlling agricultural crop pests and diseases. Monitoring was conducted at entry points and agro-dealers to ensure that unregistered pesticides were not imported and supplied in the country. However, it was noted that TPRI conducted monitoring on an ad-hoc basis. Monitoring was conducted only when there was an outcry of low standard pesticides in the market and the coverage was only in few areas.

ii) *Monitoring and Evaluation of Crop Pest and Diseases by PO-RALG*
PO-RALG monitors and evaluates the implementation of sector ministries programs in the LGAs annually. However, it was observed that monitoring of crop pests and disease outbreaks had not been well conducted. There was less prioritization given to monitoring and evaluation activities of crop

pest and diseases in the LGAs. More attention was given to coordination of ASDP program which did not cover issues related to the management of agricultural crop pests and diseases.

iii) Monitoring at Local Government Authority Level

Monitoring and evaluation at LGA level was conducted by the Policy and Planning Departments. But it was observed that LGAs performs regular monitoring of agricultural crop pests and diseases outbreaks only when there is an outbreak incidence. The reason observed was inadequate consideration and inclusion of the monitoring and evaluation activities during planning. Consequently, the outbreaks led to high utilization of resources (time and funds) in control of outbreaks in the areas.

CHAPTER SIX

CONSTRUCTION OF IRRIGATION INFRASTRUCTURE

6.1 Introduction

Agriculture in Tanzania has remained unpredictable and of low productivity due to erratic and unreliable rainfall as a result of increasing global warming and climate change. To cut off rainfall dependency and minimize frequent food shortages, it is important to ensure a wide coverage of irrigation infrastructure in the identified potential area for a wide range of crops¹⁹. During auditing period, the audit team visited five irrigation zones out of eight irrigation zones present. The zones visited were Morogoro; Mbeya; Mtwara; Kilimanjaro; and Mwanza Irrigation Zone.

This chapter presents findings regarding construction activities on irrigation infrastructure. The report has unveiled some weaknesses of the Ministry of Agriculture through its National Irrigation Commission when supervising the construction of irrigation infrastructure. Whereas the noted areas of weaknesses were on both feasibility studies and execution of construction works, the latter is characterized by delays in completion, increases in costs and sustainable quality of works. Detailed findings are presented below:

6.2 Inadequate Management of Irrigation infrastructure at both planning and implementation stages

This audit noted that the construction works for irrigation infrastructure were not adequately managed in the visited Irrigation zones. As a result, irrigation schemes were not completed on time, costs were higher than agreed and in some cases, there were compromised quality of the works.

Feasibility studies were not well planned due to inadequate priorities of planning for feasibility studies as the result of continuous inadequate funding of irrigation zones. It was noted that 76 Percent which is equivalent to 63 irrigation schemes were constructed with delays. This audit compounded causes of delay in completion of construction of irrigation schemes which included: Contractor's default; Unrealistic design; improper construction scheduling; Delayed payments to contractors, etc.

¹⁹ (United Republic of Tanzania, 2009)

In addition to that, 40 percent which is equivalent to 31 irrigation schemes were constructed with cost overruns. The total cost overruns noted was TZS 665.6 million in all five visited zones. This increase was equivalent to 2.9 percent of the total agreed contract sum. The overruns noted were due to contractor’s defaults, additional works and unrealistic designs.

Generally the construction of schemes with time and cost overruns impacted directly to delay anticipated services of the infrastructure to the farmers. Explanation of individual finding is as presented in the following sections:

6.3 Inadequate Planning for Construction of Irrigation Infrastructure

To determine the viability of irrigation projects, National Irrigation Act²⁰ requires all irrigation works to be done after a detailed feasibility study. These studies will show if the project is technically feasible and economically justifiable.

Review of budget plans and interviews conducted with Zonal Irrigation Engineers noted that, during the financial years of 2014/15, 2015/16 and 2017/18 Irrigation zones of Morogoro and, Mwanza, did not plan for conducting any feasibility study. Likewise, Kilimanjaro did not do so in 2016/17 and 2017/18. It was noted that for the financial years under review (2014/15 to 2017/18) only Mtwara and Mbeya planned to execute feasibility studies. It was further noted that a total of 360 feasibility studies were planned while 11 feasibility studies were only executed. This is equivalent to three percent of all the planned feasibility studies. Table 6.1 indicates the variation in the number of feasibility studies planned versus implemented.

Table 6.1: Variation between Planned and Implemented Feasibility Studies for the Financial Year 2014/15 to 2017/18

Irrigation Zone	Total Planned feasibility study	Total implemented feasibility study	Variation (%)
Morogoro	46	0	100
Mbeya	28	9	68
Mtwara	257	1	99.6
Kilimanjaro	16	0	100
Mwanza	13	1	92
Total	360	11	3

Source: Auditors’ analysis using data from visited irrigation zones

²⁰ Section 20 (1) (g) of the National Irrigation Act deficiencies

From Table 6.1, Morogoro and Kilimanjaro Irrigation zones did not implement any feasibility studies during the four years. Mbeya irrigation zone did not implement its plan by 68 percent. According to the review of budget and interviews conducted with Zonal Irrigation Officials, in all the five visited zones, there were two main factors that contributed to failure in planning and implementing the feasibility studies, these include:

- Zonal Irrigation Offices did not have enough capacity in terms of technical personnel and working facilities to conduct feasibility studies and;
- Over dependency on development partners funds to support irrigation activities

It was found that NIRC had shortage of capacity (skilled personnel and working tools) to effectively plan and implement the feasibility studies and other irrigation works. Because of these reasons, the viability of most of the irrigation works was not assessed. This posed the risk that investment made on irrigation projects was done without considering if they were technically and economically feasible. Table 6.2, shows staff available in all visited irrigation zones in relation to area of coverage versus staff available.

Table 6.2: Relationship between Areas of Coverage (Districts) Versus Number of Staff Available in Visited Irrigation Zones

Irrigation Zones	Number of district served	Number of staff required	Number of staff available	(Deficiency)	% deficiency of staff
Morogoro	19	69	32	37	54
Mbeya	16	42	27	15	36
Mtwara	15	31	16	15	48
Kilimanjaro	22	53	30	23	43
Mwanza	27	50	20	30	60

Source: IKAMA and need assessment from ZIEs

Based on Table 6.2, Mwanza irrigation zone serves 27 districts and it has a shortage of staff by 60 percent. Morogoro irrigation zone was the next zone in having deficit of staff, despite being operating into 19 districts, it has staff shortages for 54 percent. Mbeya irrigation zone covers 16 district and has the least in staff deficit.

In addition to that the audit noted that Zonal Irrigation Offices lack sufficient working tools, especially those which are used to conduct tests on the activities carried out on site. Review of assessment reports to identify the required tools indicated that there was 100 percent absence of length distance (laser distance) and water flow meters. Likewise, there was shortage of tools for field concrete

strength and surveying instrument (total station) for about 60 percent

Inadequate capacity of staff and working tools impairs timely project completion as the working program might not be followed by contractors due to insufficient availability of supervisors. Further, inadequate working tools lead to need for more time to achieve a segment that could have been achieved shortly. Likewise, inadequate tools can lead to compromise quality of work. Contractor could use this loophole to cheat on the specifications or quantities used without being detected. Ultimately, completion of the projects may lead to unnecessary cost overruns.

Over dependency on Development Partners funds to support irrigation activities

It was noted that donor financing played a bigger role than the government funding of irrigation projects. For the past four years, Development Partners financing contributed to 89.6 percent of the total funds disbursed to irrigation projects.

This, overdependence impaired much on the execution of irrigation projects as the approved funds to NIRC were not fully released by both government and development partners. The approved budgets to both government and donors and their respective releases are shown in Figure 6.1 (a&b).

Figure 6.1(a&b): Comparison of Approved versus disbursed funds by both government and Development Partners for Financial Year 2014/15 to 2017/18

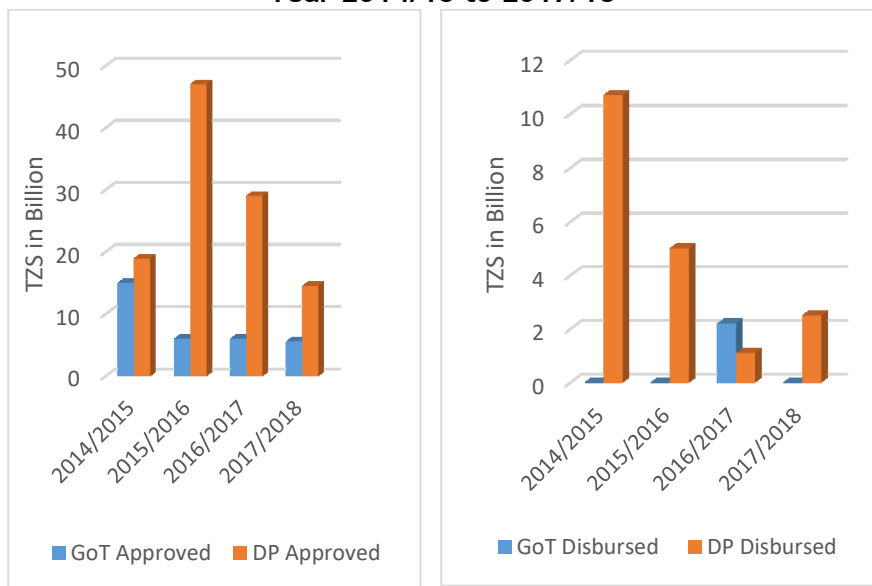


Figure 6.1a: Comparison between Approved funds by Government versus Development Partners (DPs)

Figure 6.1b: Comparison between Disbursed funds by Government versus Development Partners (DPs)

Based on figure 6.1a, the approved budget for the last four financial years were dominated by donor financing. The trend shows an increase in financing from TZS 19 to 47 billion from 2014/15 to 2015/16 followed by a decline from TZS 47 to 15 billion in the financial year 2017/18. On the other hand, approved budget reflecting the government contribution declined from TZS 15 to 6 billion from the financial year 2014/15 to 2017/18.

Based on figure 6(b), government released only TZS 2.5 billion in 2016/17 and no disbursement was made for the remaining three years. This trend makes the irrigation works to be vulnerable because of the uncertainty of funding from both development partners and government. Due to unreliable mode of funding to NIRC, the irrigation offices in zones changed their priorities. Planning and conducting feasibility studies were given low priority. Failure to plan for feasibility studies led to construction of irrigation infrastructure with cost variation (Refer table 6.3 on p.88)

6.3.1 Inadequate execution and use of Feasibility Study's items in Designing of Irrigation Schemes

This audit has found that about 85 percent (17 out of 20) of the reviewed irrigation work was done without or with partial feasibility studies. It was noted that cost variations, poor qualities of constructed irrigation infrastructure, and delay in completion of constructed irrigation schemes were attributed to either absence of feasibility studies or to feasibility studies conducted partially.

According to the interviews made with Zonal Irrigation Officials, aspects of feasibility studies are neglected because clients do not give it a priority. As a result, budget for implementing those aspects was not developed and when developed, its disbursement was low. Because of that, most of the completed irrigation projects were facing high risk to natural variation like climate change events, such as heavy rains or excessive draught. For example, skipping of aspect of feasibility studies was seen at Themba ya simba irrigation scheme where the canal started to bend inside due to presence of black cotton soil (soil with the properties of expanding and shrinking when dry or wet). This forced the project manager to seek an approval of a variation order so as to rectify the situation. As a result, there were a variation of TZS 11.8 million (Refer photo 6.1 on p.88).

Another impact was also noted at Wami-luhindo irrigation scheme where the element of environment and social aspect of feasibility study were ignored as a result, the culvert and a 10 meter length of a built canal was eroded because of excessive storm. The audit noted that there was no any mitigation measure designed to mitigate these fates. In this area, there was uncontrolled farming, grazing and other human activities in the upstream. Because of that, the water stream was widened and therefore the quantity of water that crossed the existing culvert was more than its designed capacity. Photo No. 6.2 depicts the destructed culvert. This destruction added cost of repairing and increased more risk of further destruction.

Generally this audit, noted a total of TZS 112.6 million paid through variations due to skipping feasibility studies. If the feasibility studies components were used when designing the projects, this variation amount would have been avoided thus catering for other irrigation activities. For more details refer to Table 6.3, that indicates the cost implication on every component skipped.

Table 6.3: Component of Feasibility Study Skipped Versus Cost Implication

Irrigation zone	Irrigation scheme	Component skipped	Cost variation caused (TZS million)
Kilimanjaro	Themba ya simba	Soil studies	11.8
	Kigongoni	Geotechnical study	4.9
	Kirya	Geotechnical study	23
Mwanza	Buhangaza	Preliminary design	26
	Kyota	Preliminary design	4.9
Mbeya	Mgambalenga	Geotechnical study	42
Total			112.6

Source: Auditors' analysis using data from Progress Reports

Based on Table 6.3, it is observed that skipping of other components of feasibility studies had a significant impact on the produced infrastructure. Mbeya irrigation zone seemed to have higher variation of TZS 42 million, followed by Buhangaza which had a variation of TZS 26 million. If the designs were carried out properly this amount would have been used to other part of unfinished infrastructure.



Photo 6.1: Bending inside of Themiya Simba canal due to impact of black cotton soil, taken by auditors on 26th November 2018



Photo 6.2: Destroyed culvert (Circled red) and construction activities of new structure of aqueduct at Wami-Luhindo Irrigation Scheme. This was due to the impact of skipping aspect of environment on the feasibility study as it was taken by Auditors on 12th July 2018

6.4 Inadequate Supervision of the Construction Activities of Irrigation Infrastructures

National Irrigation Commission through its respective irrigation zones are mandated by the National Irrigation Act, 2013 to administer all irrigation activities carried out in the country. Despite the Commission being vested powers to supervise the irrigation activities in the country, the Commission has not fully been exercising its supervisory roles.

Due to supervisory inadequacies, the following were noted: 40 Percent of the irrigation schemes that were implemented during the period under review experienced cost overruns, while 76 percent experienced delays in completion. Delays in project completion and project completion with cost overruns are both have an impact in

delivering services to farmers. The following sections explain in details the time and cost overruns noted.

6.4.1 Inadequate Time Control in the Execution of Irrigation

i) Time Overruns

The audit team reviewed project progress and completion reports from visited irrigation zones, and it was noted that 76 percent of all the reviewed irrigation projects were completed with delays (See Table 6.5).

It is deduced that irrigation schemes that were constructed at Morogoro irrigation zone had delayed by 100 percent. It was further noted that schemes implemented at Mwanza irrigation zone had delayed for about 63 percent. The remaining irrigation zones had projects delay of more than 60 percent.

Delays in scheduled completion of projects can lead to additional deterioration of infrastructure that could have been avoided by timely completion of the relevant project.

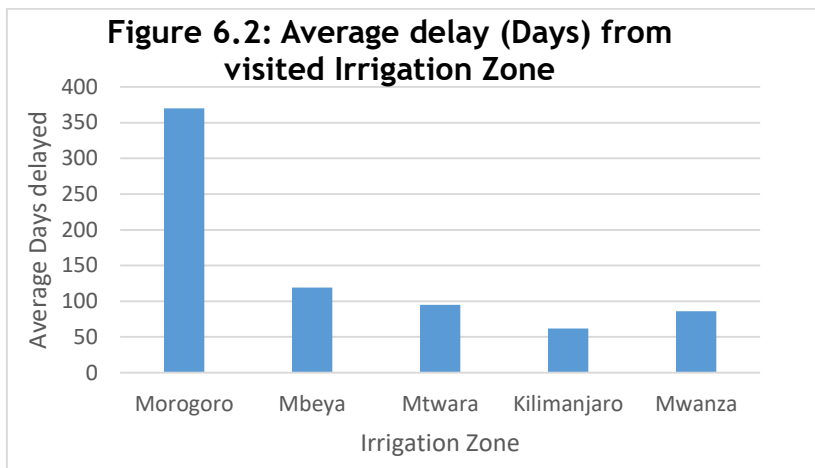
Table 6.5: Extent of Irrigation Project Delays experienced in visited zones in Financial Years 2014/15 to 2017/18

Irrigation Zone	Number of Projects reviewed	Number of Projects completed without delay	Number of Projects completed with delay	Percentage delay
Morogoro	14	0	14	100
Mbeya	26	8	18	69
Mtwara	18	5	13	72
Mwanza	8	3	5	63
Kilimanjaro	17	4	13	71
Total	83	20	63	76

Source: Auditors' analysis from SSIDP Project Status for Batch I and II

It was further analysed that the average contract duration of all 83 irrigation schemes was 165 days, and it was noted that 25 percent of all the irrigation schemes had delayed for more than 192 days. This delay is greater than the average contract duration of all the reviewed irrigation schemes.

It was further noted that, average delays in completion varied from one irrigation zone to another as it is shown in figure 6.2



Source: Auditors' analysis based on SSIDP project status reports batch I and II

Based on figure 6.2, the assessment of the delays in days from all of the zones indicates that Morogoro zone had the highest delays whereby contracts were delayed by an average of 370 days.

In the same zone, the minimum delay was 62 days while the maximum delays was 1054 days. Review of progress reports and interviews made with Zonal Irrigation Officials, noted that, there was bad timing as many construction works were scheduled to be conducted during rainy or cropping season.

On the other hand the assessment indicated that Kilimanjaro Irrigation Zone had the minimum average delays whereby the contracts were delayed by an average of 114 days, and in the same zone the minimum delay was two days while the maximum delays was 297 days.

Review of Irrigation Project Progress and Project Implementation Reports²¹ noted four main reasons that caused projects completion delays, those reasons were the following:

- Contractor's default due to lack of equipment and skilled personnel;
- Unrealistic design;
- Improper construction scheduling; and
- Delayed payments to contractors.

The frequency for each cause from each irrigation zone has been shown in terms of scores (See Table 6.6):

²¹ Site meeting Report Number 1-5 of Lumuma Irrigation Scheme, Monthly Progress Report No.2 of Chikwedu-Chipamanda; Projects Implementation Status for Mtwara and Mbeya Irrigation Zones

Table 6.6: Causes of Delays and their Scores in Visited Irrigation Zones

Cause of delay	Irrigation Zone					Total occurrence
	Morogoro	Mbeya	Mtwara	Kilimanjaro	Mwanza	
	Number of occurrence					
Improper construction scheduling	17	5	7	11	4	44
Unrealistic design	5	1	0	6	4	16
Contractor's default due to lack of equipment and skilled personnel	4	1	3	3	0	11
Delayed payments	1	0	5	0	0	6

Source: Auditors' Analysis Based on SSIDP Project Status Reports Batch I and II

From Table 6.6 above, it is deduced that improper construction scheduling for project implementation had higher scores of 44 when ranked. This is to say that delays of many projects were the result of schedules that were not realistic as construction works fell during heavy rainfall despite the fact that most of the construction contracts had short duration.

Also, unrealistic design was the next in frequently occurring to causing delay in the reviewed projects as it occurred 16 times. Among visited zones, Morogoro was much affected by bad timing in implementing projects as it occurred 17 times on the reviewed projects, followed by unrealistic design which occurred five times. Delayed payments to contractor was the least occurred cause of delays. It occurred five times in Mtwara and only occurred once in Morogoro zone. The identified causes of delay is explained hereunder:

- **Unrealistic design**

Unrealistic design was among the factors that contributed to project delays, as the works had to be stopped to seek for approval of a new design or the work was stopped after finding the design was not matching with the actual situation. For example, at Kyota Irrigation Scheme, the item 3.3 (*cross drainage structure at chainage 480*) in the BoQ amounting to TZS 3.4 million which had already been constructed on previous work was included as an impact of designing without site visiting. Furthermore, there were errors in calculating

BRC²² which resulted into cost variation of TZS 4.9 million. This variation was among the factors that contributed to a construction delay of 127 days.

Meanwhile at Mapama Irrigation Scheme in Kilimanjaro Irrigation Zone unrealistic design and missing dimensions and drawings for flood protection bund was experienced. As a result, the work stopped to seek an approval, where it was granted a time extension of 32 days.

- **Delayed payments to contractors**

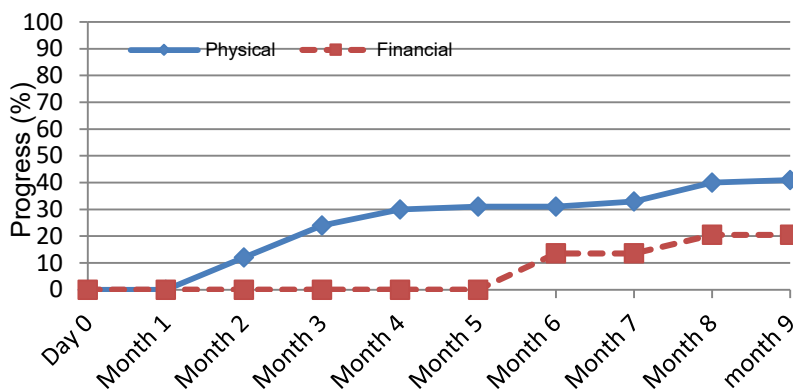
Delayed in payment to contractors was another reason that contributed to delay in completion of constructed works. This audit noted that five out of 18 irrigation schemes that were constructed at Mtwara Irrigation Zone delayed due to delayed payment to contractors.

While one out 13 irrigation schemes constructed at Morogoro zone delayed due to delay in payments. The delay in payment to contractor had significant impact in physical progress of the constructed works (See figure 2) as it was observed at Nakahuga Irrigation Scheme in Mtwara Irrigation Zone.

²² A wire mesh used in construction industry, its initials stand for the word British Reinforcement Company (BRC)

Figure 6.3: The Impact of Financial Delays Versus Physical Progress of irrigation Project

	Day 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10
Physical	0.0 %	0.0 %	12.0 %	24.0 %	30.0 %	31.0 %	31.0 %	33.0 %	40.0 %	41.0 %	43.0 %
Financial	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	13.6 %	13.6 %	20.5 %	20.5 %	20.5 %



Source: Monitoring sheet for Nakahuga Irrigation Scheme 30th April 2018

Based on figure 6.3, it is indicated that physical progress of the project is much dependent on the cash flow of the contractor. For this case the contractor continued working without being paid for five months, where he only achieved 31 percent of the physical progress. This achievement recorded on the first half of the contractual period. For the next five months, the contractor managed to increase only 12 percent of the physical progress making a cumulative progress of 43 percent, while the contractual period was over. The related cumulative payments made was only 20.5 percent.

- **Contractor’s defaults due to lack of equipment and skilled personnel**

There were incidents where the delayed completion of construction works were caused by the kind of contractor deployed. Contractor’s problems are explained in the following scenarios:

Inadequate equipment, artisans and labourers

Review of project files of Buhangaza, Kyota, from Mwanza irrigation zone, Chikwedu-Chipamanda for Mtwara Irrigation Zone and Siginali for Morogoro irrigation zone showed that contractors deployed staff who did not have adequate knowledge and skills to the works. In

addition to that, at Siginali, Tulokongwa and Nyamweke Irrigation Schemes for Morogoro Irrigation Zone the contractors did not deploy adequate equipment for works. For example at Tulokongwa irrigation scheme, the contractor demobilized two excavators immediately after the advance payment was made to him. The impact noted due to labourers and equipment shortages is as shown in section 6.4.2 table 6.9.1

Generally, delay in project completion had an implication to farmers who intend to use the given irrigation infrastructure for agricultural production. Farmers crops suffered wilting due to water absence caused by delayed completion of the irrigation infrastructure.

6.4.2 Inadequate Cost Control

- **Cost Overruns**

It was noted that 31 out of the 79 reviewed irrigation schemes which represent 40 percent were implemented at costs that were higher than the originally agreed contract prices. Generally, the total contract sums in all the visited zones had raised by 2.9 percent equivalent to TZS 665.6 million see (Table 6.7).

Table 6.7: Increased Amount from Original Contract Prices for the reviewed Irrigation Projects

Irrigation Zone	Total Agreed Contract Sum (TZS Billion)	Total Actual Contract Sum (TZS Billion)	Amount increased (TZS Billion)	Percentage Increased
Morogoro	3.71	3.724	0.014	0.37
Mbeya	10.601	10.853	0.252	2.4
Mtwara	3.515	3.648	0.133	3.8
Kilimanjaro	3.83	3.92	0.09	2.4
Mwanza	1.601	1.778	0.1766	11
Total	23.257	23.923	0.6656	2.9

Source: Auditors' Analysis based on Project Status Reports from ZIOs

Table 6.7 it indicates that for the visited zones, the percentage increase in price ranged from 0.37 to 11, where Mwanza topped the list with an increased project cost of 11 percent, which was equivalent to TZS 176.6 million. Mtwara Irrigation Zone had an increased cost by 3.8 percent which was equivalent to TZS 133 million. Table 6.8 shows percentages in the number of schemes constructed within, below, and above the contractual prices.

Table 6.8: Percentage numbers of Irrigation Schemes Constructed above Contractual Price

Irrigation Zone	Total number of schemes	Schemes constructed above contractual price	Percentage	Number of Addenda
Morogoro	10	2	20	2
Mbeya	26	10	38	21
Mtwara	17	8	47	6
Kilimanjaro	17	6	35	10
Mwanza	8	5	63	9
Total	78	31	40	48

Source: Auditors' Analysis using data from SSIDP Project status Report for batch I and II

Based on Table 6.8 it is deduced that in all the irrigation zones visited, 31 out of 78 irrigation schemes which is equivalent to 40 percent were constructed above their contractual prices. The severity was noted at Mwanza Irrigation Zone where 63 percent of the schemes were constructed above the contractual price. Morogoro was least in cost as only 20 percent of its schemes were constructed with cost overruns.

Among the irrigation zones visited, Mbeya Irrigation Zone had a total of 21 out of 48 addenda noted in all the irrigation schemes. It was further noted that Kilimanjaro Irrigation Zone was the second zone in having a large number of addenda as it had 10 addenda.

According to project files of the reviewed projects, cost overruns was due to three main reasons:

- Contactor's incompetence;
- Addition of work; and
- Unrealistic design.

Each of the causes of cost overruns was grouped based on the frequency in the occurrences on the irrigation zones visited.

Table 6.9: Number of Occurrences on Reasons caused Cost increase from Visited Irrigation Zones

Causes of Cost Overruns	Irrigation Zone					Total score of occurrence
	Morogoro	Mbeya	Mtwara	Kilimanjaro	Mwanza	
	Number of Occurrence					
Contractor's incompetence	1	1	1	4	2	9
Addition of work	2	21	6	10	9	48
Unrealistic design	4	1	1	6	2	14

Source: Auditors' Analysis from SSIDP project status Reports

Based on Table 6.9, it is deduced that addition of work had higher scores of 48 compared to the score of other reasons. This is to say that additional works contributed to the cost overruns of the reviewed projects as most of the work added were caused by inadequate design and inadequate carrying-out of feasibility studies. The causes for cost increase on irrigation projects are elaborated below:

a) Contractor's incompetence

Review of progress reports records of site meetings and interviews with Zonal Irrigation Officials indicated that contractor's incompetence affected project progress in different ways. The contractor's incompetence is attributed to inadequate supervision of project managers, as a result, projects are constructed below the standard, delayed and with elevated costs.

Contractors need to be supervised daily as many of them are executing more than one projects while having inadequate capital. That being the case, there is a risk for the contractor to demobilize equipment from one site and shift them to another site.

For example, at the construction of Tulokongwa irrigation scheme, the contractor demobilized two excavators after being paid an advance payment while the intended work was not achieved. Further, contractor's problems identified is as shown in (Table 6.10), which also indicates that cost and quality of the constructed work.

Table 6.10: Contractual Problems Identified and noted impact

Irrigation Zone	Scheme	Contractor's problem identified	Noted Impact
Kilimanjaro	Mapama	<ul style="list-style-type: none"> Contractor failed to finish the project on time regardless of being warned 	Contractor deducted liquidated damages of about TZS 5.9 million
	Kituri	<ul style="list-style-type: none"> Contractor failed to finish the project on time regardless of being warned 	The Project was terminated
Morogoro	Signalii	<ul style="list-style-type: none"> Poor contractors equipment lack of sufficient technical personnel lack of financial capacity 	The project delayed for 483 days
	Tulo/Kongwa	<ul style="list-style-type: none"> Contractor had an experience on road construction and building works but not on irrigation work construction 	The project delayed for 432 days
Mtwara	Chikwedu-chipamanda	<ul style="list-style-type: none"> Contractor's key personnel and equipment were not present on site 	Project delayed for 94 days

Source: Auditors' Analysis from the project progress reports

b) Addition of work

In the visited irrigation zones, Mbeya had more addenda for additional work. Out of 48 noted addenda in the five visited zones, Mbeya had 21 addenda, while Kilimanjaro Irrigation Zone had 10 addenda. It was noted that the observed addenda was attributed to many factors, but the most dominating one was unrealistic design that led to inadequate estimates of work items in BoQ, and inadequate carrying-out of feasibility studies.

c) Unrealistic design

This audit noted that unrealistic design was mostly contributed by designing which was conducted without having site visiting. Unrealistic design was observed in reviewed irrigation schemes. For example: At Kyota irrigation scheme, the item 3.3 (*cross drainage structure at chainage 480*) on the BoQ amounting to TZS 3.4 million had already been constructed on previous work as an impact of designing without site visiting. Though this amount was not paid,

rather it was shifted to new unplanned work of constructing a charcoal dam.

Likewise, at Mapama Irrigation Scheme in Kilimanjaro zone, unrealistic design led to shifting of contractor’s working section from a chainage of 600m-1600m to a new working section with a chainage of 4000m - 5000m. In addition, missing dimensions and drawings for flood protection bunds were encountered.

The implementation cost increase for SSIDP irrigation projects were slightly lower because the project had a fixed budget. Cost overruns were mostly controlled by project re-scoping where works were reduced from the previous agreed scope. (See Table 6.11)

Table 6.11: Irrigation Schemes with Variation that caused Re-scoping

Irrigation Zone	Scheme	Variation caused re-scoping
Kilimanjaro	Kigongoni	<ul style="list-style-type: none"> • Design of middle right of way between middle and right abutment walls of headwork that changed height from 3.4m original design to 2.8m • An increase in length of stilling basin protection works by 4.5m to reduce scoring and increase length of stilling basin section from 22.47m to 23.85m.
	Them ya Simba	<ul style="list-style-type: none"> • Error in calculation of quantity of mass concrete for base.in B.O.Q. Resulted in change of design of canal cross section • Black cotton soils found along the main canal 1,155m. R.C slabs on top of walls and sand layer on base and walls provided. This caused a change in design as the canal was tied with reinforced beams. Finally it resulted to cost variation of TZS 11.8 million
Mwanza	Buhangaza	<ul style="list-style-type: none"> • Errors in calculation of BRC for BoQs indicated the BRC required to be of 3314.43 kg for the length canal of 1578.3m. this was enough for canal length of 466.55m only • Already excavated canal length was estimated to be 1578.3m while it was 590m only • BoQ proposed the Division Box/Drop structure to be 10, while the required was only 5

	Kyota	Errors in calculation of BRC for, BoQ indicated the BRC required to be 847kg for the canal length of 385m. This quantity was only enough for canal length of 119.23 m. Hence the required BRC for 385m was 1888.04 kg.
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Source: Auditors' analysis using data from Progress Reports

Impact of project re-scoping was the decrease in services that would have been obtained from a fully operated infrastructure.

6.4.3 NIRC did not conduct independent quality control activities to ensure standards are met

For the 20 sampled irrigation schemes from all zones, no zone that conducted independent quality control. This was caused by powers of NIRC and its subsequent zones not exercised because Zonal Irrigation Officials played backstopping roles instead of supervisory roles. The reason being that the, guidelines (Comprehensive guideline for irrigation projects) are not up-dated to embed current roles of Zonal Irrigation Offices of the overall supervision of irrigation activities in the country as stipulated by National Irrigation Act, 2013.

Further, inadequate progress on monitoring of construction works was noted. Project Managers were in-charge in managing all the contractual works on site on behalf of clients. For those projects that were directly supervised by Project Managers from LGA, it became difficult for Zonal Irrigation Engineers to monitor. Because of that, track of projects depended on progress reports sent to Zonal Irrigation Officials (ZIOs) and invitations to attend regular progress site meetings.

Additionally, the audit noted that²³ ZIO did not have set mechanisms to track work progress from Project Managers appointed by LGAs. As a result, ZIO took most of the actions depending on information. Apart from depending on site meetings schedules, and progress reports to make decisions, the audit also found that Zonal Irrigation Officials lacked sense of independence as they could not take any action when there was a breach of National Irrigation Act. Where the guideline mentions the zones as technical back stoppers, the Act identifies them as the overall supervisors of all irrigation activities carried out in the country.

²³ Interview minutes, and sampled site meetings from Zonal Irrigation Offices of Morogoro, Mbeya, Mtwara, Mwanza and Kilimanjaro

The impact of ZIO not conducting independent quality controls was further evidenced at Mbeya irrigation zone. For example for the irrigation schemes of Mwenda-mtitu irrigation scheme (See photo 6.3 below), the canal embarkment was not well supported to control sand and soil falling on the canal. This posed a risk of a canal clogging. ZIO did not introduce any mitigation measures such as building gabions or planting grasses to control adverse impacts.



Photo 6.3: Irrigation canal for Mwenda-Mtitu irrigation Irrigation Scheme that is susceptible to be filled with landfalls as it was taken by auditors on 21st July 2018

CHAPTER SEVEN

PROVISION OF EXTENSION SERVICES

7.1 Introduction

The provision of extension services to farmers is one of the important aspects in raising productivity of the farming activities and provides a significant contribution to the development of the agricultural sector in the country. Provision of good extension services to farmers guarantees the conveyance of modern farming practices and processing that increases crop yields and value to the agricultural outputs. This chapter presents general observations and related matters on provision of extension services to farmers as reported by performance audit reports in since 2015-2019.

Two Performance Audit reports and one Follow-up Audit report have been summed up to develop observations presented in this section. The audit reports include:

- *Performance Audit on Provision of Agricultural Extension Services to Farmers*
- *Performance Audit on the Implementation of Strategies for Managing Agricultural Crop Pests and Diseases*
- *Follow-up on Provision of Agricultural Extension Services to Farmers*

The provision of extension services in Tanzania is mainly done by the Ministries of Agriculture and the President's Office - Regional Administration and Local Government (PO-RALG). The role of the Ministry of Agriculture is to manage, monitor and evaluate the implementation of agricultural policy and guidelines for the provision of agricultural extension services. President's Office, Regional Administration and Local Administration (PO-RALG) is responsible for overseeing the implementation of agricultural extension services through Regional Secretariats.

This chapter, therefore, provides a description and analysis of the main observations directly related to the provision of extension services in Tanzania. The chapter highlights observations on guidelines for provision of extension services, weaknesses on planning for provision of extension services, provision of extension services and monitoring and evaluation of the extension services provided to farmers in Tanzania.

7.2 Inadequate provision of extension services to farmers

The current provision of extension services for farmers is not sufficient and does not guarantee the conveyance of modern farming practices and processing that increases crop yields and value to the agricultural outputs. The observations made through the audits conducted in the agricultural sector points out weaknesses in the provision of extension services in the areas of methodologies for provision of services, coverage of the services and resource mobilization.

7.2.1 Limited methodologies for delivering the Extension

Services to farmers

The audit team noted that there was a very limited use of methodologies for delivering extension services to farmers. The guidelines for provision of extension services provided a room for delivering the service through combination of dissemination pathways such as demonstration plots/Field Farm Schools, farmer field days, exchange visits/study tours, technical publications, training manuals/guidelines, radio/TV programs, video shows, agricultural shows/exhibitions, ICT facilities including mobile phones, websites, emails and use of WARCs (equipped with technical information). However, the audit noted that the delivery of extension services was mostly using demonstration plots with a very limited use of Ward Agricultural Resource Centres.

The audit further noted that the Ministry of Agriculture had already started using Radio and Television programs in providing extension services since May 2018. However, the assessment of a number of extension officers using the guidelines per annum as required by the recommendation was not done.

The audits noted also that IT tools were developed and used by extension workers: Field Farm School (FFS) Training manuals; Radio and TV programmes; demonstration plots; and Nane-nane farmers' exhibition guidelines. However, there was no substantial evidence of the use of FFS training manual and demonstration plots.

7.2.2 Ineffective tools for delivery of extension services

The audit team noted that farmers were not participating in demonstration plots or FFSs programs, which were used as one of the tools for promoting best farming practices. Despite this being the major approach that was used to transfer new agricultural technologies and good agricultural practises, the level at which new and improved agricultural technologies and good agricultural practices, had been adopted by farmers was very low. Table 7.1

indicates the extent to which farmers participated in the demonstration plots/FFS.

Table 7.1: Ratio of Farmers who joined and participated in the FFSs in the visited LGAs

Financial Year	Total No of Farmers ²⁴	Total No. of Farmers in FFSs	Ratio of Farmers Participating in FFS
2009/10	1,041,492	11,722	1:100
2010/11	1,077,834	8,912	1:100
2011/12	1,118,956	12,103	1:100
2012/13	895,644	9,025	1:100

Source: Wards Agricultural Monthly Reports

Table 7.1 indicates that there was a very low response and motives for farmers to join the FFS in the visited councils. In all the regions the ratio indicates that in every 100 farmers only 1 farmer had joined and participated in the FFS trainings. Over the years, the number of farmers participating in the FFS programmes has been declining. The number of farmers in FFS is declining because of lack of enough extension officers who could organise and train the farmers in FFS.

7.2.3 Limited Transfer of Agricultural Technologies and Good practices

The audit team noted that the transfer of knowledge particularly on new agricultural technologies and good practices to farmers was very limited because of the insufficient number of FFSs established. The guidelines for provision of extension services require that there is an establishment of at least 8 FFSs per season at a village level.

Through the interviews held with officials from the Ministry of Agriculture, PO-RALG, RSs and LGAs it was noted that the number of FFSs established were less than eight per season which limited the transfer of knowledge on technologies and good practices to the farmers. Field Farm School is the most commonly used method and therefore was expected to be the most effective methodology in transferring of the knowledge to the farmers. The reasons for establishment of less number of FFS's than expected include the lack of realistic plans which included plans for establishing FFS in areas where the number of extension officers were not sufficient to provide extension services and the misallocation of funds which were set for establishing FFSs in some of the LGAs.

²⁴ This is a statistic for the number of farmers registered in the 7 visited LGA's only.

7.2.4 Inadequate establishment of Ward Agricultural Resource Centres (WARC's)

It was noted that the number of Ward Agricultural Resource Centres constructed were less than the planned number of WARCs. According to WARCs guidelines, each LGA was required to establish at least one Ward Agricultural Resource Centre in a ward, so that farmers could increase their access to quality agricultural technologies, information and advice. For instance, out of 255 wards in the visited district councils in 2012/13, only 11 (4 *per cent*) of the wards had established WARCs that were used by farmers.

The assessment of the plans and implementation of the construction of WARCs indicates that LGAs received about 95 percent of their budgeted funds for construction of WARCs. However, they were able to construct only 17 percent of the number of WARCs they planned for the same funding level. According to the interviews conducted with officials from the Ministry of Agriculture, PO-RALG and RS it was noted that most of the funds which were allocated for construction of WARCs were miss-allocated for use into other activities.

7.3 Factors Contributing to Insufficient Provision of Agricultural Extension Services

The audits conducted on performance of agricultural sector revealed existence of various factors that contributed to insufficient provision of agricultural extensions services. These factors in turn contributed to inadequate provision of extension services which affected the performance of the extension officers in the field. The report discussed common issues on the existing guidelines on the provision of extension services, inadequate plans for provision of extension services, ineffective financing of the extension services, capacity building of the agricultural extension officers and inadequate monitoring of the extension services. The following were highlighted to be the factors that contributed to insufficient provision of extension services:

7.3.1 Inadequate Guidelines for Provision of Agricultural Extension Services

The provision of extension services was not sufficiently guided by the extension services guidelines in a way that guarantees proper delivery of extension services to the farmers. The weaknesses were noted in the contents of the guidelines and the way guidelines were operationalized. The following sections provide details of the observations noted with regard to the guidelines for the provisions of agricultural extension services.

i) Extension Services Guidelines not availed to Agricultural Extension Officers

The audit team noted that guidelines for the provision of extension services were not availed to Local Government Authorities for use by the agricultural extension officers. The guidelines were supposed to be distributed for use to all Local Government Authorities since they were showing directives to the agricultural extension officers regarding their roles and responsibilities, and activities as well as how to do such activities.

On the other hand, the audits conducted on the provision of agricultural extension services noted that the extension services guidelines have been issued to the stakeholders involved in the provision of extension services including *Agriculture Non-State Actors Forum (ANSAF)*, *Muungano wa Vikundi vya Wakulima Tanzania (MVIWATA)*, PO-RALG, ONEACRE and Local Government Authorities following this audit. However, there is no evidence as to whether the guideline have reached all the Regional Secretariats and Local Government Authorities who are the key actors in effecting the use of the guidelines at the local levels.

ii) Guidelines not covering supervision activities

The audit noted that the guidelines for the provision of extension services did not cover the supervision activities. From the review of the guidelines, it was found out that there was no guidance regarding the coverage of the visits, criteria for selecting the areas to be covered per visits nor the focus of the visits.

Further review of the guidelines indicated that the number of the visits were not mentioned in the guidelines with exception of the Agricultural Sector Development Programme (ASDP) monitoring and evaluation framework of 2008 which requires the agricultural service thematic working groups to conduct supervisory visits to Local Government Authorities on a semi-annual basis.

iii) Non-compliance to Extension Services Guidelines

The audit team noted that the extension services guidelines were not abided to by the agricultural extension officers. It was noted that most of the extension officers were not performing their duties as elaborated in the extension services guidelines. The audit points-out that the Ministry of Agriculture and PO-RALG had not informed Agricultural Extension Officers on the importance of using these guidelines. The extension officers were not aware of their roles and responsibilities, due to the absence of the copies at the ward and

village levels. Hence, Agricultural Extension Services rendered were not in compliance with the procedures laid down in these guidelines.

7.3.2 Inadequate Capacity Building for Extension services providers

In order to effectively deliver the extension services to farmers, the extension officers need to have on-going training and capacity building interventions in order to equip them with new techniques in delivering the services and updates in the materials for training of the farmers. This would ensure that the extension services provided to farmers were of high quality and met the expectation of the farmers. However, the provision of capacity building to extension services officers was accompanied by weaknesses in the following areas.

i) Absence of Capacity Building Plans for Extension Officers

The audit team noted that neither training needs assessments nor training programs for agricultural extension officers and farmers were implemented. This was contrary to the guidelines for conducting and managing provision of extension services which require the LGAs to conduct training to agricultural extension officers according to their training needs.

The follow-up audit conducted noted further that the capacity building plan is still not yet available. The agricultural extension officers have been receiving capacity building training occasionally from the interventions of ASDP II, whereby only one training was conducted since 2015.

ii) Extension Officers not trained on the use of the manuals

The provision of extension services is highly dependable upon the availability of proper manuals to guide the activities of the agricultural extension officers. However, the audits indicated that the agricultural extension officers were not trained on the use of manuals particularly the manual for managing Maize Lethal Necrosis Diseases (MLND). This Manual was developed by the Ministry of Agriculture which was supposed to be used to train extension service officers who were responsible for disseminating surveillance knowledge to farmers on how to deal with MLND. For instance, Maweni and Makiba villages at Meru District Council which were among the highest affected areas with MLND, and yet farmers and agricultural extension officers were not well equipped with the knowledge of the disease.

iii) Agricultural Extension Officers were not trained on Pesticides Management

The audit team noted that the Agricultural Extension Officers were not sufficiently trained on pesticides management. There was no documented training plan in place for guiding the provision of pesticides training to be provided to agricultural extension officers. Implementation of mechanisms used by the Ministry of Agriculture to facilitate dissemination of pesticides knowledge to farmers and agricultural extension officers were inadequate. Farmers and agricultural extension officers were not adequately trained on pesticides management. This resulted to improper use of pesticides affecting the quality and quantity of produced crops, human health and the environment.

7.3.2 Uncoordinated plans for provision of extension services to farmers

The audits noted that plans for provision of extension services were not well coordinated between the Ministry of Agriculture and PO-RALG and most notably on the ratio between financial resources released and the available human resources for providing extension services and the release of financial resources for activities without having proper plans for implementation of the activities. These practices created potentially idle funds that attracted misallocation of funds into other activities in the respective LGAs.

i) Mismatch between human resources available and financial resources released

Our audit noted a shortage of agricultural extension officers serving farmers at different levels. The observation made from the seven visited LGAs indicated that the number of Village Agricultural Extension Officers (VAEO) were far below the required number as per Agriculture and Livestock Policy of 1997 while the funding levels were relatively higher. Table 7.2 shows the extent of shortage of farmers as compared to the standard rate per farm families.

Table 7.2: The assessment of the ratio of VAEO to farm families in the visited LGAs

Financial Year	VAEO	Farm Families	Ratio of VAEO to Farm Families
2009/10	177	418,901	1:2367
2010/11	182	439,283	1:2414
2011/12	268	459,213	1:1713
2012/13	365	475,001	1:1301

Source: Monthly Agricultural statistics reports by WAEO and VAEO

Table 7.2 indicates that the ratio of VAEO serving the farm families in the villages were higher as compared to the standard rate as per the Agriculture and Livestock Policy of 1997. The Policy requires that one VAEO to serve not more than 700 farm families. However, the situation then, in the visited LGAs indicated that one VAEO was serving an average of 1950 farm families with some of the VAEO serving about 2414 farm families.

On the other hand, the analysis from Table 7.2 shows that the situation is improving overtime since the ratio of VAEO to farm families has substantially improved compared to the situation in 2009/10. Even though, the target set by the Agriculture and Livestock Policy of 1997 is not yet reached.

Further analysis done to compare the available human resources against the available financial resources indicated that there was existence of potentially idle funds existing out of the funds potentially capable of being utilised by the agricultural extension officers. Table 7.3 shows the comparison between the available VAEO and the available funds for each of the village.

Table 7.3: Assessment of number of VAEO available against funds available

Financial Year	Ratio of VAEO to Village	Average Funds per Village	Potentially Idle Villages	Potentially Idle Funds due to Inadequate or non-work
2009/10	1:5	855,429	4	3,421,716
2010/11	1:5	596,288	4	2,385,152
2011/12	1:4	725,859	3	2,177,577
2012/13	1:3	725,859	2	1,451,718

Source: Monthly Agricultural Statistics, LGA's MTEF

Table 7.3 indicates that there was an existence of idle funds for some villages based on the funds released in the financial years 2009/10 to 2012/13. Based on the extension service guidelines, a standard that one VAEO can serve only one village effectively, however the current status of human resource indicates that 1 VAEO is serving four villages.

On the other hand, the situation seems to be improving, since the rate of potentially idle funds is declining over years. In 2009/10 the rate was 3.4 million while in 2012/13 the rate declined to 1.5 million of idle funds. The rate of decline in the idle funds was caused by the decline in the rate of funds allocated per village from TZS 855,429 to TZS 725,859 per village in 2012/13.

It was also noted through the follow up audit that the employment of agricultural extension officers has not yet been executed. The follow-up audit has noted that PO-RALG has applied for the recruitment permit from PO-PSM but they have not yet received a particular recruitment permit.

7.3.3 Ineffective funding for provision of agricultural extension services

The funding for the provision of extension services has not been effective to assist in providing smooth operations of the agricultural extension service activities. The financial resources allocated for agricultural extension services were not well managed and there were indications that the funds were not being used for the intended purposes. The weaknesses in financing of extension services were observed in the preparation of budget and financing activities rendered during the provision of extension service as detailed below:

- i) Under-budgeting of the operations for the provision of extension services

The audit team noted that plans for the provision of extension services were under-budgeted for some of the activities which affected the level of implementation and sufficiency of the extension services rendered to farmers. For instance, during financial year 2009/10 to 2012/13 there was a significant release of funds as per budget for extension services which included the allocations for the purchase of fuel for extension services.

However, agricultural extension officers were reported to use their own money to buy fuel and service the available transport facilities despite having a full release of funds as per budget in the particular activity. On the other hand, construction of WARCs was done below the demanded level despite of being fully financed as per the budget. The under-budgeting of the activities was also evidenced by the allocations made for the Thematic Working Group (TWG) supervision activities. Table 7.4 shows the extent of under-allocation of budgeting.

Table 7.4: Budget allocated for supervisory activities

Financial Year	Funds Allocated	Funds Disbursed	Percentage Disbursement
2010/11	5.7	5.7	100
2011/12	5.7	5.7	100
2012/13	5.2	5.2	100

Source: ASDP Basket Fund 2010/11 - 2012/13

Table 7.4 shows that the supervisory activities were allocated a sum of 5.7 million for conducting the supervisory activities for each of the financial year during the period 2010/11 to 2012/13. This was not sufficient to allow the group to conduct the supervisory activities throughout the country. Despite receiving the full amount at 100 percent as per budget, the activities were not conducted at a sufficient level to LGAS's on a semi-annual basis.

In addition,, the audit team noted that the capacity building grant allocations to visited LGAs decreased by more than 50 per cent for the years 2011/12 and 2012/13 while extension block grant was not provided during the same period. The interviewed agricultural officers at PO-RALG Sector Coordination Department pointed-out that the two types of funds had been used interchangeably by LGAs, although the Extension Block Grant (EBG) was mainly for the provision of agricultural knowledge to farmers, and Capacity Building Grant (CBG) was mainly for building capacity to agricultural extension officers, such as short training, buying and fuelling motorcycles. This led to Ministry of Agriculture's decision to cease releasing EBG, and instead combined these funds (EBG and CBG). The Local Government Authorities then remained with CBG funds only, which was a combination of both EBG and CBG.

ii) Misallocation of Extension Services Funds

The audit noted that funds that were initially planned to finance extension services were used for other activities that were not related to agricultural extension services. For instance, the Basic A-CBG allocations which were supposed to finance short-term and refresher training courses to farmers and extension officers were used to finance some of the LGA's staff to pursue bachelors and master's degrees (long-term training courses), rather than core functions of the Basic A - CBG. This was evidenced by the status of implementation of some of the activities which indicated low level of implementation despite the LGAs receiving full amount of funds budgeted for that activity. Table 7.5 shows the percentage funding against implementation of the activities received.

Table 7.5: Implementation levels for Extension Activities as compared to their funding levels in the visited LGAs

	Constructi on of WARCs (%)	Establish ment of FFSs (%)	Trainings for Extension Officers (%)	Trainings of Farmers (%)
Funding Levels	95	97	97	97
Implementatio n Levels	17	30	59	1

Source: LGA's Action Plans

Table 7.5 indicates that the implementation levels for the four major activities in the provision of extension services was lower than their corresponding funding levels. The lowest levels were observed with the training of farmers whereby only one percent of the planned training were implemented.

7.3.4 Inadequate Monitoring for the Provision of Agricultural Extension Services

The monitoring of the agricultural extension services was not done sufficiently to address the challenges faced in the implementation of the extension services. The activities related to monitoring did not provide sufficient information about the performance of the indicators and the progress towards achievement of the intended objectives in the provision of extension services as per ASDP and other agricultural interventions. The following weaknesses were noted in the monitoring of the extension services.

i) Absence of Monitoring and Evaluation Plans

The audit team noted that the Ministry of Agriculture and PO-RALG did not develop a monitoring plan for the extension services for the whole period that was under audit. As to why the monitoring and evaluation plans were not developed, interviewed officials from the Department of Crop Development (DCD) (Extension Service Section) said that monitoring and evaluation activity, previously (before 2013/14) was implemented by the Directorate of Policy and Planning (Monitoring and Evaluation Section). The reason being that the section was responsible for monitoring and evaluation of all ministries' activities, and thus was responsible for developing the monitoring plan.

The Monitoring and Evaluation Unit which is responsible for this started developing monitoring plans from 2013/14. However, there was no monitoring plan in place for the period before and after 2013/14. It was noted that the M&E activities were done annually based on the annual action plans but there was no specific M&E plan that was guiding the implementation of monitoring activities.

It was further noted through a follow-up audit that the Ministry of Agriculture still lacked a comprehensive Monitoring and Evaluation Plan. The Ministry was still using the annual action plan for monitoring the provision of extension services and did not have a long-term M&E Plan for monitoring the extension services.

ii) Limited coverage by supervision visits

The report noted that the coverage of supervision visits was not sufficient and was limited to some few regions. For instance, in 2009/10 and 2010/11 PO-RALG (DSC) conducted visits to only two regions (Lindi and Mtwara) focusing only on the implementation and performance of eight irrigation schemes. The supervision activities were conducted without having the supervisory visit plans for Ministry of Agriculture and PO-RALG. There were no criteria for choosing the areas to be visited or the coverage. This made the coverage to be situational based in such a way that the choice of regions to be visited depended on the performance situation of the LGAs observed from the progress reports.

On the other hand, it was further noted that the supervisory visits conducted by the Ministry of Agriculture were rarely focusing on provision of extension services to farmers. According to officials from the Ministry of Agriculture, the limited coverage of supervisory visits was caused by inadequate budgeting for the respective activities.

iii) Lack of corrective actions to improve the situation

The audit team noted that the Ministry of Agriculture and President's Office-Regional Administration and Local Government failed to take corrective actions to improve provision of extension services to farmers. Persisting farmers' problems that need solutions have not been addressed. Shortcomings in the LGAs, particularly in villages which limit the quality of the reports and thus the overall planning of the sector were not solved as they were unknown to LGAs and therefore to the Ministries. The review of four annual consolidated reports and 35 LGAs quarterly progress reports submitted to the Ministry of Agriculture by PO-RALG, as well as interviews with LGAs agricultural officers and farmers indicated the existence of long-standing problems that have constrained the provision of extension services to farmers.

On the other hand, the follow-up audit conducted noted that there was still lack of corrective actions taken from the issues noted from monitoring and supervision visits.

7.3.5 Impact of Inadequate Provision of Extension Services

The conducted audits assessed the impact of the provided extension services to farmers and established whether there were any notable changes on the practices of the farmers that would indicate the improvements or decline of the farmers' growth. The following

aspects were noted on the performance of the farmers in relation to the provided extensions services.

i) Low outcomes on the adoption of agricultural technologies

The audit team noted that the majority of the farmers were still using traditional practices in their farming. For instance, in some of the visited villages, shifting cultivation was used as a means of maintaining soil fertility, instead of using fertilizers. Moreover, very few farmers were using improved seeds, instead they were relying on seeds they had saved from the harvests of the previous season. All of these were supposed to be addressed by the extension services provided to farmers and were expected to influence the farmers on adopting the modern ways of farming.

The low outcome on adoption of technologies was mainly caused by a limited enrolment of the farmers on the FFS and demonstration farms and the limited establishment of the WARCs which are the main tools for transferring of the knowledge to farmers. The assessment of the enrolment of farmers in FFS indicated that only one percent of the farmers were enrolled in the FFS out of the total record of the farmers. On the other hand, the establishment of the WARCs reached only 17 percent of the planned WARCs in the visited LGAs.

ii) Increase in yields for farmers enrolled in FFS

The audit noted that there was a notable impact on the average yield for farmers who were provided with extension services in comparison with those who were not provided with the service in the 7 visited LGAs. This was contributed by the use of education offered on improved agricultural technology which was provided through extension services. Analysis was done by comparing the farmers who got support through extension services with farmers who did not get any support. Table 7.5 shows average yield in 100 kg bags per hectare for the period 2009/10 - 2012/13 from the 7 visited LGAs.

Table 7.6: Average Yield in 100 kg Bags/Hectare for the years 2009/10 - 2012/13 in the visited LGAs

Crop	Non FFSs Members	FFSs Members	Average increase in production (times)
Maize	61	161	3
Cassava	7	22	3
Sorghum	1	13	13

Source: Agricultural Sector Development Programme (ASDP) reports

Table 7.6 shows that the average yield in 100kg bags per hectare was higher for FFS members as compared to non-FFSs member in the visited councils. For the three crops sampled the FFS members were on average 8 times more productive than the non-FFS members.

CHAPTER EIGHT

PROVISION OF SUPPORT SERVICES TO AGRO- PROCESSORS

8.1 Introduction

This chapter presents findings on the provision of support services to agro processors in the country. It covers one of the four strategic areas for agricultural interventions on strengthened and competitive value chain for agricultural products.

Findings are categorized into planning, extent of growth and provision of required supports which included training, financial, technology and market supports. A Performance Audit Report on the provision of support and services for Small and Medium Enterprises was used to sum up the finding of this chapter.

Key actors involved in the provision of support services to agro-processors were the Ministry of Industry, Trade and Investments (MITI) and Small Industries Development Organisation (SIDO). Small and Medium Enterprises included under this audit were agro-processors.

8.2 Insufficient Support Services to agro-processors

The audit indicated that SMEs including agro-processors were not sufficiently provided with required support services on technology, funds, market as well as training that would facilitate in adding value for agricultural products as detailed here under:

8.2.1 Inadequate Provision of Training Support Services

The number of Small and Medium Enterprises (SMEs) benefiting from the training support services from SIDO are few compared to the total number of SMEs recognized by MITI countrywide and those registered by SIDO as detailed in Table 8.1.

Table 8.1: Percentage of SMEs Trained by SIDO Countrywide

Financial Year	Estimated No of SMEs countrywide	No of SMEs trained by SIDO	Percentage of SMEs trained by SIDO
2013/14	3,230,000	8,558	0.3
2014/15	3,320,000	16,490	0.5
2015/16	3,500,000	19,058	0.5
2016/17	3,800,000	16,782	0.4

Source: MITI MSME Estimates and SIDO Management Information Systems (2018)

From Table 8.1, it is indicated that the outreach of training conducted by SIDO when compared countrywide is very low. In the past four years SIDO has managed to train a total of 60,888 SMEs which is an average of 15,222 per annum. This represented only 0.4 percent of the estimated total number of SMEs in the country as per statistics provided by the Ministry of Industry, Trade and Investments. The coverage was therefore not significant as compared to the number of all SMEs in need of the training.

It was also indicated that SIDO had managed to train an average of only nine percent of all SMEs registered in their databases. This, on the other hand, had contributed to the production of low quality products which were unable to compete in the market that contributed to slow growth of the industrial sector in the country.

Besides, the audit indicated that training outreach was still limited in the two subsectors, namely; agro-processors and light engineering focused in this audit. The total number of SMEs trained in Agro-processing represented an average of 14 percent per annum of the total SMEs, while they represented only 1.4 percent of the total SMEs registered by SIDO. On the other side, the total number of SMEs trained in light engineering represented an average of two percent of all SMEs trained by SIDO, while they represented only 0.2 percent of the total SMEs registered by SIDO as further described in Table 8.2.

Table 8.2: Percentage of SMEs Trained in Agro-processing and Light Engineering

Financial Year	SMEs in Agro Processing who were trained by SIDO	Percent out of total trained	Percent out of total registered	SMEs in Light Engineering who were trained by SIDO	Percent out of total trained	Percent out of total registered
2013/14	910	10	1	168	2	0.2
2014/15	2470	15	2	291	2	0.2
2015/16	2893	15	1.5	206	1	0.1
2016/17	2799	17	1.2	284	2	0.1

Source: SIDO Annual Performance reports & MIS Training Reports (2018)

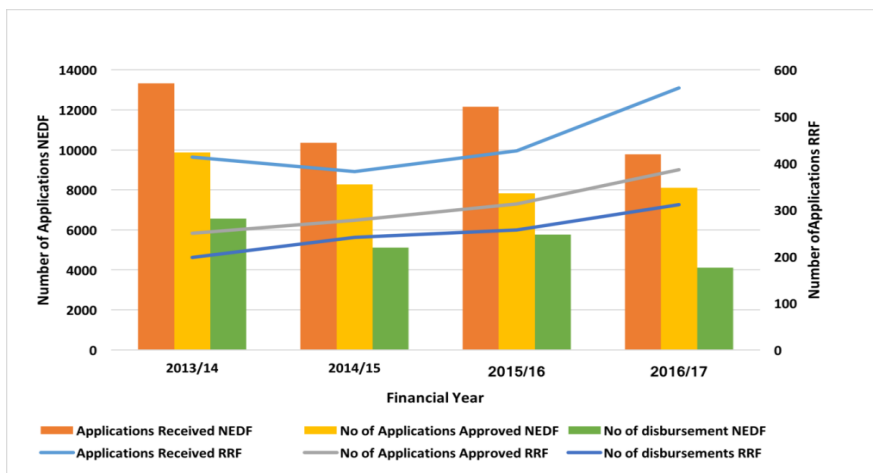
On the other hand, the report assessed the distribution of training provided to agro-processing and Light Engineering's SMEs and it was noted that the training on agro-processing had above average number of training conducted by SIDO for the past four years. A total of 341 training with an average of 85 courses per year were conducted, while, there was an average of only 16 training in Light

Engineering per year in all of the SIDO regional offices. The reason was due to the accessibility of funds from development partners who are more centered on funding for training in agro-processing than other types of training.

8.2.2 Inadequate disbursement of loans

According to SIDO Corporate Strategic Plan 4.5.1, SIDO is supposed to provide credit services to Small and Medium Enterprises in accordance with their needs and demands in order to enhance their financial capacity. But, the credit services at SIDO have not been sufficiently provided as required by the plan. Figure 8.1 shows the comparison between the loans applications received against those approved and those disbursed.

Figure 8.1: Comparison of Loans Applications, Approvals and Disbursement for National Entrepreneurship Development Fund (NEDF) and Regional Revolving Funds (RRF)



Source: Auditors' Analysis of loan applications based on data from Loan Performer and MIS Reports (2018)

Figure 8.1 indicates that the disbursement of the loans has not been sufficient to meet the demand of applications and approvals for loans request. For the period from 2013/14 to 2016/17 loans applications and approvals were higher than disbursements. However, SIDO had not managed to sufficiently disburse the loans it had approved. The highest number of National Entrepreneurship Development Fund (NEDF) loan applications was noted in 2013/14 when there were 13,330 loan applications which were also accompanied by the highest number of loan approval at 9,872 as well as loan disbursements at 6,564.

The highest number of applications for Regional Revolving Funds (RRF) was noted in 2016/17 when there were 561 applications which were also accompanied by the highest amount of approved RRF loans. Figure 8.1 also indicates that the trends of loan applications for NEDF are declining every year while the applications for RRF are increasing each year. Overall the trend shows that since 2013/14 SIDO had received and approved a total of 35,315 applications but it had disbursed a total of only 22,563 loans which was equivalent to 63 percent of the total approved loans. This indicates that 37 percent of the loan applications were not provided with funding despite having their loans qualified.

8.2.3 Inadequate Provision of Technological Support Services

Through its Strategic Plan for the period 2014/15 to 2016/17, SIDO planned to develop strategies that would enhance ease of access to technology information and conducting transfer and dissemination of relevant technology. This was planned to go hand in hand with the provision of upgraded technologies to existing Small and Medium Enterprises as noted in the same Strategic Plan.

The level of dissemination of modern and upgraded technologies was not sufficient to address the specific objectives. In the past four years from 2013/14 to 2016/17, the number of technologies identified and acquired had been below the set target of 200 per annum. The reason being that SIDO had managed to identify and acquire 186, 178 and 197 technologies during 2015, 2016 and 2017 respectively.

Further review of the Performance Reports from the Directorate of Technology Development and Industrialisation had indicated that the number of technologies transferred was also below average for two consecutive years 2014/15 and 2015/16 where SIDO managed to transfer 106 and 114 technologies respectively which were below its annual average target of 136 technologies.

Although SIDO has about seven Technology Development Centers (TDCs) in the country which are responsible for repairing, maintenance, developing and manufacturing machines and spare parts, these TDCs lacked sufficient automation technology to produce well and advanced machines to be used by the agro-processors. This led to poor performance of the agro-processing industries which depended on machines produced from TDCs. Hence, reduced chances of the agro-processors in the country to compete in both local and international markets where there is high influx of the advanced technology used. Consequently, the insufficient transfers and dissemination of modern technologies had forced agro-processors to continue using the outdated technologies that might

not improve their output and productivity as demanded by the strategic plan.

8.2.4 Inadequate Provision of Marketing Support Services

There was insufficient marketing support provided to agro-processor. There were no enough marketing strategies that provide proper avenues for the agro-processors with their products. Marketing services offered to agro-processors were mainly made through support participation to exhibitions where not all agro processors could afford to attend.

There were no sufficient marketing strategies that provided a proper avenue for the agro-processors with their products. Most of the marketing support services rendered by SIDO assisted all SMEs to use traditional marketing techniques of open events promotions such as exhibitions, which was contrary to the modern world where e-marketing was greatly used and encouraged.

8.2.5 Absence of Proper Industrial Infrastructure

The SME Development Policy (2003) requires the Ministry and SIDO to collaborate with the private sector, local government and development partners to improve infrastructure and provide utilities in the areas where SMEs are operating.

However, the review of performance reports from SIDO and interviews held with officials at SIDO indicated that at the time there was no active partnership between SIDO or MITI and private sector in developing modern industrial infrastructure suitable for entrepreneurship development as directed by the policy. All SIDO's premises from the six regions visited had been accommodating different types of users without having a formal master plan. Agro-processors and other categories of SMEs were operating within the same premises.

The audit team had further noted that there was no sufficient collaboration with all the key stakeholders for a modern industrial site suitable for agro processors and other categories of SMEs. Most of the developments up to this stage had been involving LGAs only who were the owners of the land on which these industrial sites were to be developed.

8.3 Contributing Factors for Insufficient Support Services Provided to Agro Processors

The following were the factors contributed to the insufficient provision of support services to agro-processors.

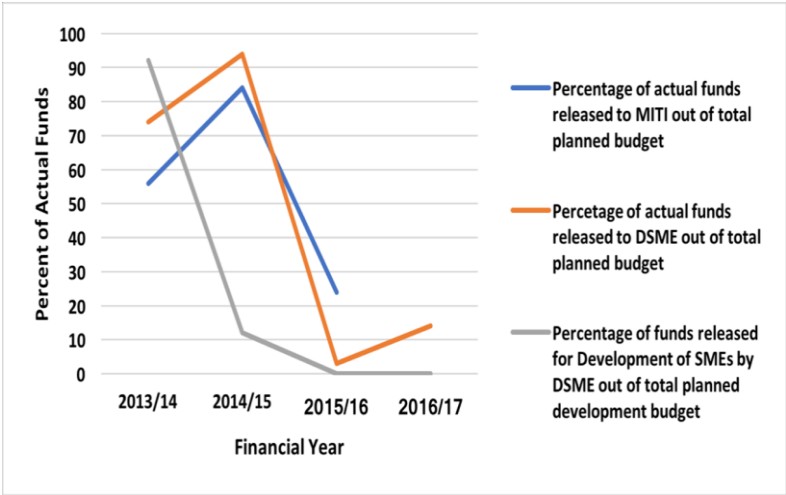
8.3.1 Inadequate Planning on Provision of Support to Agro-Processors

The audit team assessed different planning systems and processes for the provision of support services at the Ministry of Industry and SIDO to establish whether the planning processes were carried-out in a manner that safeguarded the needs of agro-processors. Based on the assessment conducted, it indicated that there were weaknesses in the planning for the provision of services to Small and Medium Enterprises that included agro-processors.

(a) Less Prioritization of Small and Medium Enterprises during Budgeting

Review of MTEF for both the Ministry of Industry and SIDO for the period from 2013/14 to 2016/17, indicated that during allocation of financial resources there were less prioritization of Small and Medium Enterprises needs which include agro-processors. It was indicated that the amount allocated for the development of SMEs had decreased during the two years of 2015/16 and 2016/17, as none was allocated to SMEs activities by the Directorate of SMEs from the Ministry of Industry. It was reported that in the past four years, the Ministry spent an average of 16 percent for the development of Small and Medium Enterprises out of actual funds allocated to the Directorate of SMEs. This was reported to be caused by inadequate funds that were allocated to the Ministry as the received annual average was 56 percent of the total approved budget as shown in Figure 8.2.

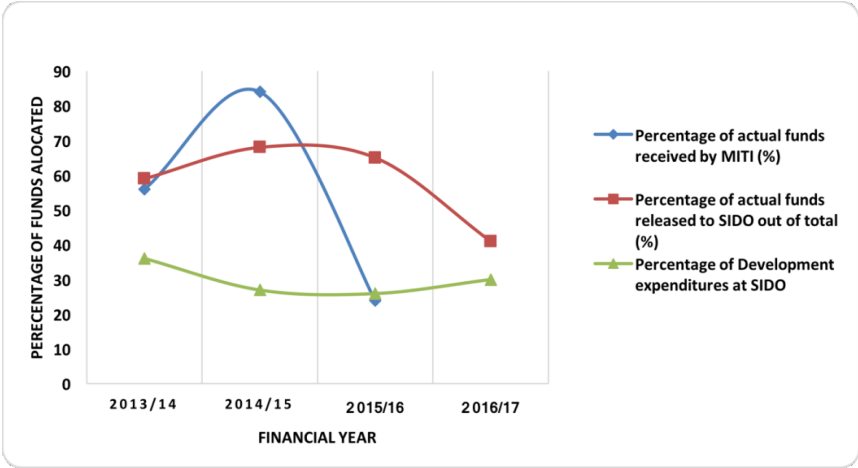
Figure 8.2: Comparison of Actual Funds Allocated for SMEs Activities to the Actual Amount Allocated to the Ministry of Industry



Source: Auditors' Analysis, 2018

The audit team computed a ratio of actual funds allocated to SIDO to the actual amount received by the Ministry, as presented in Figure 8.3.

Figure 8.3: Ratio of Financial Resources Allocated for Development Expenditures at SIDO from 2013/14 - 2016/17



Source: Auditors' Analysis (2018)

Figure 8.3 indicates that the proportion of total funds allocated for the development of SMEs is low as compared to the total funds released to SIDO. In the past four years, SIDO received a total of TZS 55 billion to finance its budgetary expenditure which is equivalent

to TZS 14 billion per annum. However, Ministry of Industry had released 30 percent only for the development of SMEs and the remaining 70 percent was used for recurrent expenditure. This trend indicates that there is a low level of prioritization of SMEs Development activities at SIDO.

(b) Inadequate Involvement of Key Stakeholders during Budgeting

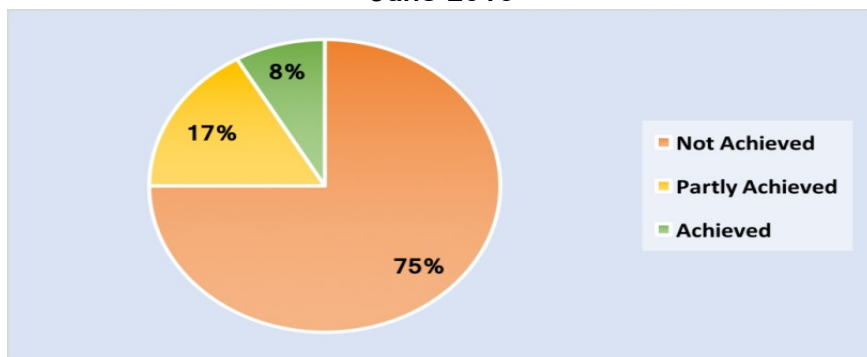
It was noted that there was inadequate involvement of key stakeholders during planning for the provision of support to these Small and Medium Enterprises mainly agro-processors. The audit showed that both levels of SIDO headquarters and regional offices did not involve their key stake holders, involvement of stakeholders was mostly observed during the implementation of the support services.

8.3.2 Implementation of Provision of Services was not done as Per Plan

Through the review of annual performance reports from MITI and SIDO headquarters, the audit noted that the provision of support services for SMEs was not implemented at an adequate level as planned. It was noted that there was low achievement of the set targets for enhancing development of Small and Medium Enterprises including agro-processors.

The Ministry through its Strategic Plan for the period from 2011/12 to 2015/16 laid down 12 targets that were supposed to be achieved by the Ministry as a means of enhancing the development of SMEs. However, it was noted that set targets were not achieved as per the Strategic Plan that ended June 2016. The evaluation results of the status of achieving key targets by MITI are as presented in Figure 8.3.

Figure 8.3: SMEs Development Targets Achievement at MITI by June 2016



Source: MITI Strategic Plan (2011/12 to 2015/16) performance assessment

Figure 8.3 indicates large percentage of targets for enhancing development of SMEs set by the Ministry was not achieved by June 2016. Nine out of 12 targets had not been achieved by the end of the plan while only two of the 12 targets had been partly achieved. Only one out of 12 targets had been achieved at a satisfactory level. Further analysis indicated that the Ministry planned to finalize four out of 12 targets by March 2018. This is more than 20 months past the end of the strategic plan.

The non-achievement of the targets implied lower achievement of the SMEs Policy of 2003 due to the fact that the targets set were based on the policy objectives which were supposed to be addressed by the Ministry from its Strategic Plans.

8.3.3 Inadequate Conduct of Needs Assessments

According to SIDO's strategic plan of 2014/15 - 2016/17, SIDO was required to provide the support services to SMEs in accordance with their needs and demands. For this case, SIDO was required to have a system for collection of SMEs needs that would guarantee the consideration of higher proportion of SMEs without neglecting other needs.

Through the interviews held with SIDO officials and SMEs in Regional Offices as well as the review of availed needs assessment reports for the period from 2013/14 to 2016/17 we noted that the system for conducting needs assessments for SMEs was not effective due to different weaknesses.

Also, through the review of SIDO Annual Performance Reports for the period from 2013/14 to 2016/17, it was observed that the number of needs assessment conducted failed to meet the targeted number as required by SIDO Corporate Strategic Plan. In the past four years, SIDO managed to conduct only 1779 needs assessments which were below the set target of 2150 as per SIDO Corporate Strategic Plan 2014/15-2016/17. This represented a variance of 17 percent from the planned levels of needs assessment.

8.3.4 Fragmented Coordination in the Provision of Support Services

Section 5(i) of SIDO Act, requires SIDO to assist and co-ordinate the activities of other institutions engaged in the provision of training facilities for persons engaged in or employed or to be employed in small industries. However, the interviews held with officials from both the Ministry of Industry and SIDO and the reviews of strategic

plans and implementation reports noted that there was limited coordination with other stakeholders.

Even when support services were provided by other stakeholders; there was little involvement of SIDO during their implementation. In most of the regions, the other service providers were seen as competitors rather than partners in the provision of support services. SIDO was not being involved by other stakeholders including LGAs at the time when these stakeholders were providing support services to the agro-processors on their own initiatives.

8.4 Monitoring and Evaluation of SME Activities

The provision of support services to SMEs is supposed to be closely monitored by different levels within the Ministry and SIDO itself. Monitoring is done for the purpose of ensuring that there is proper delivery of support services which would ensure that the intended objectives and goals as stipulated in the SMEs Policy and Keys strategies are met. The following are the observed weaknesses in the monitoring of Small and Medium Enterprises:

8.4.1 Insufficient Monitoring of SIDO activities by the Ministry of Industry

The Ministry of Industry is supposed to monitor the activities of SIDO in order to guarantee the achievement of its targets and indicators for the development of SMEs including agro-processors. However, it was found-out that the Ministry of Industry conducted only 50 percent of the required M&E visits to monitor the implementation of the provision of support services to SME as conducted by SIDO. Table 8.3 presents the extent to which the Ministry has conducted visits to SIDO from 2013/14- 2016/17.

Table 8.3: Percentage of Planned Monitoring Visits conducted by the Ministry of Industry

Financial Year	Required Number of Monitoring Visits	Actual Monitoring visits conducted	%age of Monitoring Visits conducted
2013/14	4	2	50
2014/15	4	2	50
2015/16	4	2	50
2016/17	4	2	50

Source: M&E Manual and M&E MUVI reports at MITI (2018)

It was explained by the interviewed officials at the Ministry of Industry that the two M&E visits conducted annually were done to

monitor the implementation of “Muunganisho wa Ujasiriamali Vijijini (MUVI)” programme and not to provide other SIDO support services.

8.4.2 Inadequate Monitoring of SMEs Activities by SIDO

SIDO was required to establish mechanism for tracking progress and make evaluations of its activities for the provision of support services to SMEs. Through its M&E Unit, SIDO was required to coordinate the planning, performance tracking and evaluation of its operations. However, the audit team noted that monitoring conducted by SIDO had the following shortcomings:

(a) Ineffective Systems for Reporting SMEs issues at SIDO

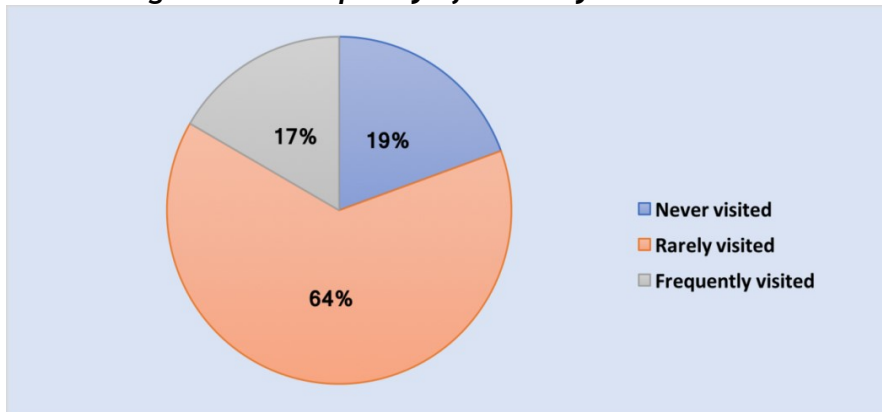
The audit team noted that the system for producing monitoring reports at SIDO was not effective as there were no room for verifying information reported in the performance reports and Management Information System. The System only allows the reporting of quantitative information of the business plan indicators at higher levels above operational level, but the qualitative and very detailed information is not reported to supervisory and top management levels.

It was noted that the system of reporting restricts supervisors or top management from knowing the existing challenges pertaining to the provision of support to SMEs.

(b) Insufficient follow up after provision of support services by SIDO

In order to ensure that services provided are effective, SIDO was supposed to provide mentorship services and follow-ups on the performance of the agro processors and other categories of SMEs. Interviews held with visited SMEs pointed out that very few follow-ups had been made by SIDO after the provision of support services to Small and Medium Enterprises. Figure 8.4 shows the extent of visits made by SIDO to all categories of SMEs including agro-processors who received support services from SIDO.

Figure 8.4: Frequency of visits by SIDO to SMEs



The responses from agro-processors indicated that most of the agro processors were rarely or never visited by SIDO officials. The response from thirty-six (36) agro-processors from six (6) visited regions indicated that seven SMEs equivalent to 19 percent had never been visited; while 23 SMEs equivalent to 64 percent had been visited once or very rarely by SIDO officials. Only Six out of 36 interviewed SMEs equivalent to 17 percent had been frequently visited by SIDO.

8.4.3 Non-Adherence to Evaluation Plan

The audit team reviewed the performance reports of the Ministry to assess whether evaluations were conducted in accordance to the planned evaluations as stated in the Ministry's Strategic Plan for the period from 2011/12 to 15/16.

It was found that the Ministry did not actually conduct the evaluations on the SMEs as indicated in the Strategic Plan. The Ministry was however doing reviews of the policy and programmes. The Ministry was supposed to have conducted three SMEs Graduation Surveys and Integration Surveys since 2013/14 but none of them was conducted. Furthermore, the recent evaluation on Impact of SMEs Industries Establishment in Special Economic Zone (SEZ) to socio-economic empowerment was not conducted during the financial year 2016/17.

8.4.4 Factors contributed to Inadequate Monitoring and Evaluation of SMEs

Interviews held with officials from the Ministry of Industry and SIDO and review of M&E Manual at the Ministry of Industry, Strategic Plans and Annual Business Plans both at the Ministry of Industry and SIDO revealed that, SIDO did not plan adequately for monitoring the

activities for provision of support services to SMEs. For instance, through its Corporate Strategic Plan, SIDO planned to produce a total of 360 monitoring reports by June, 2017. However, there was no specific monitoring report issued up to the time of this audit was concluded.

What is more, SIDO's Corporate Plan did not indicate who would be responsible for conducting the monitoring or production of monitoring reports. The corporate strategic plan which is a guiding document in planning did not indicate how the activities of SMEs or its regional offices would be monitored or the methodologies that will be used during the monitoring.

It was further noted that monitoring was assigned to the Internal Audit function at SIDO headquarters but reviewed internal audit reports reported only issues of financial compliances and other observations, they did not capture SMEs related information arising from field monitoring visits.

8.4.5 Consequences for Inadequate Monitoring and Evaluation to SMEs

Among the observed consequences of inadequate planning include:

i) Lack of reliable data on performance of Agro-processors

Currently, SIDO do not have a reliable database where information regarding the performance of agro-processors can be obtained. There is only one baseline survey conducted in collaboration with MITI in 2012, which established baseline data on Micro, Small and Medium Enterprises.

Also, there was a fragmented system for collecting information on the performance of agro-processors. SIDO and MITI were not able to establish to what extent the agro-processors were performing based on the support services rendered to them due to lack of strong databases for SMEs. For instance, two out of six visited SIDO regional offices were completely not able to provide estimates of graduating agro-processors and other categories of SMEs in their regions. All of the regional offices were not able to specifically indicate the contribution of SMEs to the economy and employment in their regions.

ii) Some of the Support Services were not adequately Covered

In order to evaluate its progress towards achieving the strategic goals and the provision of support services for SMEs, SIDO was supposed to have developed a performance measurement system that would enable them to have an overall picture on the extent to which they had covered the four support services to SMEs.

The review of the strategic Plan indicated that it was difficult for SIDO to ascertain the extent to which they had covered the areas of support services rendered to agro-processors and other categories of SMEs. The reason being that the performance indicators for each of the four support services i.e. financial technology, marketing and training were not aggregated in any form to come up with a single parameter that would provide information on whether they had covered each of the support service to the desired level.

The audit team was able to categorize and evaluate their total performance with reference to the four support services provided to SMEs as detailed in Table 8.4

Table 8.4: Extent of Coverage for Support Services for Agro-processing and Light Engineering SMEs

Type of Support Services Required	Extent of Provision (In terms of Percentage (%age))	
	Agro processing	Light Engineering
Financial Support Services	20	20
Technology Support Services	40	60
Training Services	70	30
Marketing Services	40	40

Source: SIDO Progress Reports (2018)

Table 8.4 shows provision of financial and marketing support services to both agro-processors and light engineering was less than 50 percent. The situation was worse in provision of financial support services as it was 20 percent to both agro-processors and high engineering.

On the other hand, training support services received by agro-processors was 40 percent higher compared to light engineering who received 30 percent. Similarly, light engineering received 60 percent of technological support services while agro-processors received 40 percent.

8.5 Consequences for Insufficient Provision of Support Services to agro-processors

Through the review of different researches and publications in development of SMEs in Tanzania as well as interviews held with government officials responsible for support services for SMEs development, the audit noted the inadequate growth of agro-processors and other SME categories. This is further detailed in the following sub sections:

8.5.1 Insufficient contribution to the Employment

Interviewed officials from SIDO and the Ministry of Industry, and the review of researches on SMEs indicated that the agro-processing had not contributed significantly to the employment as indicated in Table 8.5.

Table 8.5: Overall Contribution of SMEs to the Employment Level for the Four Financial Years (2013/14 - 2016/17)

Details	2013/14	2014/15	2015/16	2016/17
Ministry Targeted level of contribution of SMEs to Employment (%)	50	55	60	(-) ^{25*}
Actual level of contribution to employment (%)	23.4	No Data	No Data	No Data
Actual level of contribution as per other sources (reviewed researches) (%)	No Data	20 ²⁶	No Data	40 ²⁷

Source: Ministry of Industry Strategic Plan of 2012/13- 2015/16, ILFS 2014 by NBS & ESRF Country update 2016 (2018)

Table 8.5, shows that the overall contribution to employment by the SMEs sector has been below the target set by the Ministry for the years 2014/15 and 2016/17. The Ministry planned to achieve a target of 60 and 65 percent contribution to the labour force for the two years but the information from the reviewed researches indicated that the contribution was below target as it stood at 20 and 40 percent for 2014/15 and 2016/17 financial years respectively.

²⁵ The indicator was changed to measure contribution by both men and women

²⁶Based on ILFS 2014 by NBS and MITI

²⁷ Based on ESRF Country Update 2016 “Promoting Participation of SMEs in International Trade”

8.5.2 Insufficient Contribution to the Economy

According to the audit the SME sector was expected to be among the leading sectors contributing to the economy. However, recent trend in the data has shown that the sector's contribution to the GDP had not been satisfactory. The audit team established the trend of performance of SMEs by comparing their contribution to the economy through GDP for the period of four years from 2013/14 to 2016/17 as shown in Table 8.6:

Table 8.6: Contribution of SMEs to Gross Domestic Product

Details	2013/14	2014/15	2015/16	2016/17
Ministry of Industry Set Target for the SMEs contribution to GDP (%)	36	38	40	No Data
Actual Performance as per MITI (%)	27	No Data	No Data	No Data
*Actual performance as per other sources (%)	No Data	No Data	35	No Data

Source: Ministry of Industry Strategic Plan of 2012/13- 2015/16, ILFS 2014 by NBS & ESRF Country update 2016 (2018)

Table 8.7, shows that the contribution of SMEs to GDP level had been below the target set by the Ministry. Although, the Ministry had planned to achieve a growing trend in the levels of contribution of SMEs to GDP, from 2014/15 to date, it had not established whether the planned levels were attained or not.

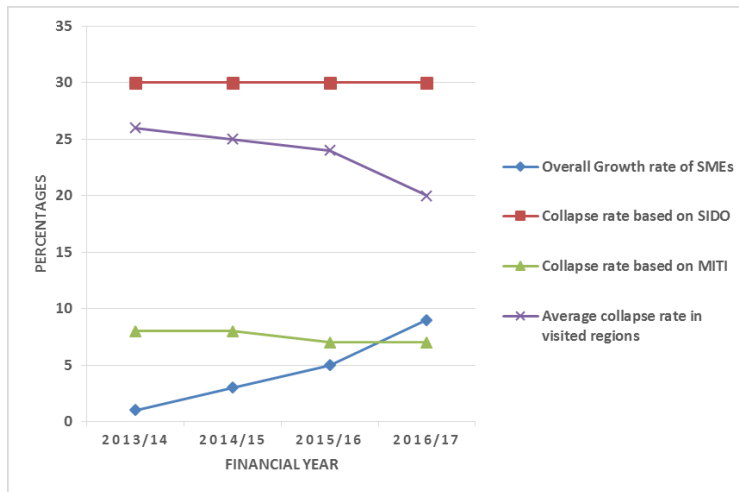
Data obtained from other sources such as Economic and Social Research Foundation (ESRF) through its country update of 2016, established that the contribution to GDP from the SMEs sector by 2015/16 was 35 percent, which is below the target of 40 percent set by the Ministry.

8.5.3 Higher Rate of Failure (Collapse) than Growth Rate

The main vision of Small and Medium Enterprises Development Policy of 2003 is to have a vibrant and dynamic SMEs sector that ensures effective utilization of available resources to attain accelerated and sustainable growth. Based on this Vision, the Ministry and SIDO were required to create conducive environment for which all SMEs would sustainably grow and make an effective utilization of the resources available in the country. However, analysis of the recent statistics of growth and failure of SMEs from the Ministry and SIDO has shown that the sector is not growing in a sustainable way. The analysis has indicated that the rate of collapsing of SMEs is higher than the rate of growth.

It was further reported that despite the fact that the growth rate had been increasing, the rate of collapse of SMEs including agro-processors was noted to be higher than the growth rate. Both data obtained from the Ministry and SIDO showed that the rates of collapse were higher than the growth rate as shown in Figure 8.5.

Figure 8.5: The rates of collapse compared to growth rates for SMEs sector in Tanzania

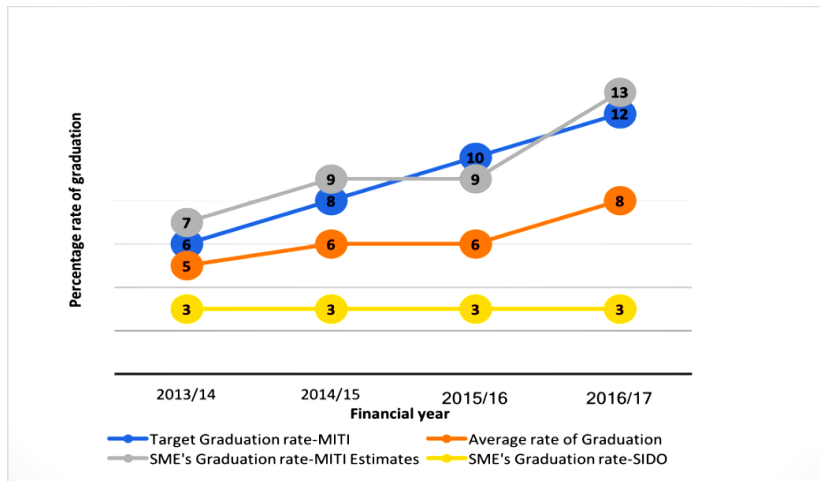


According to data obtained from the Ministry and SIDO, the average collapse rate for the past four years was between 8 and 30 percent respectively. While the growth rate was noted to be 5.6 percent, the statistics from SIDO, indicated higher rate, which meant that registered SMEs including agro-processors at SIDO had been collapsing at a rate of 30 percent consistently for the years 2013/14 to 2016/17.

8.5.4 Unsatisfactory Graduation Rates

SME Development Policy (2003), requires the Ministry of Industry to create enabling environment to enable manufacturing enterprises to graduate from one scale of the operational level to the higher level. Statistics obtained from the Ministry of Industry and SIDO, have shown that the average rate of graduation was below the target set of 8 percent as an average per annum by the Ministry of Industry in its five years Strategic Plan for the period 2012/13 - 2016/17. Figure 8.6 shows the trend of graduation for the period of four years, 2013/14 to 2016/17.

Figure 8.6: Percentage of SME Graduating from one scale of operation into another level for the period of Four years (2013/14- 2016/17)



Source: MITI and SIDO Performance Reports

The audit noted that the growth of all categories of SMEs was affected by inadequate provision of support services by the Ministry and SIDO. The observed areas which caused the inadequacies were associated with planning, implementation, monitoring and evaluation of SMEs activities.

CHAPTER NINE

CONCLUSION

9.1 Introduction

This chapter presents conclusions drawn from a review and analysis of findings from six performance audit reports and one follow-up report discussed in this general report.

9.2 General Conclusion

In general, the audits recognized government's efforts towards agricultural development in the country. However, issues uncovered by the audit reports lead to the conclusion that the government has not effectively managed the implementation of various interventions to make agriculture more productive, resilient, and sustainable and the backbone of the country's economy.

The main strategies identified by the Ministry of Agriculture as key for the development of agriculture are not adequately managed by the Ministry as well as its stakeholders. The noted weaknesses were on the Management of agricultural inputs, quality control of the agricultural inputs, crop pests and diseases outbreak, construction of irrigation infrastructure, provision of extension services to farmers and provision of support services to agro - processors in the country.

The noted weaknesses resulted from weak control mechanisms with regards to planning, execution and monitoring and evaluation of the interventions implemented by the government with a view to supporting the development of agricultural sector.

9.3 Specific Conclusions

9.3.1 Inadequate management of agricultural input in the country

The audit revealed that the Ministry of Agriculture through TOSCI, TFRA and TPRI did not adequately establish demand for agricultural inputs needed in the country. The established demands were hypothetical as there was no baseline conducted to establish the actual number of inputs needed based on the agro-ecological zones. We have noted that no proper estimation methodologies were used to estimate the demand for agricultural inputs, because

there is no model, software or other more accurate methodology that is used in estimating the figures for the forecasts.

There are inadequate systems to ensure timely supply of agricultural inputs to farmers. The distribution system comprises of noticeable weaknesses on areas of timeliness, quality and price controls that affect the essence of efficient system. The audit noted that there were insufficient number of manufacturers, importers, distributors and agro-dealers to ensure accessibility of inputs to farmers. The indicative prices established were not applied as planned as some agro-dealers and farmers were not aware of the established indicative prices of the inputs.

Generally, the above weaknesses are likely to impact the productivity in agricultural crops leading to food insecurity as well as fall of income to individual farmers and the country as well.

9.3.2 Inadequate Quality Control of Agricultural Inputs

The Ministry has not effectively controlled the distribution and use of agricultural inputs to ensure farmers were using good quality pesticides, seeds and fertilizers. There were inadequate mechanisms to ensure agricultural inputs available to farmers met the required standards. Farmers in the country applied agricultural inputs which were of low quality, fake or sub standards caused by inadequate mechanism to ensure good quality agricultural inputs were available to farmers.

There were weaknesses in the inspections conducted to agro dealers and at ports of entry to control the quality of imported and sold agricultural inputs. There were no established inspection procedures and plans to guide inspections; instead inspectors used inspections/re-inspection forms which were not consistent and that affected the quality of inspections conducted as well as failure to identify all major weaknesses during the inspections. Thus, this might affect the marketing of agricultural commodities in the local and international market that might lead to a negative impact on the national economy.

9.3.3 Inadequate Management of Crop Pest and Diseases Outbreak

From the report it is concluded that there was an inadequate implementation of preventive and control strategies despite frequent report on outbreaks of agricultural crop pests and diseases. There was a weak coordination among key players. Monitoring and Evaluation was inadequately conducted. This led to the continuous

occurrence of outbreaks of agricultural crop pests and diseases in various parts of the country. Therefore, there is a risk of having food insecurity and loss of income by farmers due to low productivity. As a result, the Gross Domestic Product (GDP) of the country contributed by the agricultural sector was decreasing.

9.3.4 Inadequate management of construction of irrigation infrastructure

The government has invested significantly in irrigation infrastructure to improve production and food security. The assessment of various irrigation projects noted that about 76 percent of the implemented projects were delayed, meanwhile, most of the projects were implemented below the intended quality on the aspects of workmanship and designs. However, both pre-construction and construction works of the projects were found to have deficiencies.

The supervision role of NIRC on the construction of irrigation infrastructure was not adequate as most of the constructed irrigation works were found to have deviated from the required quality, expected cost and planned completion time. Because of that, constructed irrigation schemes were not performing well and surprisingly, some irrigation schemes were constructed in areas where there was no sufficient amount of water to reach irrigable areas. Most of these schemes are not feasible as some of them have incomplete built-in features and they are prone to environmental changes.

Most of these deficiencies were the results of partial feasibility by NIRC and other stakeholders which led to implementation of malfunctioning designs and therefore making these projects unsustainable. Inadequate funding of government to NIRC to cater for supervision of irrigation activities contributed to inadequate performance of irrigation in the country.

Crop production in the country is at risk as the existing irrigation infrastructure will not be able to meet the increasing demand for irrigation water to farmers, and hence the potential for irrigation with a view to improving food security will be limited.

9.3.5 Inadequate management of provision of extension services to farmers

The audit concluded that the Ministries responsible for managing the provision of extension services in Tanzania have not adequately managed the provision of extension services. The resources allocated for the provision of this service are not well managed and utilised. This is affecting the achievement of the plans for provision

of extension services. Despite adequate mobilisation of financial resources, mobilisation of human resources has not been done at a satisfactory level which has affected the intended use of financial resources in achieving the targets set in the provision of extension services.

The provision of extension services at field level has not been sufficiently effective with regard to the achievement of the outcomes of the activities implemented. The provision of extension services has continued to face inheritable challenges, in particular, the changes in cultivation culture into the modern farming methods. These challenges have continued to hamper the impact of the extension services provided to farmers.

9.3.6 Support Services have not Sufficiently Contributed to the Growth of SMEs

The growth of agro processors in Tanzania is not satisfactory to enable its contribution to the country's economy to the level that would enable the country to become semi-industrialized by 2025. Agro-processors are characterized by higher rate of collapsing than the rate of growth, hence the sector is significantly characterized by new entrants who are inexperienced to match with dynamics of the industry. For the financial years 2014/15 and 2015/16 the contribution of the agro-processors to employment was very low, such that the whole SMEs sector stood at 20 and 40 percent which is far below the target of 60 percent set by the Ministry of Industry, Trade and Investments.

The support services given to agro-processors have not yet contributed significantly to their growth. Agro-processors are faced with challenges that impair their growth despite receiving support services from SIDO, that were characterized with limited outreach for the different support services in technology, marketing, financing and business training.

Marketing service offered to agro-processors are mainly made through exhibitions conducted, which is limited to the agro processors that can afford to participate in the exhibitions. Training offered to agro-processors are not effective as only nine percent of Small and Medium Enterprises sector are trained. The current level of technological support does not meet the current demand in technology for sustainable development of agro-processing because the level of technologies available in the market is far more advanced than the technologies by SIDO.

CHAPTER TEN

RECOMMENDATIONS

10.1 Introduction

The findings and conclusions from the analysis of the six performance audit reports and one follow-up report indicated that there were areas for further improvements in most of the areas necessary for agricultural development in the country. These key areas for agricultural development are availability and accessibility of agricultural inputs to farmers, quality control of agricultural inputs, management of crop pest and diseases outbreaks, provision of extension services to farmers, construction of irrigation infrastructures and provision of support services to agro-processors.

This chapter, therefore, provides recommendations to the Ministry of Agriculture based on the conclusions made in respect of what should be done in order to address the identified weaknesses and improve the planning, implementation and monitoring and evaluation of agricultural activities in the country.

10.2 Specific Recommendations to the Ministry of Agriculture

The Ministry of Agriculture should:

- 1) Update and improve the existing procedures for registration, inspection and training to agro-dealers and farmers to ensure availability of quality agricultural inputs in the market;
- 2) Establish mechanisms that will ensure strategies for control and prevention of crop pests and diseases outbreaks are updated to promote the quality of produced crops in order to reduce the level of food insecurity and improve the quality of crops in the international market;
- 3) In collaboration with the Ministry of Industry and Trade strengthen its capacity in providing support services to all categories of agro-processors to promote value addition on the agricultural products that would enable the sector to become semi-industrialized;
- 4) Strengthen its means of support to local input producers of seeds, pesticides and fertilizers in order to stimulate local

production of needed agricultural inputs hence ensure timely availability of required inputs;

- 5) Ensure that professional development programs for extension officers are developed based on their needs and are adequately implemented with an objective of imparting them with capacity to provide extension services to farmers including up-to-date knowledge about modern farming practices and technologies;
- 6) Review its chain of actions to ensure that all interventions that are aimed at improving the provision of agricultural extension services in LGAs are effectively delivered in a manner that will produce intended results;
- 7) Set a mechanism that will ensure that designs are reviewed to ascertain their viability prior to deployment of contract to commence construction works.
- 8) In collaboration with the Ministry of Industry and Trade ensure that SIDO develop effective mechanism including adopting reverse engineering for acquiring and disseminating affordable modern technologies to agro-processors to strengthen value addition for agricultural products;
- 9) Ensure that TOSCI strengthen coordination mechanism by ensuring presence of Terms of Reference with LGAs inspectors to ensure that they promptly conduct inspection activities at their respective LGAs;
- 10) Ensure that TFRA conducts soil tests throughout the country so as to guide the demand and distribution of fertilizers in different parts of the country based on the soil type and nutritional content of the soil;
- 11) Ensure that the National Irrigation Commission liaise with PO-RALG to develop a mechanism of approving and supervising the construction of irrigation schemes as per the requirements of National Irrigation Act; and
- 12) Ensure that TPRI revisits and improves the existing procedures for registration of pesticides and pesticides sellers in order to widen coverage and varieties of registered pesticides to cater for the needs of different parts of the country.

REFERENCES

1. Africa Enterprise Challenge Fund, Registering and Certifying Agricultural Inputs in Tanzania: An Updated Assessment of Key Constraints and Recommendations for Change, October 2016
2. 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.
3. Controller and Auditor General (2015). *“Performance Audit on Provision of Extension Services to farmers in Tanzania”*. The National Audit Office of Tanzania, Dar es salaam, Tanzania.
4. Controller and Auditor General (2016). *“Performance Audit on Agricultural Crop Pest and Diseases outbreak in Tanzania”*. The National Audit Office of Tanzania, Dar es salaam, Tanzania. (2016);
5. Controller and Auditor General (2017). *“Performance Audit on Pesticides in Agricultural Activities in Tanzania”*. The National Audit Office of Tanzania, Dar es salaam, Tanzania.
6. Controller and Auditor General (2018). *“Performance Audit on Provision of Support to SMEs in Tanzania”*. The National Audit Office of Tanzania, Dar es salaam, Tanzania.
7. Controller and Auditor General (2019). *“Follow-up Audit on Provision of extension services”*. The National Audit Office of Tanzania, Dar es salaam, Tanzania.
8. Controller and Auditor General (2019). *“Performance Audit on Availability and Accessibility of Good Quality Agricultural Inputs to farmers in Tanzania”*. The National Audit Office of Tanzania, Dar es salaam, Tanzania.
9. Controller and Auditor General (2019). *“Performance Audit on Supervision of Construction Activities of Irrigation Projects in Tanzania”*. The National Audit Office of Tanzania, Dar es salaam, Tanzania.

10. United Republic of Tanzania, Agricultural Sector Development Strategy 1&2 2001/02-2014/15 & 2017/18 - 2024/25.
11. United Republic of Tanzania, Ministry of Agriculture Food Security and Cooperatives, Mid Term Strategic Plans, and 2011-2016
12. United Republic of Tanzania, Ministry of Agriculture Food Security and Cooperatives Annual Reports of 2013/14 - 2017/18
13. United Republic of Tanzania, National Agricultural Policy, 2013
14. United Republic of Tanzania, President's Office - Regional Administration and Local Government Strategic Plan, 2011/12 - 2015/16
15. United Republic of Tanzania, Tanzania Fertilizer Regulatory Authority Plans and Annual Implementation Reports of 2013/14 -2017/18
16. United Republic of Tanzania, Tanzania Fertilizer Regulatory Authority, inspection Reports between 2013/14 and 2017/18
17. United Republic of Tanzania, Tanzania Official Seed Certification Institute, Strategic Plans, and 2013/14 - 2017/18
18. United Republic of Tanzania, Tanzania Official Seed Certification Institute 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, The Fertilizers Act, 2009 and its Regulations of 2011 and its amendments of 2017
21. United Republic of Tanzania, The Seeds Act, 2003 and its Regulations of 2007