

The Audit Service Sierra Leone

2nd Floor, Lotto Building
Tower Hill, Freetown
Sierra Leone

Contact

Telephone: 232 22 226399

232 22 229247

Mobile: 232 (0) 78 777991

Website: www.auditservice.gov.sl

Email: info@auditservice.gov.sl



Audit Service Sierra Leone

PERFORMANCE AUDIT REPORT ON AGRICULTURAL MECHANISATION BY THE MINISTRY OF AGRICULTURE FORESTRY AND FOOD SECURITY (MAFFS)

OCTOBER 2014

Services Association (FSA) where \$10,000 as a start-up capital and 100 bags of rice will be provided to fifty (50) ABCs across the country as a pilot phase to enhance their activity levels. Going forward, as part of the recruitment process currently undertaken by the Ministry, one of the job functions of BEWs and FEWs will be to monitor the activity levels of ABCs across the country, and their performances will be evaluated against the activity level of ABCs on a periodical basis so as to ensure the effective and efficient operations of ABCs.

TABLE OF CONTENT

LIST OF ABBREVIATIONS	1
FOREWORD	2
EXECUTIVE SUMMARY	3
1 INTRODUCTION	5
1.1 BACKGROUND	7
1.2 MOTIVATION	8
1.3 AUDIT DESIGN.....	8
1.4 SCOPE.....	8
1.5 AUDIT QUESTIONS.....	8
1.6 METHOD AND IMPLEMENTATION.....	8
2 AGRICULTURAL MECHANISATION	10
2.1 BACKGROUND OF MECHANISATION IN MAFFS.....	10
2.2 ORGANISATIONAL STRUCTURE OF THE MAFFS.....	11
2.3 ROLES AND RESPONSIBILITIES OF KEY PLAYERS.....	11
2.4 FUNDING	12
2.5 AGRICULTURAL MECHANISATION.....	13
3 FINDINGS	14
3.1 PAYMENT FOR THE HIRE PURCHASE TRACTOR.....	14
3.2 NON WITHDRAWAL OF TRACTORS FROM DEFAULTERS	15
3.3 UTILISATION OF TRACTORS	16
3.4 PRE AND POST HARVEST LOSSES	18
3.5 OUTREACH OF TECHNICAL SUPPORT BY THE MINISTRY	21
3.6 AGRICULTURAL BUSINESS CENTRES (ABC)	22
4 CONCLUSIONS	25
5 RECOMMENDATIONS	26

6	APPENDIX	27
6.1	APPENDIX I LIST OF MAJOR DOCUMENTS REVIEWED	27
6.2	APPENDIX II: LIST OF INTERVIEWEES AND REASONS FOR INTERVIEW.....	28
6.3	APPENDIX III: MAFFS ORGANOGRAM.....	29
6.4	APPENDIX IV: RESPONSE FROM MAFFS	30

RECOMMENDATION

Recruiting, training and monitoring sufficient Block Extension Supervisors and Frontline Extension Workers to cover the 13 districts; and evaluating their performance against those of the ABCs that they are responsible for overseeing. In carrying out such supervisory support, they should educate farmers on the methods of planting and pest management.

MANAGEMENT RESPONSE

The Ministry requires thirteen (13) District Agriculture Officers (DAOs), sixty five (65) blocks, and five hundred and twenty (520) circles. The Ministry has recruited all 13 DAOs though the challenge is the recruitment of the 65 Block Extension Workers (BEWs) and 520 Frontline Extension Workers (FEWs), the Ministry is half way in the recruitment process as its recently recruited over 150 officers to fill various positions including BES and FEWs, and by 2015 all of these vacancies could have been filled. Most of the FEWs are old and unqualified as a result, their services are not as effective as required; and the Ministry is in the process of recruiting additional officers who are graduates to fill those positions.

3.5 AGRICULTURAL BUSINESS CENTRES (ABC)

An analysis of MAFFS status overview of 193 Agricultural Business Centres as per the Smallholder Commercialization Programme (SCP) final report (February to April 2013) shows that the activity level of 59% of all the ABCs were below medium. The activity level of 46% of the ABCs was low and 13% of them had no activity level meaning that they were completely not functioning. It was further observed that the structures within the ABCs sometimes differ from centre to centre. Some had facilities including hand pumps, latrines, machines and furniture, etc, were as others didn't or were still under construction.

RECOMMENDATION

Ensure that adequate monitoring and follow up is done for the effective operation of the Agricultural Business Centres (ABCs). Make sure that the facilities for the efficient running of the Agricultural Business Centres are completed assess productive areas and provide them modern farming facilities such as tractors, rice tillers, improved seeds, fertilizers, herbicides harvesters, de-stoners etc at agreeable terms. Standardizing the facilities at ABCs for consistency and comparison purpose;

MANAGEMENT RESPONSE

The low level of activity of most Agricultural Business Centres (ABCs) is as a result of the fact that they are still under construction phase as farmers cannot enhance the full capacity of such ABCs. A lot of training of farmers has been conducted by service providers on the governance and business aspect of the use of ABCs. The Ministry in its effort to improve the effective and efficient running of ABCs has create a link between ABCs and Financial

3.3.2 Pest Management Control

We observed that poor pest control was a major cause of pre-harvest loss. Farmers had difficulty accessing plant clinics during disease outbreaks on their farms, mainly because of poor road networks and/or long travel distances between support centres and farms. Farmers were advised by the Ministry against self-application of chemicals for fear of incorrect application and health and safety reasons. They were advised to leave that to trained and qualified Agricultural Officers. However, although there is normally an expenditure budget line in the Ministry's annual budget for such officers to perform such services, it was observed that farmers were being asked by Agricultural Officers to pay for the cost of these services. This resulted in farmers not calling for the services of these officers and therefore either applying the chemicals themselves, or completely avoided the use of chemicals.

RECOMMENDATION

Ensuring that farmers are fully aware of the existence of the plant health clinics which should be staffed by well trained and mobile Plant Doctors with sufficient chemicals and other resources;

MANAGEMENT RESPONSE

Plant health clinics and Plant Doctors have been decentralized to over fifty (50) Agricultural Business Centres (ABCs) across the country where farmers can have access to chemicals and report issues affecting their plant during an outbreak. Also, there is now established mobile clinics which serve the periodic markets (Luma) where farmers can seek information on the use and application of chemicals on their farms during disease outbreak. The Plant Doctors normally make recommendation on appropriate measures to be undertaken by farmers in case of disease outbreak.

Plant chemicals are normally offered to farmers on a cost recovery basis and the application of these services by Agriculture Officers is free of charge. Going forward the Ministry will institute monitoring mechanism in ensuring that farmers do not pay for such services and to take disciplinary action against officers requesting payment from farmers for such services.

3.4 OUTREACH OF TECHNICAL SUPPORT BY THE MINISTRY

Agricultural activities of the Ministry in the 13 agricultural districts were divided into 55 blocks and 520 circles. It was noted that the personnel required to sufficiently manage these two layers of service delivery were inadequate. For instance, the combined average staff-in-post for Bombali, Tonkolili, and Kambia districts, for both layers of service delivery, was less than 13% of the requirement. As a result of this shortage of agricultural professionals, farmers found it difficult to acquire improved farming technologies and guidelines on the promotion of sustainable agricultural development.

ABBREVIATIONS AND ACRONYMS

ABC	Agricultural Business Centre
ABU	Agricultural Business Unit
AG	Auditor General
DG	Director General
FAO	Food and Agriculture Organisation
FBO	Farmer Based Organization
FFS	Farmers Field School
FI Bank	First International Bank
GAFFSP	Global Agricultural Food Security Project
GDP	Gross Domestic Product
GoSL	Government of Sierra Leone
PEMSD	Planning Evaluation Monitoring and Statistics Division
PS	Permanent Secretary
SCP	Smallholder Commercialisation Program
SLARI	Sierra Leone Agriculture Research Institute
WFP	World Food Program

FOREWORD

As the Supreme Audit Institution (SAI) of Sierra Leone, Audit Service Sierra Leone (ASSL) is set on expanding the scope of external audit. In addition to our traditional role in Regularity Audit we have established Performance Auditing as one of the services provided by the ASSL. To achieve this, we have put in significant efforts into upgrading the professional skills in the organisation and modernising the audit methodology.

In submitting this Performance Audit Report for tabling, I refer to the constitution of Sierra Leone in which Section 119 (2) states “The public accounts of Sierra Leone and of all public offices including the courts, the accounts of the central and local government administrations, of the Universities and public institutions of like nature, any statutory corporation, company or the body or organization established by an Act of Parliament or statutory instrument or otherwise set up partly or wholly out of Public Funds, shall be audited and reported on by or on behalf of the Auditor General, and for that purpose the Auditor-General, or any person authorised or appointed in that behalf by the Auditor-General shall have access to all books, records, returns and other documents relating or relevant to those accounts”

I further refer to the Government Budgeting and Accountability Act of 2005, Section 63 (1) Sub section (1e), which states “In his examination of the Final accounts the Auditor-General shall ascertain that in his opinion, financial business has been carried out with due regard to economy in relation to results achieved”, and; Sub section 66 (4) further states that “Nothing in this section shall prevent the Auditor-General from submitting a special report for tabling in Parliament on matters that should not await disclosure in the annual report”.

In line with my mandate as described above, we have undertaken this Performance Audit on Agricultural Mechanisation by the Ministry of Agriculture Forestry and Food Security (MAFFS) with the objective of examining how effective the Ministry is working to improve food security through agricultural mechanisation.



Lara Taylor-Pearce (Mrs.) FCCA, FCA (SL)
Auditor General of Sierra Leone

instead of the recommended line planting for Inland Valley Swamps (IVS), which apparently improves yield, most farmers were still practicing the traditional clustered planting of seed rice, which resulted to low yields. We identified two reasons for farmers continuing with scattered planting:

- Farmers not willing to move from traditional practices and adapt
- Farmers lack capacity to undertake mechanized practices

RECOMMENDATION

Recruiting, training and monitoring sufficient Block Extension Supervisors and Frontline Extension Workers to cover the 13 districts; and evaluating their performance against those of the ABCs that they are responsible for overseeing. In carrying out such supervisory support, they should educate farmers on the methods of planting and pest management.

MANAGEMENT RESPONSE

The issue of line planting according to farmers is difficult to adapt as a result of the following:

- The use of line planting method is very much challenging as it requires spacing and pegging of the farms after measuring and land preparation. The Ministry indeed recommend line planting to farmers but when they normally hire unskilled labourers for transplanting and require them to use the line planting method, the labourers usually decline as they claimed that such method of planting is time consuming and as a matter of fact they have so many other farms to work on and they could not waste all of their time in one farm undertaking line planting and instead does clustered planting;
- Labourers also normally decline to carry out line planting because it is very challenging and will result to back breaking and waist pain that could derail their living;
- The technology is yet to be modified to meet the convenience of farmers and unskilled labourers who normally work on farms;
- There is still lack of proto type machinery/equipment that will enable farmers to undertake line planting.

In view of the challenges as highlighted above, the Ministry is making tremendous effort to ensure that the necessary tools are being provided for farmers so that they can engage in line planting in order to improve yield.

- The Ministry also makes some withdrawals of tractors from farmers even though it was difficult to attract new owners as most of those tractors were being misused by farmers.

The Ministry will make further withdrawals of tractors after carrying out statistical analysis of defaulters taking into consideration the new subsidy of 60% provided by government.

During the start up phase of the scheme, farmers were given a “start up kit” of ten million Leones (Le.10,000,000) for land preparation such as clearing/de-stumping of the land before the use of the tractors, but most of them were very much reluctant to prepare the land and instead use the tractors in the process which cause significant break down of the contracts.

As part of the MOU signed by the Ministry and FIBank, the Ministry has other implementing partners such as the Sierra Leone Chamber of Agribusiness Development (SLCAD) who regularly does follow up across the 13 agricultural districts in view of engaging farmers on the use of tractors and to see the need for repayment of loan for sustainability of the scheme, as some of these monies will further be used by the Ministry to undertake other agricultural investments that will benefits the farmers.

It is against this background that the Ministry earlier this year submitted a “cabinet proposal” for government to review the current subsidy from 40% to 60% so as to ease some of the burden from majority of farmers who are unable to meet their obligations. It was recently that a “cabinet conclusion” was made by government which requires the Ministry to increase the subsidy as requested above.

The Ministry in its reaction to the “cabinet conclusion” should have engaged stakeholders across the 13 agricultural districts to review the current status of the hire purchase scheme had it not been for the current Ebola outbreak. Nevertheless, the Ministry is currently carrying out statistical analysis of the whole hire purchase scheme to ascertain age analysis of defaulting farmers taking into consideration the new subsidy of 60% before appropriate action will be taken.

3.3 PRE AND POST HARVEST LOSSES:

3.3.1 Method of planting

Line planting was recommended to local farmers by MAFFS to promote efficient agricultural practices, which address weed and pest management. This method of planting allows farmers to easily moved around their farms, create proper spacing, pest management and weed control. This is the ideal method of mechanized farming; which makes it easy to use machines during ploughing, cultivation and harvesting. We however observed that

EXECUTIVE SUMMARY

The objective of this Performance Audit was to examine how effectively the Ministry of Agriculture Forestry and Food Security (MAFFS), has been working to improve food security (food affordability, accessibility and availability) through agricultural mechanisation in the country. The audit covered the Western Area; Rural and Urban (Freetown), and Northern region (Kambia, Bombali and Tonkolili) for the period 2010 to 2013. The audit focused mainly on the Northern Region because of its vast boliland, and the fact that 65% (i.e. 171 out of 263) of the tractors were sold to farmers in that region.

The audit focused on the following four questions:

1. To what extent was the Ministry of Agriculture Forestry and Food Security managing the hire purchase scheme?
2. Were the acquired farm machineries used to improve productivity?
3. Did the mechanisms put in place minimise pre and post-harvest losses?
4. Did the ministry provide adequate technical support to farmers?

MAIN FINDINGS

The Government of Sierra Leone (GoSL) acquired Sonalika brand tractors apparently on a US\$15m loan agreement from the Government of India in 2010. The precise details of that agreement were not made available by the Ministry despite several requests made by the auditors.

The GoSL then sold these tractors to farmers on a hire purchase loan scheme with 40% subsidy discount. The payment terms required the payment of a deposit of 20% to be followed by agreed annual instalment payments over a period of seven years as stipulated in the Memorandum of Understanding (MOU) between the Ministry and the First International Bank (FI Bank) in 2010. According to that MOU, the First International Bank should perform banking services with respect to the hire purchase scheme. Analysis of the loan repayment documents revealed an outstanding loan balance of Le6,369,538,151.05 approximately, USD 1,400, 000 owing as at 31st December 2013. During this period only 26.0% of the loan repayment was recovered from the farmers.

The MOU also required the MAFFS to immediately re-possess tractors from defaulting farmers upon receipt of notification from the FI Bank. We observed that there had been an increase in the number of defaulters between 2011 and 2013. As at the end of 2013, the total number of continuous and new defaulters in the three districts was 99% (i.e. 121 out of 122 farmers). However, there was no evidence of re-possession by the Ministry or notification from the FI Bank.

During the audit, farmers who benefited from the hire purchase loan and/or their representatives revealed that the hire purchase tractors developed serious mechanical problems staring from their first year. It was observed that one possible reason for the mechanical problems was the lack of preparation of the land before the use of a tractor. For instance the operations manual required farmers to clear/de-stump the land before using the tractors to till it. This was not done in most cases. Others reasons advanced were, use of untrained operators and drivers, poor maintenance culture, unavailability of genuine spare parts and the use of inappropriate mechanics.

The provisions of the MOU required the Ministry to carry out servicing and maintenance of tractors under this scheme. In fulfilling that responsibility, the ministry provided a mobile Mechanical Work-shops which was capable, through it trained operators to carry out necessary servicing/repair work free of charge. It was however observed that some operators asked farmers to pay for their services.

This may have indirectly forced many farmers to use the services of untrained and unqualified mechanics in their locality, and hence damaging the tractors.

Spare parts were not easily accessible in local markets and the Ministry did not make necessary arrangements for the acquisition of spare parts from the manufacturer - Sonalika. Although the Ministry provided as part of it "Starter Kit" some consumable, spare parts, they were insufficient and didn't last long.

We observed that instead of the recommended line planting for inland valley swamps (IVS), which apparently improves yield, most farmers were still practicing the traditional clustered planting of seed rice, which resulted into low yields.

We observed that poor pest control was a major cause of pre-harvest loss. Farmers had difficulty accessing plant clinics during disease outbreaks on their farms, mainly because of poor road networks and/or long travel distances between support centres and farms. Farmers were advised by the Ministry against self-application of chemicals for fear of incorrect application and health and safety reasons. They were advised to leave that to trained and qualified Agricultural Officers. Although there is normally an expenditure budget line in the Ministry's annual budget for such officers to perform such services, it was observed that farmers were being asked by Agricultural Officers to pay for the cost of these services.

This resulted in farmers not calling for the services of these Officers and therefore either applying the chemicals themselves, or completely avoided the use of chemicals.

Agricultural activities of the Ministry in the 13 agricultural districts were divided into 55 blocks and 520 circles. It was noted that the personnel required to sufficiently manage these two layers of service delivery were inadequate. For instance, the combined average staff-in-post for Bombali, Tonkolili and Kambia districts, for both layers of service delivery, was less than 13% of the requirement. As a result of this shortage of agricultural professionals, farmers found it difficult to acquire improved farming technologies and guidelines on the promotion of sustainable agricultural development.

An analysis of the status overview of Agricultural Business Centres (ABCs) done by the Smallholder Commercialisation Programme (SCP) revealed that more than 50% of the Agricultural Business Centres had low activity levels and more than 10% of them had no activity or were completely dormant. It was further observed that the structures within the ABCs sometimes differ from centre to centre. Some had facilities including hand pumps, latrines, machines and furniture, etc, were as others didn't or were still under construction.

CONCLUSIONS

Based on the findings presented in this report and available pieces of evidence, the auditors concluded that:

- the Ministry did not efficiently manage the hire purchase scheme;
- the acquired farm machineries were not used to improve productivity;
- the mechanisms put in place by the ministry did not minimise 'pre' and 'post' harvest losses; and
- adequate technical support was not provided to farmers.

RECOMMENDATION

Making reliable arrangements for the supply of spare parts and improve on maintenance services. They should provide mechanical workshops through qualified and trained mechanics at district levels. Undertake a training of trainers' workshops; these trainers could then train others especially the new operators.

MANAGEMENT RESPONSE

The Ministry made enough sensitization to the farmers on the significance of the hire purchase scheme to improve agricultural productivity across the country but the farmers were demanding too many concessions from government to help them in this drive which resulted to most of them not meeting the terms of payment required by MAFFS;

During the first year, the Ministry was very robust in its debt collection drive so much that the compliance rate from farmers was very good as farmers at that time were able to realise increase in agricultural productivity due to the start up package provided by the government which include access to fuel, Le.10 million for land preparation, fertilizers, herbicides, etc in return of almost their 20% up-front payment made by them. Debt recovery for the second year was also good as a result of the same;

During the start up phase of the hire purchase scheme, MAFFS trained over 300 community people to serve as operators and drivers for the 265 tractors and power tillers nationwide but the farmers were unable to make proper arrangement with them for their services which lead them to opt for the services of untrained and unqualified operators that resulted to break down of tractors;

Government through the MAFFS provides series of spare parts during the start up phase of the scheme which was made available to the farmers. These batches of spare parts have long been depleted/out of stock, however, several effort were made to invite private sector players in the supply of spare parts across the 13 agricultural districts but all of them decline the offer by claiming that they don't have the capacity to decentralize the issue of spare parts. This lead to farmers facing difficulty in accessing spare parts across the country;

The Ministry in its drive of ensuring that farmers pay their debts has made tremendous effort through the following:

- A team from MAFFS including the Minister has held series of meeting in view of encouraging farmers to pay their debts for the sustainability of the scheme;
- Press release which entails list of defaulters was made as a means of notifying defaulting farmers of their obligations with the Ministry;

3.2 UTILIZATION OF TRACTORS:

3.2.1 Frequent breakdown of tractors

During the audit, farmers who benefited from the hire purchase loan and/or their representatives revealed that the hire purchase tractors developed serious mechanical problems starting from their first year. It was observed that one possible reason for the mechanical problems was lack of land preparation before the use of a tractor. For instance the operations manual required farmers to clear/de-stump the land before using the tractor to till it. This was not done in most cases. Other reasons advanced were, the use of untrained operators and drivers, poor maintenance culture, unavailability of genuine spare parts and use of inappropriate mechanics. Furthermore, there was no evidence provided by the Ministry to show that farmers were provided with the necessary equipment like heavy duty machines to clear, de-stump the land, to guide farmers on land preparation for the operation of the tractors. The audit also revealed that MAFFS did not monitor farmers' ownership/use of tractors; and that tractors were being used for other purpose like the transportation of construction materials rather than for agricultural purposes which also contributed to breakdown.

RECOMMENDATION

Ensuring that frequent follow-up visits are carried out by the district offices so that farmers could be monitored and supported on the efficient utilization of the tractors in order to minimize frequent broke-down and mechanical failures;

3.2.2 Arrangement for servicing tractors were not effective

The provisions of the MOU required the Ministry to carry out servicing and maintenance of tractors under this scheme. In fulfilling that responsibility, the Ministry provided a mobile Mechanical Workshops which was capable, through it trained operators to carry out necessary servicing/repair work free of charge. However, it was observed that some operators asked farmers to pay for their services. Interviewed beneficiaries also disclosed that they bought fuel for the services of the mobile mechanical workshop to be able to access the breakdown services at their respective farm sites. This may have forced many farmers to be using the services of untrained and unqualified mechanics in their locality, and hence damaging the tractors.

In addition, spare parts were not easily accessible in local markets and the Ministry did not make necessary arrangement for the acquisition of spare parts from the manufacturer-Sonalika. Although the Ministry provided as part of it "Starter Kit" some consumable, they were not much and didn't last long.

The above conclusions greatly affected the ability of the farmers to improve their productivity and profitability, which in turn would have enabled them to repay their loans and out rightly own the tractors.

Ultimately, only a few tractors were used at their minimal capacity of 300 acres of ploughing, while the majority were grossly underutilised. This affected productivity and eventually, if immediate action is not taken, the Hire Purchase scheme could be redundant long before its proposed end date.

The activities of the Ministry and eventually farmers will be adversely affected by the absence of adequate Block Extension Supervisors and Frontline Extension Workers in these circles. This will further affect the transfer of knowledge to farmers making it difficult for farmers to adapt new and improved farming technologies.

RECOMMENDATIONS

In order to ensure that the objective of increased productivity is achieved, the MAFFS should:

- Promptly review with all concerned stakeholders, the implementation of the hire purchase scheme, identify and agree on support mechanisms that are workable. This will ensure that the farmers can have tractors that are in good working condition which will enable them to be productive and profitable, and eventually pay off their loans.
- Review the memorandum of understanding between MAFFS, the Bank and farmers; taking into account the challenges experienced by all parties concern and implement better enforcement procedures for the repayment of the outstanding loans.
- Establish reasonable time frames between default in repayment, and repossession of the tractors. This process should be clearly documented and communicated to the debtors. The Ministry should clearly reiterate their ownership of the tractors until full payment is made by loan beneficiaries.
- Make reliable arrangements for the supply of spare parts and improve on maintenance services. They should provide mechanical workshops through qualified trained mechanics at district levels. Undertake a training of trainers' workshops; these trainers could then train others especially the new operators.
- Ensure frequent follow-up visits are planned by the district offices so that farmers could be monitored and supported on the efficient utilisation of tractors in order to minimise frequent broke-down.
- Recruiting, training and monitoring sufficient Block Extension Supervisors and Frontline Extension Workers to cover the 13 districts and evaluating their performance against those of the ABCs that are responsible for oversight. In carrying out such supervisory support, farmers should be educated on the methods of planting and pest management that must yield the best results.
- Ensure that adequate monitoring and follow-up is done for the effective operation of the Agricultural Business Centres. Make sure that the facilities for the efficient running of the Agricultural Business Centres are completed, and assess productive areas and provide them with modern farming facilities such as tractors, rice tillers, improved seeds, fertilizers, herbicides, harvesters, de-stoners, etc at agreeable terms.
- Ensure that farmers are aware of the existence of fully staffed Plant Health Clinics and sufficient chemicals and other resources.

1. INTRODUCTION

1.1 BACKGROUND

Agricultural activities in Sierra Leone, forms a significant part of the nation's economy, it contributes up to 50% of Sierra Leone's Gross Domestic Product (GDP) and approximately, two-thirds of the farming population are involved in subsistence agriculture¹.

The country covers a total land area of 72, 325km². Nearly 75% of the total land area is arable. Approximately 56% of the land is below 150 m above sea level. Upland and lowland ecologies make up 78% and 22% respectively of the arable land area (Table 1.1). The uplands are composed of forest, savannah woodlands and grasslands while the lowlands comprise 690, 000 hectares (ha.) of inland valley swamps, 145, 000ha of 'bolilands' 130,000ha of riverine grasslands and 200, 000ha of mangrove swamps as presented in the table 1.1 below.

Table 1.1 Arable land distribution In Sierra Leone				
Ecology	Ecosystem	Area (1000 ha)	% of Arable land	% of Total landscape
Upland	Upland	4,200	78	58
Lowland	Inland Valley Swamps	690	13	10
	Mangrove Swamp	200	4	3
	Bolilands	145	3	2
	Riverine Grasslands	130	2	2
	Arable Land	5,365	100	75
	Non Arable Land	1,870		25
	Grand total	7,235		100
Source: Country Pasture/ Forage Resource Profile by Asamoah Larbi, Alieu, 2005				

The major food crops in Sierra Leone are rice, cassava, maize, millet, sorghum, sweet potato, and groundnut. They are produced by smallholders with an average land holding of 0.5ha – 0.2ha. Rice is the most important crop, cultivated by nearly 85% of farmers, with an estimated annual consumption of 76 kg per person. Cassava is the second most important crop. The tubers and leaves are consumed by households and cassava products (gari, flour and chips), are in high demand in urban areas. Production of food crops, especially rice and maize, increased during the period 2008 – 2010. Rice and cassava contributed 15% and 6% respectively to the agricultural GDP in 2010. The government, through MAFFS, has decided to assist farmers in embarking on agricultural mechanisation¹ to improve productivity. The activities of the Ministry ranging from policy formulation to policy implementation are geared towards agricultural mechanisation.

Through the Agricultural Business Centres (ABC), the government seeks to move the smallholder farmer away from the use of traditional (hoe and cutlass) to the use of modern farming techniques, such as tractors, fertilizers, herbicides, harvesters, threshers, rice mills and cassava graters, with the primary objective to lift the rural farmer out of extreme poverty.

¹The World Fact Bok, Central Intelligence Agency, United States of America

²Agricultural mechanisation is the use of modern implements as well as motorised equipment like plough, arrow, ridger and also the use of agro-chemicals like insecticides, herbicides, fertilizers and improved seeds in the farm. The use of tractors, tube-wells and plant protection measures are included in agricultural mechanisation.

RESPONSES TO DRAFT PERFORMANCE AUDIT REPORT ON AGRICULTURAL MECHANISATION BY THE MINISTRY OF AGRICULTURE, FORESTRY AND FOOD SECURITY

3.1 PAYMENT FOR THE HIRE PURCHASE TRACTOR

A review of the loan repayment documents showed that a total of Le.6,369,538,151.05 (74%) had not been paid by the farmers between the loan period 2011 to 2013. An analysis of the loan repayment documents revealed that in the first year (2011) hire purchase scheme farmers paid 71.0% of the amount due. Nevertheless, a significant reduction from 71.0% to 6.5% was recorded on the loan recovery activities in 2012. In 2013, MAFFS recovered only 0.4% of the outstanding loan. During this period (2011 to 2013), only 26.0% of the loan repayment was recovered from the farmers.

RECOMMENDATION

Promptly reviewing (with all concern stakeholders), the implementation of the hire purchase scheme, identifying and agreeing on support mechanisms that are workable; so that the farmers can have tractors that are in good working condition which will enable them to be productive and profitable, and eventually pay off their loan;

Reviewing the memorandum of understanding taking into account the challenges experienced by all stakeholders and implement better enforcement procedures for the repayment of the outstanding loans;

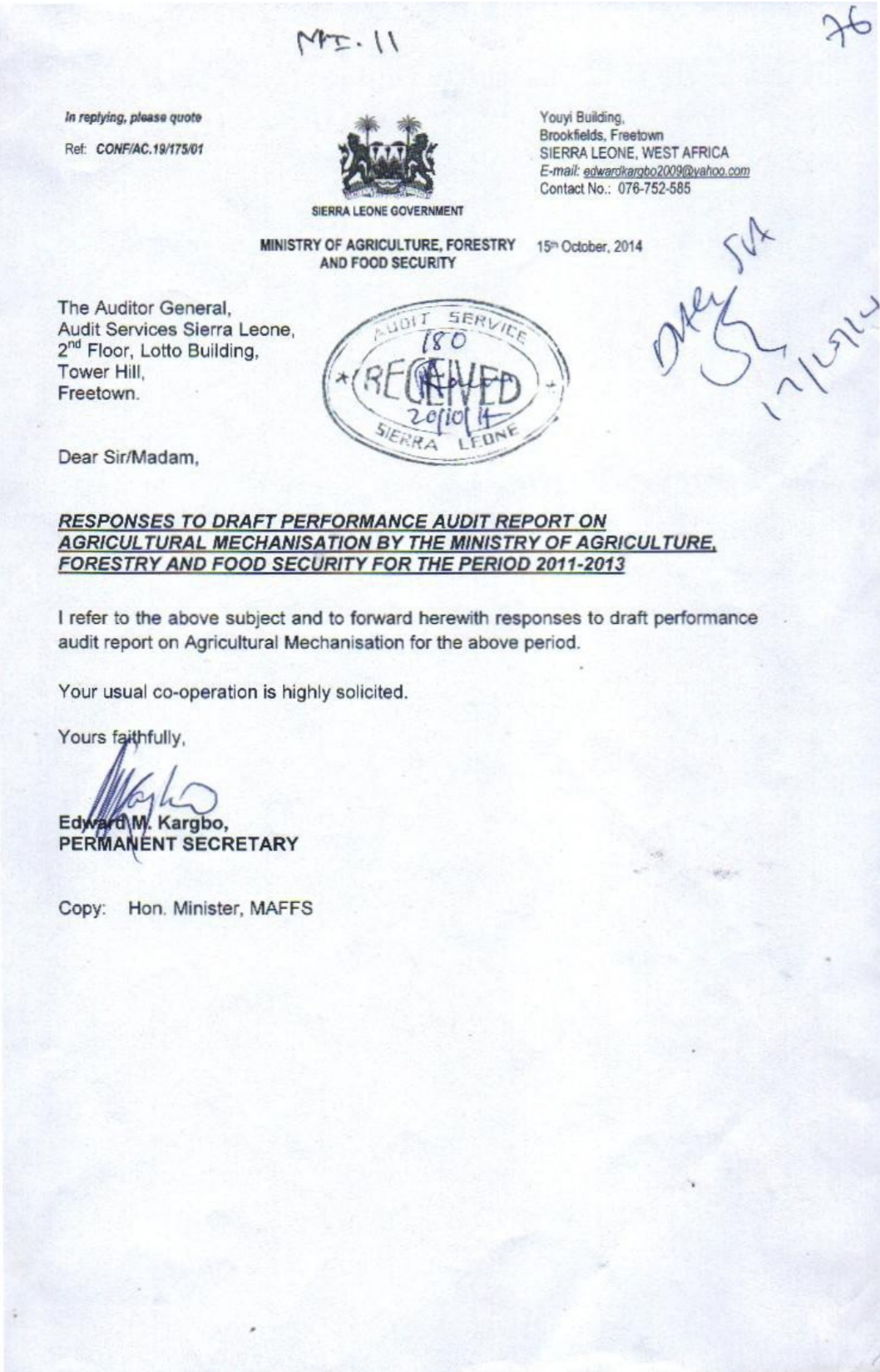
3.1.2 NON WITHDRAWAL OF TRACTORS FROM DEFAULTERS

The MOU signed with FIBank require MAFFS to immediately re-possess tractors from defaulting farmers upon receipt of notification from FIBank. We observed that there had been an increase in the number of defaulters between 2011 to 2013. As at the end of 2013, the total number of continuous and new defaulters in the three districts was 99% (i.e. 121 out of 122 farmers). However, there was no evidence of repossession by the Ministry or notification from FIBank. Two instances of transfer of tractors in the Kambia district and Yele in the Tonkolili district were identified. However, the reasons for such transfer were neither expressed on the letter of transfer nor to the auditors.

RECOMMENDATION

Establish reasonable and practical time frame between default and repossession of the tractors. This process should be clearly documented and communicated to the debtors. The Ministry should clearly reiterate their ownership of the tractors until full payment is made by loan beneficiaries;

APPENDIX IV: RESPONSE FROM MAFFS



1.2 MOTIVATION

According to the Food and Agricultural Organisation’s (FAO) country information on food insecurity, Sierra Leone is food insecure. It states that “a fundamental aspect of poverty in Sierra Leone is that food poverty and the food security situation is dire. About 1.3 million people or 26 percent of the population is food poor and cannot afford a basic diet”. Although recent 2007 MAFFS projections showed much higher access to rice, commercial imports have been unable to fill the gap between requirements and local production, food aid has assumed an important role.

There is an annual seasonal hunger problem between successive harvests in rural areas of Sierra Leone, This amongst others, is as a result of insufficient production to meet year-round subsistence needs, distress sales at harvest time to generate cash to pay debts, lack of diversification of farming systems and losses in on-farm storage.

In 2010 – 2013, the World Food Program’s (WFP) hunger map ranked Sierra Leone very high (≥35%) in terms of hunger. Malnutrition due to hunger and starvation was also identified in the 2012 United Nations Children’s Fund’s (UNICEF) Annual Report for Sierra Leone, as one of the main causes of the high infant and maternal mortality rate in Sierra Leone.

From table 1.2 the importation of rice, the staple food in Sierra Leone rose from 185 metric tonnes (mt) in 2010 to 325mt in 2013 which was estimated to be a 75.7% increase.³

Table 1.2 Rice Import of Sierra Leone, 2010 – 2013		
Market year	Trade Year Import	Unit of Measure
2010	115	(1000 MT)
2011	260	(1000 MT)
2012	275	(1000 MT)
2013	325	(1000 MT)
Source: World Fact book, Central Intelligence Agency, US. Department of Agriculture		

Table 1.3 Prices of locally Produced Rice and Imported Rice in Sierra Leone 2010 – 2013					
Item	Unit	Average Prices in Leones (Le) Per Year			
		2010	2011	2012	2013
Local rice	1Kg	2,853	3,381	4,056	4,428
Imported rice	1 Kg	2,619	3,318	4,071	3,899
Source: Statistics Sierra Leone					

Table 1.3, shows that the price of locally produced rice was higher than the price of imported rice in all the years reviewed except 2012; the price difference was greater in 2013; when locally produced rice was 12% higher than imported rice.

Based on the above information, the importance of agricultural improvement initiatives and activities of the ministry cannot be over emphasized.

³Dunstan Spencer, *Issues in Food Security and Cash Crop Production in Sierra Leone* , Enterprise Development Services Ltd

Agricultural Mechanization by MAFFS

One of the strategic objectives of the government is to increase budgetary allocation to the ministry from 1.7% to 10% of the national budgetary provision. Huge investments in the form of government funding and donor supports have been made in this direction. For the period 2010–2013 direct government funding to the ministry amounted to 95 billion Leones.⁴

In 2010, the MAFFS acquired 263 tractors on loan from the Indian Government. These tractors were sold to farmers on hire purchase with forty percent (40%) subsidy from GoSL together with agricultural implements, pesticides, insecticides, herbicides and seeds.

In a bid to understand the effect of these interventions on the agricultural sector in Sierra Leone and against the above background, a Performance Audit was conducted on the Ministry of Agriculture Forestry and Food Security (MAFFS).

1.3 AUDIT DESIGN

Audit Objective

The objective of the audit was to examine how efficient and effective the MAFFS has been in improving food security (food availability, affordability and accessibility) through the implementation of agricultural mechanisation.

1.4 SCOPE

The audit was carried out on the MAFFS focussing on agricultural mechanisation; it covered the MAFFS’s headquarters and its district offices of the Kambia, Bombali and Tonkolili districts for the period 2010 – 2013.

1.5 AUDIT QUESTIONS

The audit focused on the following issues:

- To what extent did the Ministry of Agriculture Forestry and Food Security manage the hire purchase scheme?
- Were the acquired farm machineries used to improve productivity?
- Did the mechanisms put in place minimize pre- and post-harvest losses?
- Did the ministry provide adequate technical support to farmers?

1.6 METHOD AND IMPLEMENTATION

The audit was conducted in accordance with Performance Auditing Standards set by the International Standards of Supreme Audit Institutions (ISSAIs).

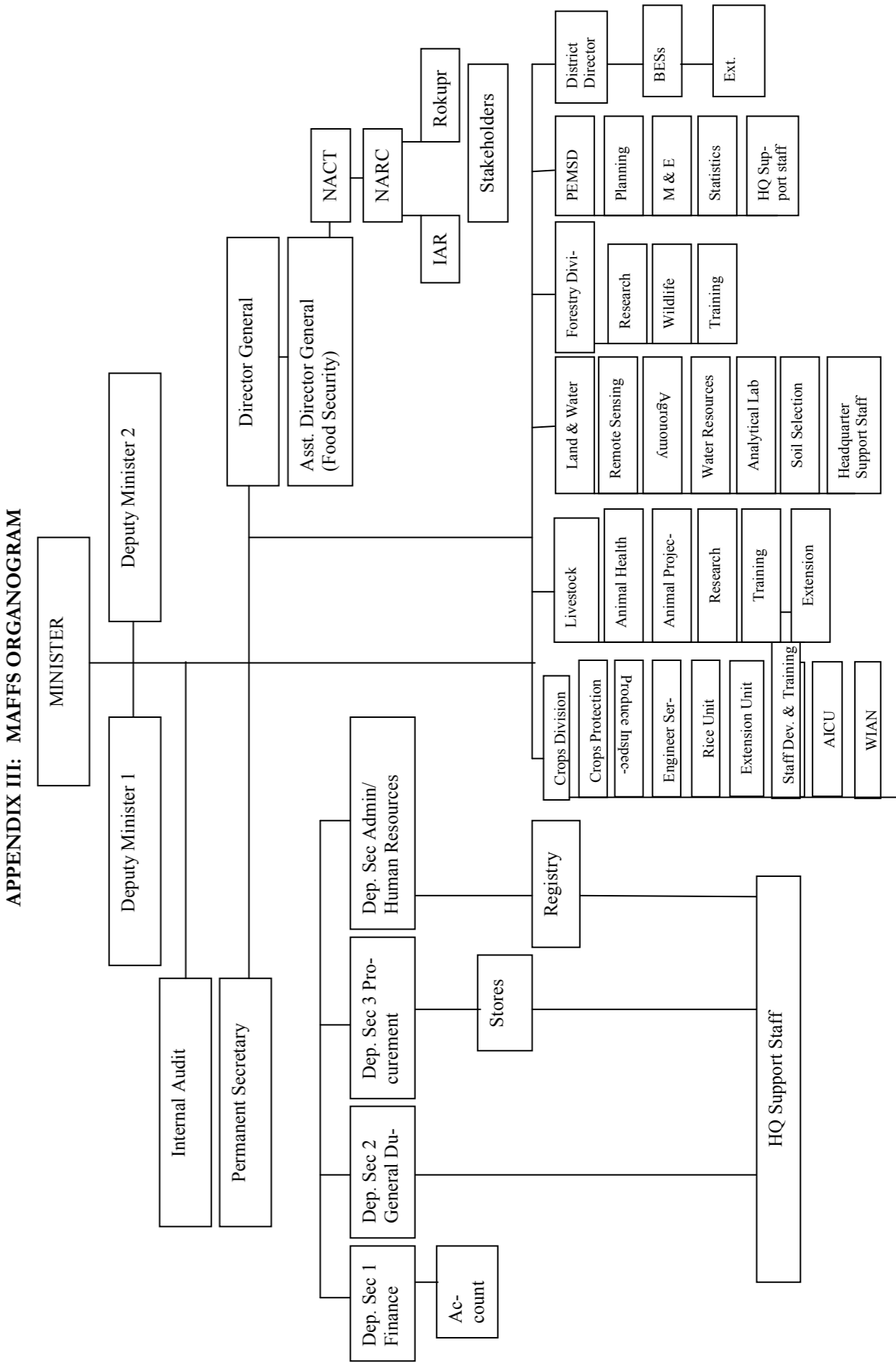
The team collected data using the following methods:

Document Review

The documents listed in Appendix I were reviewed with the purpose of understanding the operations of the MAFFS, the implementation, progress and challenges of the mechanisation progress.

⁴Ministry of Finance and Economic Development (MoFED), *Expense analysis report*

Agricultural Mechanization by MAFFS



APPENDIX II: LIST OF INTERVIEWEES AND REASONS FOR INTERVIEW

Interviewees	No. of Interviewees	Reasons for Interviews
THE MAFFS HEADQUARTERS		
Permanent Secretary	1	Vote Controller of the ministry
Chief Agriculturist	1	Professional head of the ministry
Director of Crops	1	Head of the directorate responsible for crops production and protection.
Director of Agricultural Engineering	1	Head of the directorate responsible for both civil and mechanical agricultural engineering.
Director of Extension	2	Head of the directorate responsible for the transfer of technology to the farmers
Deputy Director of PEMSD	1	Deputy head of the directorate responsible for planning, evaluation, monitoring and statistics.
Chief Store Keeper	1	Responsible for stores at headquarters.
Stores Superintendent	2	Responsible for the MAFFS central store
MAFFS DISTRICT OFFICES		
District Agriculture Officers	4	Heads of the district agricultural offices
District Crops Officers	4	Responsible for crops production and protection at district level
District Agricultural Engineers	4	Responsible for agricultural engineering at district level
District Extension Officers	4	Responsible for extension at district level
District M&E Officers	4	Monitoring and evaluation at district level
District Store Keepers	4	In charge of the MAFFS district stores
Block extension supervisors	15	Responsible to supervise the district agricultural blocks
Frontline Extension Workers	3	Responsible for the supervision of the agricultural circles in the different blocks
FARMERS		
Heads of FBOs	20	Coordinators of the different FBOs
Managers of Agricultural Business Centres	20	Responsible for the management of the Agricultural Business Centres
Master Farmers	15	They acquired the HP tractors
MAJOR STAKEHOLDERS		
SMALL HOLDER COMMERCIALISATION PROGRAMME Coordinator	1	Responsible for coordinating the SMALL HOLDER COMMERCIALISATION PROGRAMME projects
DFPP Coordinator	1	Responsible for diversified food production
Director-General of SLARI	1	Head of the national agricultural research institute
DISTRICT COUNCILS		
Chief Administrators	4	Volt controllers of the district councils
Council Agriculture Chairpersons	4	Liaison between the District councils and the MAFFS

Interviews

The audit team conducted interviews with officers of the MAFFS to ascertain their roles and responsibilities towards the mechanisation process and to understand the aims, objectives, implementation, progress and challenges of the mechanisation process. Members of Farmers Based Organisations (FBOs), Master Farmers and Managers of Agricultural Business Centres (ABC) were also interviewed to assess the impact of the mechanisation process. See Appendix II for list of interviewees.

Physical Inspection

The team also inspected Agricultural Business Centres, upland and lowland farm sites, tractors and other farm machinery in the districts of the Kambia, Bombali, and Tonkolili districts to ascertain the status of the mechanisation process. During the inspections, photographs were taken to support evidence of the issues presented in this report.

The team visited the north because of its vast boliland and 65% (171) of tractors (from the scheme) were allocated to the North compared to other regions as shown in the table 1.4:

Table 1.4 Distribution of Machinery by District		
Region	District	Tractors Distributed 2010
NORTH	Bombali	62
	Tonkolili	49
	Kambia	23
	Port Loko	22
	Koinadugu	15
TOTAL		171
EAST	Kono	15
	Kenema	2
	Kailahun	5
TOTAL		22
SOUTH	Bo	10
	Bonthe	13
	Pujehun	14
	Moyamba	16
TOTAL		53
WEST	Western	17
TOTAL		17
GRAND TOTAL		263
Source: PEMSD, MAFFS		

We presented a draft version of this report to the MAFFS for their comments which was received on the 15th October, 2014 and was duly considered in finalising the report.

2. AGRICULTURAL MECHANISATION

2.1 BACKGROUND OF MECHANISATION IN MAFFS

The Ministry of Agriculture Forestry and Food Security (MAFFS) is the government's ministry responsible for the formulation, supervision and implementation of all agricultural policies in the country. It also coordinates and implements intervention programmes put forward by various sectors, funded by the government and donors to ensure that the food security objective is achieved.

Agriculture had been one of the top most priority of the Government of Sierra Leone (GoSL) as disclosed in 2007 in the country's second generation Poverty Reduction Strategy Paper (PRSP) II (Agenda for Change).

Agriculture remains to be of high priority as articulated in the GoSL's third generation PRSP of 2013-2017 also known as the Agenda for Prosperity. The strategic objectives and priority activities are stated thus:

- increase farmers' access to agricultural inputs – fully make operational the Agricultural Business Centres, including construction and provision of equipment;
- continue to provide extension services to farm households,
- provide farmers with improved chemicals, seeds, and tools.

In a bid to achieving the above objective, the MAFFS provided tractors under a Hire Purchase Scheme (hire purchase scheme) in order to support local farmers to realise their full potentials in the production of rice and other crops. The First International Bank (FI Bank) agreed with the MAFFS to be the implementer of the hire purchase scheme and provider of related services for and on behalf the MAFFS through a Memorandum of Understanding signed between the MAFFS and the FI Bank.

In order to benefit from the scheme, the tractors were advertised in the open market so farming groups could apply for the tractors on hire purchase with a loan repayment period of seven years.

All of these mechanisation approach targeted small-holder farmers, who constituted approximately 90% of the farmer population.

VISION, MISSION AND POLICY OBJECTIVES

Vision:

The vision of MAFFS is to make agriculture the engine for socio-economic growth and development through commercialisation and private sector/FBO promotion.

⁵ Draft Policy for the Agricultural sector of Sierra Leone

⁶ Draft Policy for the Agricultural sector of Sierra Leone

6. APPENDIX

6.1 APPENDIX I LIST OF MAJOR DOCUMENTS REVIEWED

Documents reviewed	Reasons for review
The Public Procurement Act 2004	To examine if public procurements by the MAFFS were done in accordance with the NPPA 2004.
The Public Procurement Regulation	To understand the national procurement laws
The Farmers Federation Act	It spells out the legal relationship between the farmers' organisation and the ministry.
The State Lands Act 1960, Cap 193	To confirm the legal ownership of wetlands in the country.
The Agenda for Prosperity (PRSP3)	Contains the Government plan for the agricultural sector
National Sustainable Agriculture Development Plan 2010 - 2013	It shows the roles and responsibilities, objectives and targets of the different directorates of the MAFFS
The Agenda for Change (PRSP2)	It also contains the Government plan for the agricultural sector.
MAFFS Work Plan Objectives and Indicators	Describe extension supervisors the roles and responsibilities, objectives and targets of the different directorates of the MAFFS
Agricultural Statistics Bulletin	It gives data on all agricultural activities recorded by the MAFFS
Small Holder Commercialisation Programme Equipment Supplied to FBOs	It gives details of SCP support to FBOs, ABCs and individual farmers.
Notification of Successful Bids for the MAFFS Higher Purchase Scheme	It gives information on the name and contact of successful bidders for the HP tractors and the agreement between them and the MAFFS.
MAFFS Organogram	It shows the organisational structure of the MAFFS
Issues in Food Security and Cash Crop Production in S/L	It is a publication on food security in Sierra Leone for review by the World Bank.
The MAFFS Presentation on the Agric. Performance in S/L 2007-2012	It shows the status of agricultural activities in country 2007-2012
SCP Investment Plan	It is a 5 year national sustainable agricultural development plan
Hire Purchase Scheme Contract Agreement for the Tractors	It shows the obligations of the farmers and the ministry in the Higher Purchase Agreement.
The MAFFS assets delivered to the district	They are list of all agricultural assets delivered by the MAFFS to all the districts.
MOU between MAFFS and FI Bank SL Ltd	It contains the agreement between MAFFS and FI Bank with regards to the Hire Purchase Tractors
Summary of Payment for Hire Purchase Tractors	It gives a breakdown of the yearly payment, actual payment and balance outstanding for the years.
Country Pasture/ Forage Profile of Sierra Leone by Asamoah Larbi for FOA	It gives a general overview of agriculture in Sierra Leone.
Expense Analysis Report and Local Government Grant 2010-2013	It shows government allocations to MAFFS
Issues in Food Security and Cash Crops Production in Sierra Leone	It is a report on food security in Sierra Leone written for the World Bank
List of ABCs and Their Status	It is a survey document showing ABCs and their activity level
FAO Country Information	It gives FAO country information on Sierra Leone
2014 AU Agric. Commitment	It shows the commitment of all African leaders to agriculture
Plant Health Clinics or Plantwise	It contains MAFFS support for crops protection

5. RECOMMENDATIONS

In order to ensure that the objective of increased productivity is achieved, the MAFFS should:

- Promptly review with all concerned stakeholders, the implementation of the hire purchase scheme, identify and agree on support mechanisms that are workable. This will ensure that the farmers can have tractors that are in good working condition which will enable them to be productive and profitable, and eventually pay off their loans.
- Review the memorandum of understanding between MAFFS, the Bank and farmers; taking into account the challenges experienced by all parties concern and implement better enforcement procedures for the repayment of the outstanding loans.
- Establish reasonable time frames between default in repayment, and repossession of the tractors. This process should be clearly documented and communicated to the debtors. The Ministry should clearly reiterate their ownership of the tractors until full payment is made by loan beneficiaries.
- Make reliable arrangements for the supply of spare parts and improve on maintenance services. They should provide mechanical workshops through qualified trained mechanics at district levels. Undertake a training of trainers' workshops; these trainers could then train others especially the new operators.
- Ensure frequent follow-up visits are planned by the district offices so that farmers could be monitored and supported on the efficient utilisation of tractors in order to minimise frequent broke-down.
- Recruiting, training and monitoring sufficient Block Extension Supervisors and Frontline Extension Workers to cover the 13 districts and evaluating their performance against those of the ABCs that are responsible for oversight. In carrying out such supervisory support, farmers should be educated on the methods of planting and pest management that must yield the best results.
- Ensure that adequate monitoring and follow-up is done for the effective operation of the Agricultural Business Centres. Make sure that the facilities for the efficient running of the Agricultural Business Centres are completed, and assess productive areas and provide them with modern farming facilities such as tractors, rice tillers, improved seeds, fertilizers, herbicides, harvesters, de-stoners, etc at agreeable terms.
- Ensure that farmers are aware of the existence of fully staffed Plant Health Clinics and sufficient chemicals and other resources.

Mission:

The Ministry of Agriculture, Forestry and Food Security seeks to improve agricultural production and productivity in order to achieve food security, by providing the enabling environment for farmers and promoting appropriate research, extension, input delivery and marketing systems, thereby improving on rural incomes, reducing poverty and maintaining the natural environment.

Policy Objectives:

The policy objectives of the ministry include:⁷

Enhance increase in agricultural productivity (intensification)

- Promote Commercial Agriculture through private sector/FBO participation (extensification)
- Improve research and extension service delivery

2.2 ORGANISATIONAL STRUCTURE OF THE MAFFS

The political head of the ministry is the minister assisted by two deputy ministers. The technical head is the Director General (DG) of agriculture and the administrative head is the Permanent Secretary (PS). The ministry is divided into six directorates, each headed by a director – Crops, Livestock, Extension, Planning Evaluation Monitoring and Statistics Division (PEMSD), Engineering and Forestry.

The Ministry has district offices in all the twelve districts and one in the Western rural Area. Each district office is headed by the District Agriculture Officer (DAO) and all the directorates are represented in all the districts offices. See organisational chart in Appendix 3

2.3 ROLES AND RESPONSIBILITIES OF KEY PLAYERS

Crops Division

This division provides an enabling environment for increased agricultural production in view of achieving food sufficiency and security by promoting research and extension, inputs, delivery and marketing aimed at improving rural incomes and reducing poverty.

Planning, Evaluation, Monitoring and Statistical Division

This division formulates agricultural policies and carry out development programmes, analysis and planning. Conduct price and marketing studies, monitor and evaluate field activities and programmes, collect, process, analyse and disseminate agricultural activities.

Agricultural Extension Service Division

This division is responsible for fully rehabilitating and increasing coverage and effectiveness of the agricultural extension deliveries services. It also provides a mass of infrastructure in order to increase the pace of agricultural development, reduce poverty and improve rural welfare.

Agricultural Engineering Division

This division creates an enabling environment for increased food production through the judicious use of farm machinery, land and water resources.

⁷ MAFFS Work Plans, Objectives and Indicators

District Councils

The district councils collaborate with the MAFFS officers within the districts to implement mechanised agricultural activities through organised workshops and seminars which are factored in their annual activity plan. They also engage the media to sensitise farmers on how to avoid pre and post harvest losses

Block Extension Supervisor and Front Line Workers

The organisational structure of the District's Extension Division indicates that each district is divided into Agricultural Blocks and these Blocks are divided into Circles. The Blocks are supervised by Block extension supervisors and agricultural activities in the Circles are supervised by Frontline Extension Workers. The Frontline extension workers report directly to the block extension supervisors. They are responsible to transfer new technologies to the farmers, bridge the gap between the MAFFS and the farmers and guide them on how to promote sustainable agricultural development.

Smallholder Commercialisation Program

According to the MAFFS's National Sustainable Agriculture Development Plan, Small Holder Commercialisation Programme Investment Plan, May 2010, the Small Holder Commercialisation Programme aims to help the rural poor by increasing food security and income to achieve sustainable economic development. This is clearly stated in component 1 (production intensification, diversification, value addition and marketing) which also include the following

- Support to Farmer Field School (FFS)/Farmer Base Organisations (FBOs);
- Support to Agricultural Business Centres (Agricultural Business Centres); and
- Improved agricultural services.

Agricultural Business Centres

The Agriculture Business Centres (Agricultural Business Centres), are owned and managed by associations of Farmer-Based Organisations (FBOs) with the long-term objective of becoming commercial entities such as limited liability companies or cooperatives that are providing vital services to their respective rural communities. The membership of each ABC ranges from three to five FBOs. The FBOs are composed of clusters of Farmer Field Schools (FFS), with a membership of 25-30 farmers each.

Through the Agricultural Business Centres, the government seeks to move the smallholder farmer from the use of the traditional hoe and cutlass to the use of modern farming facilities such as tractors, rice tillers, improved seeds, fertilizers, herbicides, harvesters, de-stoners, threshers, rice mills and cassava graters.

2.4 FUNDING

The Ministry is funded mainly by the GoSL through quarterly allocations from the Consolidated Revenue Fund. The ministry also receives Local Councils' Equitable Grants for its devolved functions. It also benefits from the support of donor partners. Annual allocations to the ministry fluctuated with a sharp increase of over 6 billion Leones in 2012 from 33,883,449,738 in 2011.

The table 2.1 shows GoSL annual allocations to the MAFFS and the grants to local councils for devolved agricultural activities for the period under review.

4. CONCLUSIONS

Based on the findings presented in this report and the available pieces of evidence, the auditors concluded that:

- The Ministry did not efficiently manage the hire purchase scheme;
- The acquired farm machineries were not used to improve productivity;
- The mechanisms put in place by the ministry did not minimise pre and post-harvest losses and
- Adequate technical support was not provided to farmers.

This greatly affected the ability of the farmers to repay their loans and outrightly own the tractors and improve their productivity and profitability.

Ultimately, only a few tractors could fulfil their purpose, while the majority were underutilised. This affected productivity. Eventually, if immediate action is not taken, the Hire Purchase scheme could be redundant long before its proposed end date.

The activities of the ministry will be adversely affected by the absence of Block Extension Supervisors and Frontline extension workers in these circles. This will further affect the transfer of knowledge to farmers making it difficult for farmers to adapt new and improved farming technology.



Incomplete latrine in Masinbgi inTonkolili district Incomplete hand pump in the Tonkolili District

Some of the managers of the Agricultural Business Centres we visited explained that, some farmers found it difficult to access the stores of the Agricultural Business Centres because of the distance from market centres and outlet to many farming communities. This was also noted from the status overview reported by the MAFFS, February to April, 2013.

Table 2.1 Funding for MAFFS				
Source	Total Allocations (Le)			
	2010	2011	2012	2013
GoSL Annual Allocations	25,407,195,745	20,355,949,738	26,475,805,005	22,869,321,866
Local Councils Equitable Grants	13,019,370,000	13,527,500,000	14,000,000,000	14,070,000,000
Total	38,426,565,745	33,883,449,738	40,475,805,005	36,939,321,866
Source: MAFFS Expense Analysis and Local Councils Equitable Grants Distribution				

2.5 AGRICULTURAL MECHANISATION

Agricultural mechanisation covers the use of tools (hoes, rakes, shovels etc), implements (disk harrows, sprayers, planters, harvesters etc) and machines (tractors, power tillers, bull dozers) for agricultural land development, crop protection, harvesting and preparation for storage, and on-farm processing. It incorporates three main power sources: human, animal, and mechanical. The manufacture, repair, maintenance, management and utilisation of agricultural tools, implements and machines are covered under this discipline. It also includes the supply and distribution of agricultural inputs to the farmers in an efficient and effective manner.

The agricultural mechanisation process is divided into the following stages: land preparation/development, seedbed preparation for upland and lowland, cultivation, crop protection practices in the field, harvesting and storage.

Land preparation/development involves the clearance of farm site, soil opening with deep tillage equipment moving soil from high to low spots, making farm roads, field bunding/bund walls and leveling etc.

Seedbed preparation for raising upland crops, involves loosening of the soil by the use of tractors for upland and power tillers for low land farming. This is done in order to achieve a desired granular soil structure for a seedbed and to allow rapid infiltration and good retention of moisture, to provide adequate air exchange capacity within the soil and to minimize resistance to root penetration and shoot growth.

The next stage in the mechanisation process is to plant or cultivate. Tractors can also be used in crop cultivation with different types of implements.

Crop protection is the science and practice of managing invertebrate pests and vertebrate pests, plant diseases, weeds and other pest organisms that damage agricultural crops and forestry.

3 FINDINGS

Based on the experiences from other developing countries such as Benin and Ghana, mechanisation (the use of machines, crops and agro-chemicals) has been the backbone of an improved and efficient agricultural activity. Significant funding have been directed into agricultural inputs especially farm machinery to boost the agricultural sector in Sierra Leone. Despite these interventions, the country still experiences low agricultural output/poor yield. The following are our findings from the audit:

3.1 PAYMENT FOR THE HIRE PURCHASE TRACTOR

The MAFFS provided tractors in 2010 under a Hire Purchase Scheme to support local farmers to improve yield in the production of rice and other crops. The GoSL acquired these tractors on loan from the Indian Government and distributed them to farmers on hire purchase with a forty percent (40%) subsidy from GoSL.

The hire purchase scheme was done in an open market to attract farming groups which were the first priority, based on their strength and effective payment. Since the MAFFS cannot do direct business with the public, it contracted the services of the First International Bank Ltd to act as the implementer of the Hire Purchase Scheme and provider of related services. A Memorandum of Understanding between First International Bank Ltd and MAFFS was initially signed on the 28th of January, 2010. To strengthen the repayment conditions of the scheme, it was also stated in the MOU that all repayments should be made to the participating bank and/or as directed in the hire purchase agreement.

The ministry could not provide the detailed terms of the loan agreement between the GoSL and the Indian government.

The signed MOU indicated that for the acquisition of the Hire Purchase Tractors between the MAFFS, the First International Bank Ltd and the farmers, the tractors were sold to the farmers on loan at 4% interest per annum, repayable on an annual instalment over a period of seven years. A review of the loan repayment documents showed that a total of Le. 6, 369, 538, 151.05 (74.0%) had not been paid by the farmers between the loan period 2011 to 2013. An analysis of the loan repayment documents revealed that in the first year (2011) hire purchase scheme farmers paid 71.0% of the amount due. Nevertheless, a significant reduction from 71.0% to 6.5% was recorded on the loan recovery activities in 2012. In 2013, MAFFS recovered only 0.4% of the outstanding loan.

Table 3.1 below shows the total amounts beneficiaries should have paid, amount actually paid and the total outstanding over the period 2011-2013.

⁸ Issues in food security and cash crop production in Sierra Leone, January, 2012

Table 3.6.2 Activity level of ABC for the three Districts visited			
District	Activity Level of ABC	Number of ABC's	Percentage (%) Activity of ABC
Bombali	High	0	0
	Medium	5	28
	Low	8	44
	None	5	28
	total	18	100
Kambia	High	0	0
	Medium	5	33
	Low	8	53
	None	2	13
	total	15	100
Tonkolili	High	0	0
	Medium	7	41
	Low	8	47
	None	2	12
	total	17	100
Total		50	100
Source: ASSL's analysis of the MAFFS of the status overview of Agricultural Business Centres as per Final report February – April 2013			

Of all the Agricultural Business Centres visited, only (Rofeika women, Masungbala Chiefdom in the Kambia district and Kalasongoia ABC in Bumbuna, Tonkolili district) were accessible with ongoing activities. The rest had no indication of ongoing activities.

During the visits we conducted in the three districts and interviews with representatives of those Agricultural Business Centres, we noted that some of the reasons for the inefficiency of the Agricultural Business Centres could be attributed to the lack of equipment. Four did not have machines like de-stoner, power tiller and cassava grater; and 8 out of the 13 stated that they experienced frequent breakdown of machines. (See photo below) Site inspections revealed that the construction of buildings and facilities like hand pumps; and pit latrines, were incomplete. See photographs below:



Broken down power tiller at the Masugbala ABC in the Kambia District

Interviews with the district officials revealed that the reason for the shortage of technical staff was that some Block extension supervisors and Frontline extension workers had retired and not been replaced.

3.6 AGRICULTURAL BUSINESS CENTRES (ABC)

The objective of setting up the Agricultural Business Centres was to create viable agricultural business and service provision enterprises to improve the lives of farmers and general socio-economic development.

Expected services to be provided by Agricultural Business Centres with the support of Small holder Commercialisation Programme amongst others include; access to input supplies, technical support to processing/value addition and post-harvest storage; and promoting marketing. One of the key outcomes outlined in the Small Holder Commercialisation Programme investment plan is the establishment of functional and well managed Agricultural Business Centres.

An analysis of the MAFFS’s status overview of 193 Agricultural Business Centres as per the Small Holder Commercialisation Programme’s final reports (February to April 2013) set out in table 3.6.1 below shows that the activity level of 59% of all the Agricultural Business Centres were below medium. The activity level of 46% of the ABCs was low and 13% of them had no activity level meaning that they were completely not functioning.

Table 3.6.1 Activity level of the total number of ABC as at April, 2013		
Activity Level of ABC	Number of ABC's	Percentage of ABC
High	0	0%
Medium	80	41%
Low	88	46%
None	25	13%
Total No of Agricultural Business Centres	193	100
Source: ASSL’s analysis of the MAFFS ‘s status overview of Agricultural Business Centres as per final report February – April 2013		

Further analysis was done for the three districts visited and is set out in table 3.6.2 below, In each district, the majority of ABCs had low or no activity: The activity level of 66% of the ABCs visited in Bomabili, Kambia and Tonkolili was below medium. None of the 50 ABCs in the 3 districts had a high activity level.

Table 3.1 Summary of Tractor Hire Purchase Loan Repayment					
Year	Yearly payment Amount to be repaid (Le)	Loan repayment Actual amount repaid (Le)	Amount outstanding (Le)	Proportion repaid (%)	Proportion outstanding (%)
2011	2,869,012,556.84	2,037,441,751.48	831,570,805.36	71.0	29.0
2012	2,869,012,556.84	187,532,846.71	2,681,479,710.13	6.5	93.5
2013	2,869,012,556.84	12,524,921.28	2,856,487,635.56	0.4	99.6
Total	8,607,037,670.52	2,237,499,518.93	6,369,538,151.05	26.0	74.0

Source: Analyses of MAFFS’s tractor hire purchase loan repayment (2011 to 2013)

Some of the eleven beneficiaries interviewed in the north (Bombali, Tonkolili and Kambia districts) explained that the tractors were operational during the first year of the scheme with instances of frequent breakdown in the subsequent years. The above situation affected the farmers’ ability to maintain the repayment agreement due to low productivity and profitability. They also attributed the non repayment to the lack of spare parts and the high cost of acquiring the spares when available.

Since one of the intentions of the hire purchase scheme was to enable farmers to own tractors and further extend the scheme to other farmers; the non-repayment of the loan for these tractors has negatively affected the ministry. It has not only lost its much needed funds, but has not achieved an important goal in the mechanisation drive towards food security.

3.2 NON WITHDRAWAL OF TRACTORS FROM DEFAULTERS

It is stated in the MOU of January, 2010 that legal ownership of all tractors, machinery and equipment under the scheme shall remain the property of the MAFFS until final payment has been effected in accordance with the MOU.

The MOU also stipulated that upon notification from the participating bank forwarding defaults from beneficiaries, the MAFFS shall immediately re-possess the assets that are the subject of agreement between that client and the participating bank.

The auditors analysed the hire purchase scheme loan repayments for 230 tractors distributed to beneficiaries for the period 2011 to 2013 and noted the following issues:
The total number of beneficiaries who did not repay the full amount due (defaulters) in the three districts for the years 2011-2013 was 121 out of 122 for the stated period.

In 2011, there were incomplete payment of 30 out of 56 beneficiaries in the Bombali district, 26 out of 45 beneficiaries in the Tonkolili and 10 out of 21 beneficiaries in the Kambia districts.

In 2012, only 3 beneficiaries each made part payments of their yearly commitments in the Tonkolili and the Kambia districts. It was also realised that the number of defaulters considerably increased from 2 to 52 for Bombali, 2 to 40 for the Tonkolili and 16 in the Kambia; 119 paid nothing.

The data analysis also revealed that only one beneficiary made part payment in the Bomboli district in 2013 whilst non compliance in terms of repayment was noticed on the side of beneficiaries in both the Tonkolili and the Kambia districts, thereby increasing the number of defaulters to 55 – the Bombali, 45 –the Kambia and 21 the Tonkolili districts respectively.

We noted from the list of tractor beneficiaries on the loan repayment form that the tractors were still in the possession of the defaulting beneficiaries. The Ministry did not provide evidence on whether immediate steps have been taken to withdraw/ repossess the tractors from defaulting beneficiaries as enshrined in the MOU. Two instances of transfer of tractors in the Kambia district and Yele in the Tonkolili districts were identified. However, the reasons for such transfers were neither expressed on the letter of transfer nor to the auditors.

The increase in the chain of defaulters has been attributed to the failure of the Ministry to strictly monitor the use of the tractors and repossess the tractors in first year of default as stipulated in the MOU.

Significant increase of defaulters undermines the ability of the ministry to recover the loan under the agreement. It may also shatter the GOSL’s aspiration in pursuing the mechanisation objectives which consequently increases the burden in achieving food security and poverty reduction.

3.3 UTILISATION OF TRACTORS

3.3.1 Frequent breakdown of tractors

The tractor hire purchase scheme was agreed over a seven year period according to the loan agreement and beneficiaries should repay the loan within the stated period, after which farmers will fully own the tractors. The provision of tractors to farmers on hire purchase terms was aimed at empowering farmers to do business in agriculture.

The policies and procedures governing the hire purchase scheme for the MAFFS’s assets in January, 2010 required land preparation to be verified and certified by the MAFFS before using the tractors on the land.

During field visits to the three districts, the auditors undertook spot checks on 11 tractors in the Bombali and Kambia districts and also conducted interviews with beneficiaries and/or their representatives. It was then revealed that the tractors started developing serious mechanical problems/ breakdown during the first year of acquisition. Interviews held with the Ministry’s district engineers revealed that farmers did not clear or de-stump the land properly before using the tractors. The reasons for the frequent breakdown of tractors identified during the audit were:

- There was no evidence provided by the ministry to show that farmers were provided with the necessary equipment like heavy duty machines to clear, de-stomp the land, to guide farmers on land preparation for the operation of the tractors.
- There were inadequate trained tractor operators, because operators trained by the ministry were not paid or motivated with incentives; so they used untrained personnel to operate the tractors.



Partial view of a cassava plantation destroyed by grasshoppers in Tonkolili district

3.5 OUTREACH OF TECHNICAL SUPPORT BY THE MINISTRY

The organisational structure of the District Extension Division indicates that each district is divided into Agricultural Blocks and the Blocks are divided into Circles. The Blocks are supervised by Block Extension Supervisors and agricultural activities in the Circles are supervised by Frontline Extension Workers. The Frontline extension workers report directly to the Block extension supervisors. The support from Frontline extension workers is critical to farmers in promoting sustainable agricultural practices. Therefore there should be one block extension supervisors per block and one Frontline Extension Worker per circle. There are in total 55 Blocks and 520 Circles.

The analysis in table 3.4.1 shows that there was a serious shortfall of Frontline extension workers in the district covered by the audit. Out of 128 Frontline extension workers required, only 16 (12.5%) were in post as at the time of audit, this translates to 12.5% of FEW positions.

Table 3. 4.1 Analysis of the current number of Frontline extension workers in Kambia, Koinadugu and Bombali					
District	No. of blocks	No. of circles	No. of Frontline extension workers required	No. of Frontline extension workers in post	% of Frontline extension workers in post
Kambia	4	32	32	4	12.5
Bombali	6	48	48	6	12.5
Tonkolili	6	48	48	6	12.5
Source: MAFFS					

Interviews conducted with the ministry’s district officers confirmed that block extension supervisors and Frontline Extension Workers were not available in some of the Blocks and Circles visited in the Kambia, Bombali and Tonkolili districts. This was further confirmed through field visits to the different blocks and circles. Most farmers (located within these circles) visited by the audit team complained that they received little or no support from the ministry. The farmers found it difficult to adopt improved technology and guidance on the promotion of sustainable agricultural development.

Agricultural Mechanization by MAFFS

One of the pest control strategies employed by the Ministry is that farmers should report prevalence of pest invasion on their crops to the extension officer/crop protection officer in their blocks or to the plant health clinics by taken a sample of infested or disease infected plants to the plant health clinics. These plant clinics operate on market days in the different agricultural blocks and they use specimen of crop infestation for diagnosis and treatment. The farmers explained that Plant Clinics were held by Plant Doctors in towns far away from their own blocks and it was difficult for them to access the facility in the event of an outbreak.

A review of crop protection reports from Kambia and Tonkolili during 2013 revealed that various crops such as grape fruits and mangoes were infested by fruit flies and that this posed a serious challenge to farmers. Serious grasshopper infestation was also reported in the agricultural blocks in Bombali, Tonkolili, Kambia districts.

Below is a photo of pest (grasshopper) infestation on a cassava farm.



Partial view of grasshoppers infestation in Bombali district – 5th February, 2014



Partial view of grasshopper infestation in Kambia district 29th January, 2014

At the time of our visits, specifically in Tonkolili district, we observed that the agro chemicals that were in store at the district offices were expired and therefore could not be distributed to the farmers. There was also no chemical for the control of pest and the sprayers were worn out. MAFFS was unable to provide data on the extent of pre harvest losses due to the lack of pest management.

We understand that one of the reasons for the level of pest infestation was due to mobility constraints for the crop protection officers to visit farm sites. The farmers were advised not to apply the chemicals on their own; they were responsible to buy the chemicals from MAFFs and provide transport fare for the designated officers to apply the chemical. The farmers explained that the agro-chemicals sometimes recommended by the Plant Doctors were expensive and they were unable to meet the costs.

Agricultural Mechanization by MAFFS

- The auditors also observed and confirmed through interviews with District Block Extension Officers (DBEO) that tractors were being used for other purposes like the transportation of construction materials rather than for agricultural purposes which also contributed to breakdown.
- The MAFFS did not monitor farmers’ ownership/use of the tractors.



Partial view of a two year old broken down tractor in Kambia District – 14th February, 2014



Partial view of a two year old broken down tractor in Makeni, Bombali district on 29th January, 2014.

3.3.2 Arrangements for servicing tractors were not effective.

The provisions stipulated in the MOU required the MAFFS to take responsibility for repairs, servicing and maintenance of the hire purchase tractors. This role was expected to be maintained until private mechanical workshops were established (with the assistance of the MAFFS) to take over this function on a commercial basis.

According to the criteria for the distribution of tractors, routine maintenance should be carried out by the MAFFS as a service provider once the provision of spare parts has been effected by the tractor owner. Servicing should be done at the MAFFS district workshops or at the farm sites where the breakdown occurred.

It was noted during the audit that the MAFFS was taking the responsibilities for servicing and repair of tractors by providing a mobile mechanical workshop which was stationed in the district office in Makeni, where loan beneficiaries in the northern region could access the service as free of charge when needed. Interviews with beneficiaries disclosed that they bought fuel for the services of the mobile mechanical workshop to be able to access the breakdown services at their respective farm sites.

The inability of the loan beneficiaries to obtain spares for repairs was also noted. Most of the equipment were out of use, as they needed essential repairs.

The farmers reported that maintenance costs were expensive for the use of the mechanical mobile workshop vehicle provided by the ministry and maintained that they could not afford to pay for the services of the mobile workshop.

It was also noted during interviews with tractor owners and district block extension officers that spare parts for the tractors were not readily available in local stores. They also confirmed that, sometimes orders must be placed with the supplier for the procurement of major spare parts. The farmers and the Ministry disclosed to the auditors that the only supplier of the spare parts was a private dealer in Sonalika tractor and spares based in Kissy, Freetown.

The auditors met with the supplier to inquire on the availability of Sonalika spares. It was then revealed that there was no agreement with the ministry for the provision of spare parts for the Sonalika tractors on hire purchase to farmer. This was confirmed by MAFFS.

The reason for the constraints farmers experienced in servicing, maintenance and repair of tractors can be attributed to the fact that the MAFFS did not make practical arrangements or provision for obtaining spare parts.

3.4 PRE AND POST HARVEST LOSSES

3.4.1 Method of planting

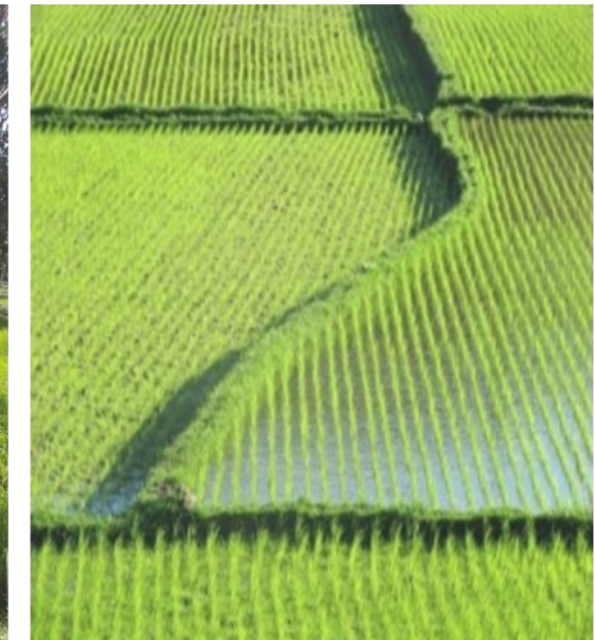
Line planting was recommended to local farmers by the MAFFS to promote efficient agricultural practices, which address weed and pest management. This method of planting allows farmers to easily move around their farms, create proper spacing, pest management and weed control. This is the ideal method of mechanised farming; which makes it easy to use machines during ploughing, cultivation and harvesting.

Interviews with the Block Extension Officers revealed that farmers were encouraged to do line planting. Farmers were trained by the MAFFS on how to include line planting and scattered planting through the use of demonstration plots, it was made clear in the training that line planting produced more yields than scattered planting.

However, most of the farmers continued to do scattered planting. This was observed through physical inspection of farm sites. Below is a photograph of scattered rice cultivation and line planting.



Photo of clustered rice cultivation in Bombali District 5th February, 2014



Example of line planting in rice cultivation

The major cause of the above findings was that the farmers cultivated large acres of land and did not have the capacity to undertake the recommended agricultural practices. Another reason suggested was that farmers were not willing to move from their traditional agricultural practices and adapt to new methods of farming.

We identified two reasons for farmers continuing with scattered planting:

- Farmers not willing to move from traditional practices and adapt.
- Farmers lack capacity to undertake mechanised practices.

Scattered plots in rice cultivation do not produce maximum yield because the seedlings are not able to access the required nutrients. It also makes the use of machines (like combined harvesters and rice cutters) for harvesting impossible and has the potential to damage the plants during weeding and application of chemicals to enhance pest management.

3.4.2 Pest management control

Infestation is a problem that affects yield and increases pre harvest loss. It is the responsibility of the Crop Protection Unit of MAFFS to educate and provide guidelines to farmers' on pest management. This includes education on traditional methods; such as brushing, weeding, fencing and bird scaring. Farmers are also encouraged to use chemicals like properlene, diazinol, cholopyrifus, green muscles, etc.