



REPUBLIC OF ZAMBIA

REPORT

OF THE

**COMMITTEE ON AGRICULTURE, LANDS AND NATURAL RESOURCES ON THE
REPORT OF THE AUDITOR GENERAL ON GOVERNMENT MEASURES TO
ADDRESS THE IMPACT OF CLIMATE CHANGE ON FOOD SECURITY IN
ZAMBIA: A FOCUS ON MAIN CROPS**

FOR THE

FIRST SESSION OF THE THIRTEENTH NATIONAL ASSEMBLY

Published by the National Assembly of Zambia

REPORT

OF THE

**COMMITTEE ON AGRICULTURE, LANDS AND NATURAL RESOURCES ON THE
REPORT OF THE AUDITOR GENERAL ON GOVERNMENT MEASURES TO
ADDRESS THE IMPACT OF CLIMATE CHANGE ON FOOD SECURITY IN
ZAMBIA: A FOCUS ON MAIN CROPS**

FOR THE

FOR THE FIRST SESSION OF THE THIRTEENTH NATIONAL ASSEMBLY

ITEM	PAGE NO
1. Composition of the Committee	1
2. Functions of the Committee	1
3. Meetings of the Committee	1
4. Procedure Adopted by the Committee	1
5. Auditor General's Comments	1
6. Consideration of Submissions on the Audit Findings and Observations	5
7. Conclusion	18
8. Appendix I – List of Officials	20
9. Appendix II – List of Witnesses	21

REPORT OF THE COMMITTEE ON AGRICULTURE, LANDS AND NATURAL RESOURCES ON THE REPORT OF THE AUDITOR GENERAL ON GOVERNMENT MEASURES TO ADDRESS THE IMPACT OF CLIMATE CHANGE ON FOOD SECURITY IN ZAMBIA: A FOCUS ON MAIN CROPS, FOR THE FIRST SESSION OF THE THIRTEENTH NATIONAL ASSEMBLY

1. Membership of the Committee

The Committee consisted of Mr Kasauta Saiti Michelo, MP, (Chairperson); Mrs Maureen Mabonga, MP, (Vice Chairperson); Mr Mayungo Simushi, MP; Mr Yotam Mtayachalo, MP; Mr Mweemba Malambo, MP; Mr Machila Jamba, MP; Mr Nickson Chilangwa, MP; Mr Ronald Kaoma Chitotela, MP; Dr Kabwe Taulo Chewe, MP; and Mr Andrew Tayengwa, MP.

The Honourable Madam Speaker
National Assembly
Parliament Buildings
LUSAKA

Madam

The Committee has the honour to present its Report on the Report of the Auditor General on Measures to Address the Impact of Climate Change on Food Security in Zambia: A Focus on Main Crops for the First Session of the Thirteenth National Assembly.

2.0 Functions of the Committee

The functions of the Committee are set out in Standing Orders No. 197 (a) and 198 of the National Assembly of Zambia Standing Orders, 2021.

3.0 Meetings of the Committee

The Committee held ten meetings to consider submissions on the Report of the Auditor General on Government Measures to address the Impact of Climate Change on Food Security in Zambia: A Focus on Main Crops.

4.0 Procedure adopted by the Committee

In order to better appreciate the issues raised in the Report, the Committee requested both written and oral submissions from various relevant stakeholders. The list of stakeholders who made submissions before the Committee is attached at Appendix I.

5.0 Auditor General's Comments

The Auditor General reported that the Performance Audit Report on Government Measures to Address the Impact of Climate Change on Food Security in Zambia: A focus on Main Crops, was conducted in accordance with the provisions of *Article 250 of the Constitution of Zambia (Amendment) Act, No. 2 of 2016*.

5.1 Background to the Audit

The Committee was informed that the performance audit was a case study entitled “Government Measures to Address the Impact of Climate Change on Food Security with a Focus on Main Crops”. The Committee was informed that climate change was real and showed no signs of abating, and was expected to bring about long term effects in the agriculture sector. To this effect, climate change had become a major threat to sustainable development in Zambia and was particularly a difficult change for people in the rural areas who had low adapting capacities. The Committee was informed that the report was aimed at assessing and highlighting the measures that the Government had put in place to address the impacts of climate change on food security.

5.2 Motivation of the Audit on Government Measures to Address the Impact of Climate Change on Food Security in Zambia with a Focus on Main Crops

- (i) The Auditor General stated that the audit was motivated by the fact that Zambia had not been spared from the effects of climate change. The Committee was informed that there had been an increase in the frequency and severity of droughts during 2017 and 2018. There were also occasional dry spells, and increased temperatures in valleys, flash floods in 2019 and 2020 period. The Committee was also informed that the 2020 and 2021 periods resulted in changes in rain season pattern which led to changes in crop growing season.
- (ii) Public reports such as the Auditor General’s Report on Government Measures to Address the Impact of Climate Change on Food Security in Zambia, reported that the Government had recognised the risks that climate change posed to national food security and had put in place the following interventions listed hereunder.
 - a. Diversified and export-oriented Agriculture Sector.
 - b. Mainstreamed climate change mitigation and adaptive measures.
 - c. Promote the adoption of agricultural environment-friendly practices, by use of climate smart and organic techniques.
 - d. Creating public awareness on the adverse effects of climate change.
- (iii) The Committee was also informed that in his address on the “Progress made in the application of National Values and Principles, the President of the Republic of Zambia underscored the importance of mitigating the effects of climate change. The President also emphasised the importance of supporting agricultural research in order to develop resilient seed varieties and conservation agriculture, particularly in drought prone areas of the country. The President bemoaned the impact of climate change on food security and indicated that Gross Domestic Product (GDP) growth had over the last decade reduced from over 6.4 per cent to around 3.5 per cent.
- (iv) The President also stated that in order to address the effects of climate change and increase food security to ensure sustainable development, the Government would promote interventions such as afforestation and reforestation, conservation farming and promotion of green energy.

5.3 Audit Objective

The overall objective of the audit was to assess whether the measures developed to adapt to climate change were effective in ensuring that Zambia was food secure.

5.4 Specific Objectives

- (i) To determine the extent of adaptation programmes and strategies that the Government has put in place to address climate change effects that have an impact on food security.
- (ii) To ascertain how key stakeholders coordinate to ensure that the nation is food secure inspite of the difficult conditions brought on by climate change.

5.5 Audit Scope Coverage

The Committee was informed that the audit period was from 2016 to 2020. The target institutions that were engaged are listed hereunder.

- (i) Ministry of Agriculture.
- (ii) Ministry of Finance and National Planning.
- (iii) Ministry of Land and Natural Resources.
- (iv) Zambia Metrological Department.
- (v) Zambia Statistical Agency.
- (vi) Disaster Management and Mitigation Unit.
- (vii) Zambia Climate Change Network.
- (viii) National Food and Nutrition Commission.
- (ix) Indaba for Agriculture Policy Research Institute.
- (x) Department of Climate Change and Natural Resources.
- (xi) Water Resources Management Authority.
- (xii) Conservation Farming Unit.
- (xiii) Worldwide Fund.
- (xiv) Food and Agriculture Organisation.
- (xv) Cooperating Partners.

5.6 Audit Questions

Based on the audit objectives, the audit was designed to answer the questions outlined below.

(T) What extent is the Ministry of Agriculture implementing effective measures that address climate change and its impact on food security?

- (i) How has climate change been mainstreamed into the Agricultural sector in order to address food security?
- (ii) Has the Government devised effective Early Warning Systems (EWS) that ensure relevant and accurate data on climatic and other conditions that may affect food security, captured and disseminated in time for decision-making?
- (iii) What mechanisms exist to ensure that accurate metrological data is made available by the Ministry of Agriculture to farmers in good time in order for the farmers to plan ahead and avert possible crop losses especially in areas that are most prone to the effects of climate change?
- (iv) To what extent do farmers adopt and implement adaptation technologies in order to achieve food security?

- (v) To what extent are extension services by the Ministry capacitated to effectively deliver adaptive technologies to farmers?
 - (vi) Are farmers sensitised on the need and importance of increasing their food security status by adapting to the effects of climate change?
 - (vii) Are farmers aware of crop insurance and benefiting from it?
 - (viii) To what extent has Government promoted adaptive research on climate change in the context of food security?
 - (ix) Has the Ministry, in conjunction with other stakeholders, redefined the Agro Ecological Regions (AERs) in order to ensure crop suitability per agro ecological region?
 - (x) What monitoring mechanisms have the Ministry devised and are they working as they should be?
- (II) How does the Ministry coordinate with stakeholders who are conducting activities related to climate change and food security?**
- (i) To what extent is the regulatory framework for climate change adequate with regards to coordination?
 - (ii) To what extent are actors coordinating effectively to ensure that there are no duplication of roles?
 - (iii) How are departments within the Ministry of Agriculture coordinating within the Ministry to ensure effective implementation of adaptation strategies?
 - (iv) What mechanisms has the Government put in place to ensure there is coordination among stakeholders to ensure effective implementation of climate change activities in the agriculture sector?

5.7 Sources of Assessment Criteria

The Committee was informed that the assessment was drawn from the following sources:

- (i) The Seventh National Development Plan;
- (ii) The 2018 and 2019 National Budget Speech;
- (iii) The Second National Agriculture Policy 2016 -2020;
- (iv) The Strategic Plan 2016-2020;
- (v) National Agricultural Extension and Advisory Services Strategy;
- (vi) The Second National Agricultural Policy – Implementation Plan 2016-2029; and
- (vii) The National Agricultural Investment Plan.

5.8 Methodology

In gathering audit evidence, the following auditing techniques were used:

1. Research Design

The study utilised a case study research design, adopting a mixed method that was inclusive of qualitative and quantitative approaches. The two approaches were used because of their relevance to the study as they provided a basis for data analysis by comparing interpretations in the audit. Whilst the research was designed to be qualitative and quantitative in nature, it also adopted a descriptive approach so as to simplify data interpretation.

5.9 Audit Sampling

The audit used a five-tiered sampling method which included, the Ministry headquarters, all Provincial and District Agriculture Offices.

Purposive sampling of thirteen out of the 116 districts in Zambia was done. The thirteen districts considered for sampling had represented critical districts that had experienced the hardest effects of climate change. Two out of the three Agro Ecological Regions (AER) were selected to be part of the sample frame. The two regions being AER I and II were selected on the basis that they reflected the most vulnerable regions in terms of food security, because they generally experienced low rainfall patterns. In addition, the regions had the lowest adaptive capacities.

Furthermore, the audit sample comprised parts of Southern and Western provinces which were falling under AER I and II respectively. Of the thirteen districts which were purposively sampled, eleven districts namely, Mongu, Senanga, Sesheke, Kazungula, Choma, Monze, Mazabuka, Kafue, Namwala, Lusaka and Chongwe fell between AER I and II while two districts namely Itezhi Itezhi and Mumbwa fell in AER II. The districts were also selected based on the presence of Pilot Programme for Climate Resilience projects (PPCR). Agricultural camps within the PPCR project areas were then purposively selected in Western Province while the Agricultural camps in Southern Province were selected at random.

A total of eighteen camps out of 1,745 agricultural camps were selected, and twenty two PPCR projects were visited, where a total of fifty seven farmers were sampled. Farmers under both the PPCR projects and agricultural camps were selected at random based on availability of farmers at the time of field inspection. The selected farmers were drawn from within agricultural camps.

6.0 CONSIDERATION OF SUBMISSIONS ON THE AUDIT FINDINGS AND OBSERVATIONS

The Committee considered submissions from the identified stakeholders and the Permanent Secretaries of the Ministry of Finance and National Planning, Ministry of Agriculture, Ministry of Green Economy and Environment and Ministry of Land and Natural Resources. The submissions of these stakeholders and the Permanent Secretaries, as well as the observations and recommendations made by the Committee are set out below.

6.1 MAJOR FINDINGS

(a) MAINSTREAMING OF CLIMATE CHANGE IN PLANS

AUDIT FINDING

The findings of the Auditor General's Report on mainstreaming of climate change were that the Ministry of Agriculture had integrated climate change adaptation measures in their plans and programmes, however the audit established that a number of programmes budgeted for to enhance mainstreaming were partially implemented. In addition, there was low prioritisation of activities related to mainstreaming by the Ministry of Agriculture.

Stakeholders' Submissions

Stakeholders who appeared before the Committee agreed with the Auditor General's report that the Ministry of Agriculture did not prioritise activities related to climate change mainstreaming in their implementation programmes. Stakeholders stated that there was need for effective implementation of programmed activities to ensure the attainment of food security.

Some stakeholders who appeared before the Committee stated that the Zambian Government through its National Policy on Climate Change had started to mainstream adaptation and mitigation measures across all policy and programme interventions, in order to re-build the resilience of the economy.

Stakeholders further stated that the Ministry of Agriculture had integrated climate change adaptation measures in their plans and programmes; however, there was low prioritisation of activities related to mainstreaming. As a result, programmes which were budgeted for to enhance mainstreaming were partially implemented.

Other stakeholders who appeared before the Committee submitted that in order for mainstreaming of climate change related adaptation measures and plans to be implemented effectively, and for measures to translate into positive results, the following measures should be considered:

- (i) Agriculture Extension Services Staff should be trained and sensitised on climate change plans and measures as they were a point of interface between planning and actual implementation in the Ministry of Agriculture;
- (ii) there was need for change in the way of doing things such as training on the usage of time and other resources, considering that climate change was a new phenomenon; and
- (iii) there was need to revive the agriculture field days where new proposed measures would be taught and demonstrated.

Some stakeholders submitted that the Zambia Meteorological Department was working with the agricultural sector, under the Strengthening Climate Resilience of Agricultural Livelihoods in Agro-Ecological Regions I and II in Zambia (SCRALA) Project and the Transforming Landscapes for Resilient Development (TRALARD) Project, to enhance weather and climate services through the following measures listed hereunder.

- (i) Undertaking a weather and climate information needs assessment for smallholder farmers.

- (ii) Carrying out a social economic benefit study of hydro-meteorological services.
- (iii) Implementing a national framework for weather and climate services to strengthen co-
- (iv) digitising all climate paper records to make them available for modelling and other applications to strengthen agriculture productivity and food security.

(b) EARLY WARNING

AUDIT FINDING

The findings of the Auditor General's Report on early warning were that the Government would ensure adaptation to climate change through enhancement of early warning systems and increased capacity to interpret climate change information. The audit further recognised the strides that had been made by Zambia Meteorological Department to make early warning information available to all stakeholders timely.

It was however established that the early warning system for the agriculture sector in the country was not effective and was not operating at full capacity. The meteorological department's observation network (both atmosphere and surface) was limited in its capacity to produce accurate information. There were only forty-one (41) manual stations and one hundred and seven (107) automatic stations in selected districts. It was further observed that the weather stations were not evenly spread across the country. In addition, in areas where automatic weather stations were installed, vandalism was said to have been rampant due to lack of security around the installations.

Stakeholders' Submissions

Stakeholders agreed with the Auditor General's report that the early warning system for the agriculture sector in the country was not effective and neither was it operating at full capacity, since some districts in the country did not have a weather station. Stakeholders further stated that the Meteorological Department's observation network of both atmosphere and surface was limited in its capacity to produce accurate information. In this regard, the stakeholders submitted that the Early Warning Unit at the Ministry of Agriculture working closely with the Zambia Meteorological Department should ensure that accurate and timely warning information was disseminated to the farmers.

Some stakeholders who appeared before the Committee submitted that as a way of addressing the concern of poor collaboration in the generation and provision of climate services and early warning information, the Zambia Meteorological Department had been undertaking the following measures listed hereunder.

- (i) Enhancing the dissemination and packaging of weather and climate information by working with community radio stations across the country. This had enabled the repackaging and translation of weather and climate information into local languages through community radio stations.
- (ii) Establishing information dissemination platforms on social media. The Department had also established a studio for audio and video productions to enable packaging of information for dissemination on different channels.

- (iii) Co-production of the Agro-meteorological Bulletins which were aimed at providing weather, climate and agriculture advisories to guide farmers during the farming seasons.
- (iv) Conducting training of agriculture extension officers in selected districts to enhance the understanding of climate information and how to repackage such information for smallholder farmers and local communities.

(c) PEST MANAGEMENT SYSTEM

AUDIT FINDING

Interviews with provincial and district office staff in Western and Southern provinces revealed that all districts experienced frequent pest attacks on their crops. All the fifty seven farmers interviewed stated also that they had continuous pest invasion in the 2017/2018 and the 2018/2019 farming seasons owing to high recorded temperatures the main prevalent pests alluded to were stalk bora and the Fall Army Worm.

In Luapula province, the fall army worm was the prevalent pest in 165 out of 199 camps. All eleven districts of the province were affected by the FAW in the 2017/2018 farming season. The infestation coverage was between 15-70 per cent in 2016/2017 and 30.4 per cent in 2017/2018 farming seasons.

Submissions by Stakeholders

Stakeholders submitted that most districts in the country were prone to frequent pest attacks on crops. In this regard, the farmers interviewed stated that they had experienced continuous pest invasions in the 2017/2018 and the 2018/2019 farming seasons, and this was attributed to high temperatures which were recorded during the period. An interview with staff at the Ministry of Agriculture stated that there was no integrated pest management system which was operated by the Ministry during the period under review. Further, there was no effective early warning/forecasting system for pests. Those interviewed stated that the absence of an integrated pest management system had negatively affected the ability of farmers to plan for pest invasions. Stakeholders further stated that pests such as “fall army worms” including locusts had continued to re-occur more frequently in the country than before. In this regard, stakeholders submitted that there was need to strengthen the country’s early warning systems beyond rainfall patterns. This would require strategies and new knowledge to effectively deal with possible outbreaks.

(d) ADOPTION OF CONSERVATION AGRICULTURE

AUDIT FINDING

The findings were that the Government was committed to promoting conservation agriculture in the seventh National Development Plan (7NDP). One of the Government’s strategy to mainstream climate change in the agriculture sector was by integrating climate change adaption measures in plans and programmes, promote and strengthen production methods that are resilient to climate change, environmentally friendly and the introduction of climate smart farming systems.

The Government reiterated its commitment to the promotion of climate smart agriculture technologies practices such as conservation agriculture in order to improve productivity and mitigate crop failure under rain fed cropping which small scale farmers were accustomed to.

Research had shown that despite the numerous benefits that conservation agriculture had, the adoption of the practice was still low in the country with most people using conventional farming methods.

Submissions by Stakeholders

Stakeholders submitted that there was low adoption of conservation agriculture despite the Government having promoted it for over two decades. Stakeholders stated that the low adoption of conservation agriculture was as a result of conflicting information on the programme, duplication of target and operational areas by the providers of conservation agriculture. Stakeholders further stated that there was inadequate planning for the activities, and the farmers' capacity to adopt conservation agriculture was very limited.

(e) CROP DIVERSIFICATION

AUDIT FINDING

The audit established that the Ministry of Agriculture had not achieved the desired level of diversification as most of the land remained typically mono-cropped with maize dominating agricultural production.

Submissions by Stakeholders

Stakeholders who appeared before the Committee, agreed with the Auditor General's report that crop diversification had remained low over the years. In this regard, stakeholders stated that maize had continued to account for more than 40 per cent of the total recorded crop output.

Stakeholders who appeared before the Committee stated that the Ministry of Agriculture had not achieved the desired levels of diversification as maize had remained as the top dominating agricultural production mono-crop. Stakeholders stated that some of the reasons attributed to low crop diversification included inadequate targeting of input subsidy programmes, poor functioning markets and transport facilities, limited land size and security, and low irrigation development.

Stakeholders submitted that the challenges to the adoption of other crops or agricultural activities was market uncertainty. Maize was attractive to farmers as it received continuous Government support in terms of inputs, price and market.

(f) RESEARCH PRIORITIES

AUDIT FINDING

The lack of prioritisation for research activities by the Government resulted in Zambia Agriculture Research Institute (ZARI) not developing appropriate technologies to ensure adaptation to climate change and thereby contribute to sustainable and increased crop production and productivity.

Submissions by Stakeholders

Stakeholders submitted that the Government had not prioritised research going by the limited funds allocated for research in the agriculture sector. In this regard, stakeholders stated that the ten research stations were allocated between 13 per cent and 33 per cent of the respective approved budgets. Stakeholders further stated that funding for research stations had reduced

progressively over the years from K13, 674,645 in 2016 to K9, 249,530 in 2018, representing 32 per cent reduction, and K415, 000 was allocated in the year 2019, representing a further reduction of over 97 per cent. Stakeholders however submitted that there was an improvement in the funding to the Zambia Agriculture Research Institute (ZARI) amounting to 72 per cent of the budgeted figure in 2020.

(g) CLIMATE CHANGE LEGISLATION

AUDIT FINDING

The findings of the Auditor General's Report were that there was no legislative framework to support the implementation of climate change.

Submissions by Stakeholders

Stakeholders who appeared before the Committee stated that there was no legislation in Zambia to support the National Policy on Climate Change and this had led to difficulties in the coordination of climate changes activities. Stakeholders, however, stated that there was progress and development worth noting that had taken place in coming up with the Climate Change Bill which was still in the process of consultations. In this regard, stakeholder consultation on the Bill had been completed and the Bill was at the Ministry of Justice for drafting. Upon completion of drafting of the Bill by the Ministry of Justice, Cabinet would deliberate on it before sending it to Parliament.

(h) INSTITUTIONAL COORDINATION AMONG ACTORS

AUDIT FINDING

The Auditor General's Report revealed that there was no coordination in the implementation of climate change programmes among the actors and institutions.

Submissions by Stakeholders

The Committee was informed that there was limited financing for irrigation development. Accordingly, despite the Government committing K1.2 billion as counterpart funding towards irrigation development between 2015 and 2018, only about K241 million or 20 per cent was released. This left a gap of 80 per cent in counterpart funding unrealised. In this regard, stakeholders who appeared before the Committee made the following recommendations listed hereunder.

- (i) Increase budgetary allocations to irrigation development as a key component for building resilience to climate change.
- (ii) Ensure timely disbursement of allocated funds to support irrigation development.
- (iii) Create a well-managed Irrigation Development Fund (IDF) to support irrigation development.
- (iv) Create financing lines in commercial banks dedicated to support investments in irrigation.

6.2 SUBMISSION BY THE PERMANENT SECRETARY, MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

In noting the finding and recommendation by the Auditor General, the Permanent Secretary submitted on the following:

Mainstreaming of Climate Change in the Implementation Plans

The Permanent Secretary submitted that the mainstreaming of climate change into development processes in the agriculture sector was being undertaken at all levels of governance. He stated that in collaboration with the Ministry of Finance and National Planning, the Ministry of Green Economy and Environment had mainstreamed climate change into the Eighth National Development Plan (8NDP). Additionally, the Ministry was working with key sectors among them included the agriculture sector, to ensure mainstreaming of climate change into sectoral plans, policies and strategies.

The Ministry was also developing sector specific guidelines for the agriculture, forestry and energy sectors in order to guide the different stakeholders in these sectors on the step-by-step process of mainstreaming climate change into their plans. Further, in collaboration with the Ministry of Local Government and Rural Development; and provincial administrations, the Ministry was building the capacity of provincial administrators and local authorities for identification of local climate risks and vulnerabilities, to ease the mainstreaming process of climate change into provincial development plans, as well as district integrated development plans. Accordingly, it was envisaged that this would enhance the adaptive capacity of communities especially farming communities, to enable them to build their resilience to the adverse impact of climate change. While this was being implemented, the Permanent Secretary acknowledged that a lot still needed to be done to ensure that mainstreaming of climate change was effectively carried out at all levels to ensure adaptation to climate change.

Low Awareness on Climate Change

The Permanent Secretary acknowledged that climate change was real and adverse, hence the need to ensure that citizens were abreast with information on climate change, its effects on food security, methods of mitigation and adaptation in order to enhance food security and incomes of households, particularly those who lived in rural areas. In this regard, he stated that the Ministry had in May 2022, launched the National Climate Change Communication and Advocacy Strategy (NCCCAS), which would provide a coordinated framework on communication on climate change across all sectors and at all Government levels. It was envisaged that when the NCCCAS was fully implemented, it would increase awareness, knowledge and appreciation of climate change, and this would enhance the understanding and attitude change among members of the public and targeted stakeholders across the country. The Committee was also informed that as one of the measures of communicating climate change messages to communities, the Ministry had conducted community radio programmes where various adaptation measures were disseminated. Additionally, the Ministry had produced and translated key climate change messages in the seven main local languages, which was aimed at raising awareness on climate change.

Unavailability of Legislation to support the National Policy on Climate Change

The Permanent secretary informed the Committee that in 2019, the Ministry in collaboration with the Ministry of Justice and various other stakeholders had embarked on the formulation of legislation on climate change which required to support the National Policy on Climate Change

of 2016. The process of formulation of this legislation was very consultative and had created a platform for all stakeholders from national to the sub-national levels.

Duplication of Roles between the Ministry of National Development Planning and the Ministry of Lands and Natural Resources

The Permanent Secretary agreed with the finding in the Auditor General's report that there were duplications in the mandates of the Ministry of Lands and Natural Resources and the then Ministry of National Development Planning with regard to the execution of climate change interventions. However, the creation of the Ministry of Green Economy and Environment had addressed the duplicity concerns and it would superintend over all matters in the environmental sector. This would ensure that there was coordination in climate change implementation programmes.

Inadequate Meteorological Observation Infrastructure to provide Weather and Climate Services

The Permanent Secretary stated that there were challenges with regard to meteorological observation infrastructure and this had hampered the effective provision of early warning information in the country. To address the inadequate meteorological observation network, the Government had expanded and modernised meteorological observation infrastructure by installing 130 Automated Weather Stations, forty two manual stations and about 400 Rainfall Stations across the country since 2017. This was in the quest to improve weather and climate data collection. This had further strengthened the provision of weather and climate services. Further, the Government was in the process of procuring 120 Automatic Weather Stations and 300 rainfall stations in the year 2022, and these would be installed in all the districts and agriculture camps.

The Permanent Secretary further informed the Committee that although there were improvements made in the creation of weather and climate infrastructure, there was still need for more equipment to be procured and set up in all areas where such facilities were not yet in place. In this regard, the Permanent Secretary recommended that weather stations should be set up in every agriculture camp in order to enhance effective understanding of climate change and its impacts at the local community level. This would also enable the generation of more accurate localised weather forecasts, pest and disease forecasts, as well as support water resource management. Additionally, the weather and climate observation network needed to be strengthened by inclusion of ten upper air observation stations, a network of weather radars and a network of lightning detection sensors in order to improve and provide adequate and usable information to provide the community with early warning services.

6.3 SUBMISSION BY THE PERMANENT SECRETARY, MINISTRY OF LANDS AND NATURAL RESOURCES

In response to the findings and recommendations by the Auditor General, the Permanent Secretary submitted on the following:

Mainstreaming of Climate Change in the Implementation Plans

The Permanent Secretary informed the Committee that the Ministry of Agriculture needed to be supported with adequate funding in order to implement all the budgeted for climate change programmes and activities.

Capacity of the Early Warning System

The Permanent Secretary informed the Committee that the Ministry of Green Economy and Environment should be adequately funded in order for it to increase the number of automated and manual weather stations. This would ensure access to timely information for many farmers in order for them to make informed decisions. In the same vein, the Committee was informed that the Ministry of Agriculture needed to increase the number of staff at camp, district and provincial levels for their early warning unit to be able to reach to many farmers.

In the quest to protect weather station equipment, the Committee heard that there was need to sensitise local communities and farmers on the negative effects of vandalising automated weather stations.

The Permanent Secretary also recommended for more funding to the Ministry of Agriculture in order for it to recruit more camp officers who should be equipped with mobile phone technology and data connectivity to disseminate early warning information to farmers. These camp officers should also be provided with enough motorbikes and fuel to reach far flung places.

Pest Management

The Permanent Secretary agreed with the auditor's findings in the report that there was no pest integrated management system operated by the Ministry of Agriculture and that although there was an early warning unit at the Ministry, there was no effective early warning forecasting system for pests. Further it was revealed in the audit report that the Ministry did not respond timely to reports of pest invasions as evidenced by late receipt of pesticides. In this regard, the Permanent Secretary stated that the Ministry of Agriculture should be supported financially to put in place an integrated pest management system with a clear early warning forecasting system. The system should have a dedicated and competent workforce with a clear monitoring and evaluation system at district and provincial levels in order to respond effectively to pest invasions.

Crop Diversification

The Permanent Secretary agreed with the findings in the report of the Auditor General and stated that the Farmer Input Support Programme (FISP) should be reformed in its scope and administration to promote a variety of crops other than just maize. In this regard, the Committee heard that the Ministry of Agriculture in collaboration with other institutions should facilitate markets for crops other than maize, in order to incentivise farmers to diversify their crops and to help them access affordable irrigation facilities.

Climate Change

The Permanent Secretary informed the Committee that the Ministry of Agriculture should put in place a coordinating mechanism to address climate change. This coordinating mechanism should fit in the overall climate change coordinating mechanism at country level. Further, there should be enhanced information sharing between the Disaster Management and Mitigation Unit (DMMU), Zambia Meteorological Department and Water Resource Management Authority (WARMA) on climate change, in order to foster effective climate risk and preparedness decision making.

6.4 SUBMISSION BY THE PERMANENT SECRETARY, MINISTRY OF AGRICULTURE

Prioritisation of Climate Change

The Permanent Secretary informed the Committee that the low budget releases had affected programme implementation, particularly the support to key areas of agriculture development. However, the Ministry was working towards identifying other areas of agriculture support through the involvement of the private sector as key stakeholders in agriculture development.

Conservation Agriculture

The permanent Secretary informed the Committee that prioritisation of farmer training in Conservation Agriculture (CA) and prioritisation of funds towards climate smart agriculture technologies had helped to improve timelines and the rate of delivery of CA activities in order to improve food security.

Pest Management

The Permanent Secretary informed the Committee that the Ministry took note of the need to offer timely responses to disease outbreaks. To this effect, the Ministry had continued to strengthen the Pest Management Systems through provision of pesticides for the management of migratory pests namely fall army worms and locusts.

The Ministry would, therefore, continue to sensitise farmers on pest management and on safe handling on chemicals to reduce environmental pollution and human poisoning. The Ministry had also spearheaded the formation of early warning groups that would help to monitor and report on populations of migratory pests in other areas. These communities had been equipped with mobile phones for easy and rapid communication.

The Permanent Secretary further informed the Committee that, the Ministry of Agriculture had been collaborating with the International Red Locusts Control Organization for Central Africa (IRLCO-CSA) to monitor locust outbreaks in order to mitigate pest outbreaks.

Strengthening of the Early Warning Unit and Systems

The Permanent Secretary informed the Committee that the Ministry had taken note of the need to strengthen the Early Warning Unit in the Ministry of Agriculture and early warning systems for effective dissemination of information including crop disease, floods and low rainfall alerts to farmers in conjunction with Zambia Meteorological Department (ZMD). This enabled farmers to plan ahead and prevent crop losses.

The Committee was informed that the Ministry was taking steps to strengthen the collection of agricultural statistics and climate information in collaboration with the Zambia Meteorological Department.

Conflict on Conservation Agriculture

The Permanent Secretary informed the Committee that in order to reduce the problem of conflict of information on conservation agriculture, the Ministry of Agriculture had revised its Agricultural Extension Strategy. This was done in order to facilitate the harmonisation of extension messages and activities for all players at both national and district levels.

The adoption of conservation packages such as reduced tillage, crop rotation with legume and permanent soil cover amongst farmers was low, mainly because many farmers were used to the

use of ripping and growing trees that increased soil fertility. This was common in Eastern Province.

Crop Diversification

The Permanent Secretary informed the Committee that the Ministry had been implementing measures aimed at crop diversification such as the distribution of legumes and groundnuts under the Farmer Input Support Programme. However, the quest for crop diversification had been affected by lack of functional output and input markets especially in the rural areas.

The Committee was informed that the Ministry was also finalising the Crop Diversification Strategy to increase the production and marketing of various crops other than maize. For example, the Ministry was actively engaging farmers on the production of avocado for export.

6.5 SUBMISSION BY THE PERMANENT SECRETARY, MINISTRY OF FINANCE AND NATIONAL PLANNING

Mainstreaming of Climate Change in the Implementation Plans

The Permanent Secretary informed the Committee that the Ministry of Finance and National Planning had taken note of the observation in the Auditor General's report and would prioritise allocation of resources towards climate change mitigation and adaptation interventions. The Ministry of Finance and National Planning would work with the Ministry of Agriculture to enhance mainstreaming activities related to climate change in the agricultural sector and ensure food security.

Absence of Climate Change Legislation

The Permanent Secretary informed the Committee that the Government was working on a Climate Change Bill, and once enacted; the law would ensure the availability of a regulatory framework for enhanced response to climate change and mechanisms to achieve climate change resilient development. This would include integration of climate change adaptation and mitigation measures in agricultural programmes.

Limited Meteorological Equipment

The Permanent Secretary informed the Committee that the Ministry of Finance and National Planning in collaboration with the line ministries would endeavour to increase the budget allocation towards meteorological equipment in order to address the challenge of limited meteorological equipment.

Poor Crop Diversification

The Permanent Secretary informed the Committee that as part of the transformation agenda, the Government had identified agriculture as a key enabler of growth. He stated that part of the strategies to enhance diversification included opening up export markets for various crops and supporting food processing value addition. The Ministry of Finance and National Planning was working with the Ministry of Agriculture to come up with a new agriculture programme which would include aspects of input distribution, irrigation mechanism, farm block development, market access, enhanced extension services, agriculture finance and credit, and agriculture research. This programme was expected to move away from FISP that was maize based.

Lack of Prioritisation of Agricultural Research

The Permanent Secretary informed the Committee that the Government had proposed to transform agriculture in the Eighth National Development Plan. Among the programmes that would address the issues raised included the following listed hereunder.

- (i) Agriculture Mechanisation.
- (ii) Enhanced Farmer Support.
- (iii) Agribusiness Development.
- (iv) Irrigation Development.
- (v) Research and Development.
- (vi) Extension Service Support.

6.6 COMMITTEE'S OBSERVATIONS AND RECOMMENDATIONS

1. Mainstreaming of Climate Change in the Implementation Plans

Committee's Observations and Recommendations

The Committee recommends that the Government through the Ministry of Agriculture should demonstrate commitment to its plans by prioritising support to activities that are intended to increase food security in the country. The Committee further urges the Ministry of Agriculture to prioritise activities that will ensure smooth mainstreaming of climate change, these include the implementation of sustainable and climate smart agriculture techniques that guarantee food security.

The Committee observes that although there has been great improvements in meteorological services, more needs to be done to ensure that a weather station was set up in every agriculture camp. This will create an understanding of climate change issues and its impact at the local community level. This will also enhance the generation of more accurate localised weather forecasts, pest and disease forecasts as well as support water resource management.

2. Early Warning

Committee's Observations and Recommendations

The Committee recommends that the Government should develop and deploy digital early warning systems as these will increase the effectiveness of early warning information dissemination.

The Committee further recommends that the Early Warning Unit at the Ministry of Agriculture in conjunction with Meteorological Department should be active in providing and disseminating various parameters of early warning information on crop disease, flood and drought alerts to farmers in order for them to plan ahead and avert crop losses.

Further, the Committee recommends that the Ministry of Agriculture should be provided with sufficient funds to recruit more camp officers and equip them with mobile phone technology and data connectivity to enable them disseminate early warning information to farmers. These camp officers should also be provided with motorbikes and fuel for easy mobility.

3. Pest Management System

Committee's Observations and Recommendations

The Committee recommends that the Government should develop a comprehensive integrated pest management system that will allow effective control of various pests and diseases. This should also be supported by an effective early warning system for efficient pest and disease control.

The Committee further recommends that the Ministry of Agriculture should be adequately funded to put in place an integrated pest management system with an early warning system. This system should be manned by a dedicated and competent workforce with a clear monitoring and evaluation system at district and provincial level. This will ensure effective warning and preparation for pest invasions.

4. Adoption of Conservation Agriculture

Committee's Observations and Recommendations

The Committee recommends for the following:

1. The Government should consider promoting agro-ecology rather than the use of chemical fertilizers which have been proved to weaken the soil fertility. The Committee is of the view that agro-ecology is the best practice to address climate change.
2. The Government and the private sector should consider creating insurance products that are compatible with and affordable to smallholder farmers. In this regard, products such as rainfall-index and area yield insurance should be promoted among smallholder farmers in order to provide guaranteed pay-out in the event of yield loss due to bad weather.
3. Climate Smart Agriculture practices should be incorporated in crop, livestock and fish farming. Manure and integrated soil fertility management, pasture and forage management, fodder production, improved livestock housing and manure application should be promoted.

5. Crop Diversification

Committee's Observations and Recommendations

The Committee recommends that the Government should deliberately put in place measures, to promote other crops in order to enhance crop diversification.

The Committee also recommends that the FISP should be reformed in its scope and administration to promote a variety of crops other than just maize. In this regard, the Committee is of the view that the Ministry of Agriculture in collaboration with other institutions should facilitate markets for crops other than maize. This would incentivize and motivate farmers to diversify to other crops.

6. Research Priorities

Committee's Observations and Recommendations

The Committee recommends that the Government should allocate sufficient funds for research, to promote the development of innovations and technologies such as drought climate stress

tolerant seed varieties suitable for different regions. This will contribute to more productive and sustainable agricultural practices.

The Committee further recommends that the Government and other key stakeholders should enhance interaction and collaboration between research and extension departments for more effective diffusion of technologies from research to extension and ultimately to the farmers.

7. Climate Change Legislation

Committee's Observations and Recommendations

The Committee observes with great concern that there is no climate change legislation to support the implementation of the climate change policy. The report also highlights the fact that although there is an institutional framework for climate change coordination at country level, the Ministry of Agriculture has no deliberate coordination mechanism to address climate change. The Committee therefore recommends that a legal frame work on Climate Change should be put in place.

(i) Institutional Coordination between Actors

Committee's Observations and Recommendations

The Committee recommends that the Ministry of Agriculture should put in place a coordinating mechanism in the Ministry to address climate change. This coordinating mechanism should fit in the overall climate change coordinating mechanism at country level. Further, the Committee recommends that there should be enhanced information sharing between Disaster Management and Mitigation Unit, Zambia Meteorological Department and Water Resource Management Authority on climate change, in order to foster effective climate risk and preparedness decision making.

8. Irrigation Development:

Committee's Observations and Recommendations

The Committee makes the following recommendations listed hereunder.

- (i) Increase budgetary allocations to irrigation development as a key component for building resilience to climate change.
- (ii) Ensure allocated amounts are disbursed timely to support irrigation development.
- (iii) Create a well-managed Irrigation Development Fund (IDF) to support irrigation development.
- (iv) Financing lines in commercial banks be encouraged to support investments in irrigation.

7.0 Conclusion

The Committee observes that climate change is real and it continues to show no signs of abating. It is, therefore, expected to bring about long term effects in the agriculture sector. Needless to say climate change has become a major threat to sustainable development in the country. It is a great threat to people in rural areas who have low adaption capacities. In this regard, the Committee recommends that the country should adopt smart agriculture practices that embrace

conservation farming, appropriate research development, improved agricultural extension services and enhanced early warning interventions. These interventions will help to bring about improved yields. enhance sustainability against climate change shocks, and improving food security.

Further, the Committee notes that as climate change shocks remain a global issue, it will be necessary for the country to continue to develop mechanisms for local investment in manufacturing and processing of the key input ingredients that go into the production of various crops and livestock. In this regard, the Country will need to enhance crop diversification and promote market access and linkages for smallholder farmers and producers in the agricultural sector.

Lastly, the Committee is grateful to you, Madam Speaker, and to the Clerk of the National Assembly for the guidance and support rendered to it during the consideration of the Report of the Auditor-General on Government Measures to Address the Impact of Climate Change on Food Security. The Committee is also indebted to all the witnesses who appeared before it for their cooperation in providing the necessary memoranda and briefs.



Mr Jamba Machila, MP
CHAIRPERSON

July, 2022
LUSAKA

APPENDIX I - List of National Assembly Officials

Mr F Nabulyato, Acting Principal Clerk of Committees (SC)
Mrs C K Mumba, Acting Deputy Principal Clerk of Committees (SC)
Ms A Banda, Senior Committee Clerk (SC)
Mr E Chilongu, Committee Clerk
Mrs R N Mwinga, Typist
Mr M Chikome, Committee Assistant
Mr D Lupiya, Committee Assistant
Mr M Kantumoya, Parliamentary Messenger

APPENDIX II – List of Witnesses

OFFICE OF THE AUDITOR GENERAL

Mr Francis Mbewe – Deputy Auditor General
Ms A B Sibutu – Principal Auditor
Ms Thandiwe Kapotwe – Senior Auditor
Mr Simon Munyama – Acting Senior Auditor

INDABA AGRICULTURAL POLICY RESEARCH INSTITUTE

Mr Brian Mulenga – Senior Research Fellow
Mr Moses C Tembo – Research Associate

NATIONAL FOOD AND NUTRITION COMMISSION

Mr Freddie Mubanga – Acting Deputy Executive Director

ZAMBIA STATISTICS AGENCY

Mr Patrich Chuni – Assistant Director
Mr Masiyiso Sooka – Principal Statistician
Mr Mulenga Musenga – Interim Statistician General

DISASTER MANAGEMENT AND MITIGATION UNIT

Mr Gabriel Pollen – National Coordinator
Mr Paul Lupunga – Disaster Humanitarian Operations Management
Mr Anderson Banda – Disaster Risk Management

FOOD RESERVE AGENCY

Mr Mwansa Chamatete – Food Reserve & Marketing Manager
Mr Arundel Sakala – Standard & Quality

POLICY MONITORING AND RESEARCH CENTRE (PRMC)

Ms Sydney Mwamba – Executive Director
Mr Kaputo Chiwele – Researcher
Ms Easter Besa - Researcher
Mr Sambo Mwila – Communications
Ms Tino Maramwidze – Researcher

PROGRAMME AGAINST MALNUTRITION

Mr Francis Kasamala – Executive Director
Dr Brivery Siamabele – Technical Advisor
Mr Don Namenda – Finance & Administration Manager
Mr James Mukombwe – Agriculture Food & Nutrition Officer

MINISTRY OF FINANCE AND NATIONAL PLANNING

Mr Mukuli Chikuba – Permanent Secretary
Ms Prudence Kaoma – Director (Monitoring and Evaluation)
Ms Bertha Sinyangwe – Senior Economist
Mr Boyd Lumbwe - Senior Economist
Ms Beenzu Siachifuwe – Budget Analyst

WATER RESOURCES MANAGEMENT AUTHORITY

Mr Chewe Chishala – Director (Water Resources)

Ms Misozi Ngulube – Acting Director General

MINISTRY OF LANDS AND NATURAL RESOURCES

Ms Daphine Chabu – Permanent Secretary

Mr Alan Dauchi – Chief Natural Resource (Management Officer)

Ms Agness Mporokoso- Chief Planner

MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

Mr John Msimuko – Permanent Secretary

Mr Ephraim Shitina – Director

Mr Lewis Mwila – Acting Director (Planning)

Mr Martine Swaswa – Acting Director (Meteorology)

Ms Nancy Soko – Parliamentary Liaison Officer

Ms Chisanga Kasonde – principal Legal Counsel

MINISTRY OF AGRICULTURE

Mr Greens Mbozi – Permanent Secretary

Mr John A Mulongoti – Director (Agri – Business)

Mr Francisco Miti – Director

Mr Ivor Mukuka Director (Zambia Agricultural Research Institute)

Mr Malumo Nawa – Assistant Director

Ms Mildred Miti Kanyenge – Principal Policy Analyst

ZAMBIA AGRICULTURAL RESEARCH INSTITUTE

Mr Ivor Mukuka – Director

Mr Geoffrey Siulemba – Principal Agriculture Research Officer

Mr Rodgers Kabiliti – Chief Agriculture Research Officer