



**REPUBLIC OF ZAMBIA**

**REPORT**

**OF THE**

**COMMITTEE ON AGRICULTURE, LANDS AND NATURAL RESOURCES**

**ON THE REPORT**

**OF THE AUDITOR GENERAL ON THE MANAGEMENT OF  
IRRIGATION SYSTEMS IN ZAMBIA FOR THE PERIOD 2015 TO 2019**

**FOR THE**

**FIFTH SESSION OF THE TWELFTH NATIONAL ASSEMBLY**

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# **REPORT OF THE COMMITTEE ON AGRICULTURE, LANDS AND NATURAL RESOURCES ON THE REPORT OF THE AUDITOR GENERAL ON THE MANAGEMENT OF IRRIGATION SYSTEMS IN ZAMBIA FOR THE PERIOD 2015 TO 2019 FOR THE FIFTH SESSION OF THE TWELFTH NATIONAL ASSEMBLY**

## **1.0 Membership of the Committee**

The Committee consisted of Mr M J B Ng’onga, MP, (Chairperson); Mrs C M Mazoka, MP (Vice Chairperson); Mr J Chishala, MP; Mr S K Michelo, MP; Mr P C Mecha, MP; Dr M Imakando, MP; Mr D Mung’andu, MP; Mr B Hamusonde, MP; Mr M Mawere, MP; and Mr O S Mutaba, MP.

The Honourable Mr Speaker  
National Assembly  
Parliament Buildings  
**LUSAKA**

Sir

The Committee has the honour to present its Report on the Performance Audit Report of the Auditor General on the Management of Irrigation Systems in Zambia for the Period 2015 to 2019 for the Fifth Session of the Twelfth National Assembly.

## **2.0 Functions of the Committee**

Pursuant to the functions of the Committee set out under Standing Order No. 157(2), the Committee is mandated to consider special audit reports that may be referred to it by the House.

## **3.0 Meetings of the Committee**

The Committee held eight meetings to consider the Performance Audit Report of the Auditor General on the Management of Irrigation Systems in Zambia for the Period 2015 to 2019.

## **4.0 Procedure adopted by the Committee**

In order to familiarise itself with the issues under its consideration, the Committee requested written and oral submissions from the stakeholders listed at Appendix II.

## **5.0 Standards used in carrying out the Audit**

The Committee was informed that in accordance with the provisions of Article 250 of the *Constitution of Zambia* as amended by Act No. 2 of 2016, *Public Audit Act, No. 13 of 1994* and the *Public Finance Management Act, No. 1 of 2018*, the Office of the Auditor General was mandated to carry out performance audits in ministries, government departments and statutory corporations, and to report the results to the Republican President and the National Assembly. The audit was conducted in accordance with the standards set by the International Organisation of Supreme Audit Institutions (INTOSAI).

## **5.1 Background to the Audit**

Zambia has the potential to expand agricultural production, given the vast resource endowment in terms of land, labour and water that the country possesses. Of Zambia’s total land area of over 75 million hectares (752,000 km<sup>2</sup>), 58 per cent (42 million hectares) is classified as having medium to high potential for agricultural production, with rainfall

ranging between 800mm to 1,400mm annually and suitable for production of a broad range of crops, fish, and livestock. It is estimated that only 14 per cent of the total agricultural land is currently being utilised.

The agricultural sector provides for the livelihoods of 60 per cent of the country's labour force. About 80 per cent of employed people living in rural areas work in this sector. Agriculture contributes about 20 per cent of the country's Gross Domestic Product (GDP). Maize, sugar, tobacco, cotton, wheat flour and horticultural products account for about 12 per cent of export earnings. However, the performance of the agriculture sector has fluctuated significantly due to dependence on seasonal rainfall.

It was stated in the Audit Report that Zambia had the best surface and underground water resources in Africa, with many rivers, lakes, and dams. This, with the addition of high potential underground water aquifers in many areas offered excellent prospects for irrigation programmes. These abundant water resources accounted for 40 per cent of the water in Central and Southern Africa.

Estimates suggested that the country was currently only utilising 155,912 hectares, out of the potential 2.75 million hectares available for irrigation. To move towards attaining the 2.75 million hectares, the Government intended to bring about 400,000 hectares of land under irrigation by 2030. This was intended to achieve the agriculture sector vision of having economic growth and wealth creation through an efficient, competitive, sustainable and export-led agriculture sector that could assure food security and increased income.

In light of the above, the Government recognised the key role that irrigation played in increasing food production all year round, achieving food security, adapting to climate change, multiplying household income, and alleviating rural poverty. In the Seventh National Development Plan (7NDP) 2017-2021, one of the strategic focus areas under the crop production sub-sector, that of developing irrigation, was a key intervention for increasing crop diversification, production and productivity as well as the Sustainable Development Goal (SDG) No. 2, which sought sustainable solutions to end hunger in all forms by 2030 and to achieve food security. The aim was to ensure that everyone had enough good quality food to lead a healthy life. To achieve this goal as regards better access to food and widespread promotion of sustainable agriculture would entail improving the productivity and income of small-scale farmers by promoting equal access to land, technology and markets, sustainable food production systems and resilient agricultural practices.

Irrigation had historically been a major factor for increasing crop productivity of the land by directly providing sufficient water supply to raise the yield per hectare per crop and by allowing a second crop to be grown during the dry season. Successful irrigation could contribute to improvement in agricultural productivity, employment opportunities, particularly for marginal and landless workers, transport systems, through better farm and access roads, and women's participation.

However, incidences and variations of drought and floods that Zambia has been experiencing from time to time were attributed to a changing climate, which posed a serious threat to sustainable agricultural development. The most hit parts with drought included Southern, Western, Central, Eastern, and part of the Copperbelt provinces. The Minister of Finance on 9<sup>th</sup> October, 2015 stated that the performance of the agriculture sector during the 2014/2015

farming season was unfavourable owing to inadequate rainfall and over reliance on rain-fed agriculture, which had been a hindrance in the efforts to ensure national food security.

In a bid to provide policy direction on the irrigation sub-sector in Zambia and achieve the set targets, the Government developed several strategies which included the Second National Agriculture Policy (SNAP), National Irrigation Policy (NIP) 2004/2015 and the National Irrigation Strategy of September 2004. The overall objectives were to provide guidance to Government on all levels and types of investment, facilitate and support the development of a sustainable and competitive agricultural sector that assures food security at national and household levels and to maximise the sector's contribution to GDP.

In order to materialise the various policies and strategies in irrigation, the Ministry of Agriculture is charged with the responsibility of implementing both Government and donor-funded irrigation projects across the country. The Ministry also coordinates with the beneficiaries of the irrigation projects and offers technical and extension support towards the projects.

## **5.2 Motivation for the Audit**

This audit was motivated by the Presidential and budget speeches in 2015, 2016 and 2017 that focused on issues relating to the irrigation programmes which included:

- i. The adverse effects of climate change on agriculture and that the Government intended to mitigate this by bringing 5,000 hectares under irrigation each year. By 2030, the Government should have over 75,000 hectares under irrigation, placing a fifth of irrigable land under irrigation and expand production.
- ii. The performance of the agriculture sector during the 2014/2015 farming season was unfavourable owing to inadequate rainfall and over-reliance on rain-fed agriculture. As a result, the Government intended to redouble its efforts to expand the area under irrigation in 2016 and beyond by bringing a further 5,000 hectares under irrigation in 2016 and advance ongoing programmes thus allocated K56.7 million in 2016 to the irrigation programmes.
- iii. Furthermore, the Government also set aside K428.5 million for irrigation programmes to extend the area under irrigation and to set up twenty irrigation schemes in 2017 in order to scale-up the sustainable utilisation of wetlands and undertake irrigation projects using the Public Private Partnerships (PPP) model so as to support crop production all year round, thereby reducing over dependence on rain-fed agriculture.

## **5.3 Objectives of the Performance Audit**

The audit objective was to measure the efficiency, effectiveness and sustainability of the irrigation projects that were being implemented by the Ministry of Agriculture.

### **5.3.1 Specific Objectives**

- i. To determine whether the Ministry of Agriculture had been undertaking irrigation projects efficiently and effectively.
- ii. To ascertain whether the irrigation projects being implemented by the Ministry of Agriculture were sustainable.

## 5.4 Audit Questions

- i. Has the Ministry been undertaking irrigation projects efficiently and effectively?
  - a. Have the irrigation projects been implemented in a timely manner by the Ministry?
  - b. Have the irrigation projects met the intended targets as set out in the Project documents?
  - c. Have the irrigation projects been executed in a cost-effective manner?
- ii. To what extent were the irrigation projects being implemented by the Ministry in a manner that ensured sustainability?
  - a. To what extent has the Ministry ensured that the irrigation schemes were managed by competent personnel?
  - b. What measures has the Ministry put in place to ensure that the irrigation schemes were adequately maintained by the communities?

## 5.5 Audit Criteria

The audit criteria were drawn from the:

- i. Seventh National Development Plan (7NDP);
- ii. Sixth National Development Plan (SNDP);
- iii. Second National Agricultural Policy (2016);
- iv. Zambia National Agriculture Investment Plan (NAIP) 2014-2018;
- v. Four Project Implementing Units (PIUs) namely Irrigation Development and Support Project (IDSP), Small-Scale Irrigation Project (SIP), Agricultural Productivity and Market Enhancement Project (APMEP) and the Community Based Smallholder Irrigation Scheme (T-COBSI); and
- vi. International best practices from organisations such as the Food and Agriculture Organisation (FAO).

## 5.6 Audit Methodology

### 5.6.1 Research Design

This was a case study design that utilised a mixed method that included 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. The audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAIs) 3000. While the research was designed to be qualitative and quantitative, it also adopted a descriptive approach to simplify data interpretation.

### 5.6.2 Sample Population and Size

A total population of ten provinces was considered in the audit, of which four provinces were purposively selected as a sample size for the audit. The provinces selected for the audit were Southern, Central, Northern and Luapula. The provinces were selected on the basis that they had the project implementation sites and irrigation

measures put in place with a lot of activity. While the sample size of four may have been small, it was representative of the whole country as the majority of irrigation activities in the country were, to a large extent, similar in the manner they were executed.

### 5.6.3 Sampling Techniques

The audit used purposive sampling as the requirement of irrigation in the various provinces where programmes had been implemented to rely on the same concepts and applications. In order to ensure validity and reliability of data collection, the audit focused on the Ministry of Agriculture as the implementer of the irrigation projects.

### 5.6.4 Data Collection Techniques

The data collection techniques that were used in the audit included interviews through the use of interview assisted questionnaires and observation through site visits. The latter was used to collect primary data while the document review focused on collecting secondary data. The main techniques of primary data collection were as detailed below.

#### i. Interview Assisted Questionnaires

Interviews were held with responsible staff to supplement evidence collected through document review and physical inspections. Staff interviewed included the Principal Irrigation Engineers and Focal Point Irrigation Officers at the Ministry of Agriculture headquarters, Provincial and District Engineers, so as to obtain an understanding of the operations of the Irrigation Engineering Section in the Ministry at all levels.

Interviews were also conducted with other key stakeholders in the irrigation sub-sector, and these included officials from the Japanese Embassy, the Finnish Embassy, African Development Bank and the World Bank with the view of understanding the funding modalities to the irrigation sub-sector in the country.

There were interviews also conducted with the Project Implementation Units (PIUs) in charge of the different irrigation projects being undertaken to obtain an understanding of the implementation of projects, successes, and challenges. The PIUs interviewed were the Small-scale Irrigation Project (SIP), the Irrigation Development Support Project (IDSP), the Agricultural Productivity and Market Enhancement Project (APMEP) and the Community Based Smallholder Irrigation (T-COBSI).

In addition, interviews were undertaken with the managers of the irrigation schemes established as management entities for the operational irrigation schemes so as to understand the operations of the irrigation schemes, the benefits, or lack thereof, to the communities, and challenges faced in the operation of the schemes. The beneficiaries of the schemes were also interviewed to ascertain whether the irrigation projects/schemes had impacted positively on their livelihoods with regard to food security.

- ii. **Site Visits**  
Field visits to selected irrigation projects were conducted to confirm information from interviews and documentary reviews on the implementation stages of the projects, their existence and if they were running as laid out in the project documents. This enabled the team to appreciate different project methodologies with regard to the management and implementation of the irrigation schemes. Sites visited included Southern, Central, Northern and Luapula Provinces. The site visitations were undertaken with the view of ascertaining the existence of the irrigation schemes and projects and whether these were operational and met their intended objectives.

## **5.7 Documents Reviewed**

A review of documents was conducted to obtain an understanding and knowledge of the various policies and strategies the Ministry had with regard to irrigation in the country and how these had been applied to improve the irrigation sub-sector with the view of increasing productivity and profitability for small-scale farmers. The documents reviewed included the following:

- i. Ministry of Agriculture Strategic Plan for 2014-2016
- ii. National Agriculture Policy September 2005
- iii. National Irrigation Plan (NIP) July 2005
- iv. Irrigation Policy and Strategy September 2004
- v. Zambia National Agriculture Investment Plan (NAIP) 2014-2018
- vi. National Agricultural Policy 2004-2015
- vii. Irrigation Policy and Strategy for Zambia Final Draft December 2016
- viii. Sustainable Development Goals (SDGs)
- ix. Vision 2030
- x. Seventh National Development Plan (7NDP)
- xi. Sixth National Development Plan (SNDP)
- xii. Presidential Speeches to Parliament
- xiii. Budget Speeches to the National Assembly by the Minister of Finance
- xiv. Reports of the Parliamentary Committee on Agriculture, Lands and Natural Resources
- xv. Budgets from the Ministry of Agriculture, specifically the Irrigation Engineering Section
- xvi. Annual Work Plans for the Irrigation Engineering Section under the Ministry of Agriculture
- xvii. Annual Reports (2013-2018) for the Irrigation Engineering Section
- xviii. Memoranda of Understanding (MOUs)/Agreements with stakeholders
- xix. Monitoring and Evaluation Reports from the projects
- xx. Job descriptions for members of staff in the Irrigation Engineering Section in the Ministry of Agriculture
- xxi. Organisation Structure for the Irrigation Engineering Section in the Ministry of Agriculture.

## **6.0 Consideration of Submissions on the Audit Findings and Observations**

The Committee considered submissions from various stakeholders who included researchers, civil society organisations, Permanent Secretaries from the Ministry of Finance, Ministry of Agriculture, and Ministry of Fisheries and Livestock. The submissions from the stakeholders and the Permanent Secretaries, as well as the observations and recommendations made by the Committee are as set out hereunder.

## **6.1 Had the Ministry of Agriculture been undertaking irrigation projects efficiently and effectively?**

### **6.1.1 Releasing Counterpart Funding**

In order to accelerate the development of irrigation in the country, cooperating partners in conjunction with the Government agreed on the funding modalities for the irrigation projects. Cooperating partners were responsible for providing the major funding while the Government was to provide counterpart funding to supplement the cooperating partners' funding.

However, a review of the Ministry's funding details indicated that the Government's release of counterpart funding was not in accordance with the project agreements as the Government delayed in releasing the funds, and even when released, the funds were not adequate.

The Treasury released K241,855,655.31 against a provision of K1,206,359,222.66 as counterpart funding to cater for various irrigation projects, representing 20 per cent funding against the total authorised provision. This meant that 80 per cent of the counterpart funding was not released, thereby impacting negatively on the implementation of irrigation projects and leading to delayed commencement of the projects, non-adherence to milestones set, and failure to meet the timeframes for the implementation of the projects. Detailed explanations on the specific projects are provided below.

#### **6.1.1.1 Agriculture Productivity and Market Enhancement Project (APMEP)**

This project was expected to be implemented between 2015 to 2019 with amounts totalling K165,000,000 (\$15,000,000) covering 3,000 hectares. However, as of December, 2018, out of the counterpart budget component of K39,710,000 (\$3,610,000), only amounts totalling K2,530,000 (\$230,000), representing 6.37 per cent of the total Government commitment, had been released as counterpart funding by the Ministry of Finance to the project.

A review of the records revealed that the project had not been implemented according to schedule, thereby resulting in delays in setting up the Project Implementation Unit (PIU) to manage the day to day activities of the project. The delay was also caused by the fact that the project commenced without irrigation scheme designs, and it took a long time for the Ministry to find a suitable consultant to prepare these designs, which were ready only in October, 2018. This delay led to the irrigation projects not being completed on time and benefits not accruing to the intended communities as per project plan.

#### **6.1.1.2 Irrigation Development Support Project (IDSP)**

IDSP was to be implemented in a period of seven years starting from 2011 to 2018, with a completion date of June 15, 2018, and a closing date of December 15, 2018. The Government was to provide counterpart funding towards the implementation of the project in amounts totalling K593,774,097. Part of these funds were meant for the resettlement of displaced members of the communities in areas where irrigation schemes were to be constructed.

A site visit carried out in March, 2018, revealed that the construction of Mwomboshi dam targeted 702 households, out of which 230 households were displaced as a result of the construction of the dam.

As of May, 2019, 215 houses had been constructed for the displaced members of the community, leaving fifteen households still displaced. The delay in the construction of the houses was attributed to the delayed release of counterpart funds by the Government.

### **6.1.1.3 The Community-Based Smallholder Irrigation (T-COBSI)**

There was an agreement made in October, 2012 between the Government and the Japanese Government on the funding modalities of the T-COBSI project. The Government was to provide counterpart funding meant for community mobilisation, training Ministry of Agriculture staff and training of farmer-beneficiaries (targeting small-scale farmers) on how to develop and operate the irrigation schemes. Counterpart funding was expected to pay daily subsistence allowances to the Ministry staff and procure materials for construction of the permanent weirs needed to support the diversion of river/stream water from the source to the irrigation infrastructure and the farms.

The construction of permanent weirs was inevitable and was supposed to be carried out under the direct force account by the Government. The Ministry planned to construct fifty permanent weirs during the project period. However, of the fifty permanent weirs that were planned for construction, JICA fully supported the construction of fourteen. The remaining thirty six permanent weirs were to be constructed between 2015 and 2016, but due to lack of counterpart funding, they were still not constructed.

As of September, 2019, a check with the Ministry revealed that the construction of the thirty six permanent weirs had not yet commenced. Consequently, the planned off-season agricultural activities were not executed to benefit most of the small-scale farmers in that area who had their fields furthest from the water sources. They did not participate in the growing of crops off-season to increase their productivity and profitability.

This, therefore, meant that PIUs did not implement the projects within the prescribed time, causing a delay to yield the intended benefits by the farmers and achieve the objective of ending hunger and eliminating poverty amongst the vulnerable small-scale farmers.

#### **Ministry of Agriculture Submission**

The Committee was informed that the Ministry acknowledged the underfunding from the Treasury for not only irrigation development programmes but other agricultural development programmes as well. The Ministry of Agriculture stated that it was constantly engaging with the Ministry of Finance to ensure that resources were provided on time. The Committee further heard that the Ministry acknowledged the negative impact this had had on the implementation of the programmes such as delays in implementation and failure to meet key milestones.

#### **Cooperating Partner's Submission**

The Committee was informed that the African Development Bank concurred with the audit findings that the counterpart contribution to the Bank financed projects was below target in all cases. However, in the case of the Small-Scale Irrigation Project (SIP), the Government's commitment was demonstrated by improved funding from the national treasury to the SIP during the last two years as it was a condition of Finnish funding that the Government of the Republic of Zambia pay SIP staff salaries. This funding had been sustained even beyond the end of the Project as the SIP had remained operational as an institution, providing funds for staff salaries and operational costs. This funding also allowed the SIP to support the nascent SPV irrigation management companies in Nega Nega, Nzenga and Sinazongwe. The Committee was further informed that the African Development Bank had recommended that, in future, every donor funded project approved should have an allocation in the national budget.

### **Ministry of Finance Submission**

The Committee was informed that the Government had leveraged support from various cooperating partners to finance the development of irrigation systems in Zambia. This notwithstanding, the role of the Ministry of Finance had been limited to that of providing counterpart funding to the projects and servicing the debt on the disbursed amounts. Despite the lower than budgeted releases to the irrigation sub-sector over the period 2015 – 2018, irrigation development remained one of the priorities in the Seventh National Development Plan. The Committee was informed that the lower than budgeted releases were largely attributed to fiscal constraints that were experienced over the period.

The Committee was further informed that during the period 2015 – 2017, the country experienced challenges in the energy sector, relating to fuel and electricity. The low rainfall that was recorded over the period negatively affected the power generation capacity, which led to a power deficit. This seriously constrained the business environment and consequently revenue collections. To bridge the electricity deficit, the Government realigned the budget to accommodate emergency power imports in order to support business activities. In addition, the fuel subsidy arrears which posed a threat to the supply of fuel further worsened the Treasury's position and its ability to meet most planned activities. Approximately K3.1 billion was spent in 2015 on fuel and electricity and K3.7 billion in 2016. These expenditures were all unplanned for.

The Committee was informed that this negatively affected most expenditure areas, including counterpart funding to the projects. Further, the depreciation of the Kwacha against major trading currencies increased expenditures on foreign currency denominated expenditures such as external debt service. The Committee was informed that the Treasury was still servicing the debt on disbursed amounts on the irrigation projects.

### **Committee's Observations and Recommendations**

The Committee observes that late and/or non-release of counterpart funding negatively affects the implementation of the irrigation schemes, leading to delays in project commencement and completion.

In this regard, the Committee strongly recommends that the Government should expedite the release of counterpart funding so that project implementation is not delayed.

#### **6.1.2 Irrigation Systems – Small Irrigation Project (SIP) and Government Irrigation Project**

According to the Ministry, the choice of irrigation methods in SIP irrigation schemes was based on estimated costs and benefits of the available options. Surface irrigation was by far the most widespread method where conditions were favourable.

A site visit conducted at Manyonyo Irrigation Scheme in Mazabuka revealed that the scheme used furrow and canal irrigation systems to supply to the irrigation fields. These methods of irrigation proved to be inefficient as the water distribution was uncontrolled, and most of it wasted. This resulted in most of the water pumped going to waste as the scheme could not regulate the amount of water supplied to a particular field or crop.

### **Cooperating Partners' Submission**

The Committee was informed that the SIP covered Mazabuka but not Kalomo. The choice of irrigation method was informed by various experts at design stage and furrow and flood

irrigation, though wasteful, was deemed most suitable for sugarcane as it seemed to be the standard technology widely used even by other commercial out growers. The Committee was further informed that efficiencies in downstream water management could be made through training of farmers and improving distribution structures. Alternative methods such as sprinkler and drip were not suitable for sugarcane.

### **Ministry of Agriculture Submission**

The Committee was informed that the Ministry acknowledged that these findings were in line with different literature on the design of irrigation systems. The Committee was further informed that costs, benefits, available resources, the complexity of systems and requisite skills required by farmers to maintain the irrigation systems influenced the choice of the irrigation system design. Therefore, implementation of different irrigation systems by these projects in different areas was done after a careful consideration of these factors.

### **Committee's Observations and Recommendations**

The Committee observes that the methods of irrigation used to supply water to the irrigation sites are inefficient, leading to wastage of water resources.

The Committee therefore, recommends that more appropriate and less wasteful irrigation methods be devised and farmers be trained in the management of their irrigation schemes to avoid wastage of water resources.

### **6.2 Were the irrigation projects implemented in a timely manner by the Ministry?**

According to the project documents for all four projects, the projects were supposed to be implemented within a period of five to seven years. An approval authority was to provide proper and timely review and authorise a procurement requirement of the procuring entity, which had been submitted to the approving authority. The delayed processes in signing the project contracts and approval of payments by the Ministry led to the delayed implementation of the irrigation projects as it took very long for projects to be approved for execution.

### **Cooperating Partners' Submission**

The Committee was informed that this was mainly due to the absence of quality feasibility and design studies at appraisal. The Committee was informed that cost estimates were made arbitrarily, and the design studies were not conducted within the project timeframe, leading to delays, cost escalation and reduction of targets. The Committee was informed that in future, no irrigation project should be presented for approval in the absence of evidence of feasibility study and design and tender documents. They stated that the Government should make provision in the budget for funds to conduct feasibility studies and engineering designs. The Government should also take advantage of availability of trust funds within donor organisations to conduct such studies.

### **Ministry of Agriculture Submission**

The Committee was informed that the Ministry noted the observations of the Auditor General on the timeliness of implementation of the irrigation projects. The Committee was informed that the implementation of the projects had delayed in most cases due to administrative challenges on the part of both the Government and the cooperating partners as highlighted in the Report. The Committee was further informed that, going forward, the Ministry, in collaboration with the cooperating partners, was making efforts to improve implementation of the programmes. The Committee was informed that, in future, all African Development Bank (AfDB) projects would have a pre-implementation phase to facilitate the conduct of

feasibility studies, design of infrastructure and pre-procurement processes to reduce delays before the implementation of the actual project. Other cooperating partners were also positively considering this approach as it minimised delays in project implementation.

### **Committee's Observations and Recommendations**

The Committee is disappointed with the findings in the Auditor General's Report concerning the lack of pre-feasibility and feasibility studies and strongly recommends that these studies should be done prior to the implementation of irrigation projects to ensure timeliness of implementation of the projects.

#### **6.3 Were the irrigation projects executed in a cost-effective manner?**

The Irrigation Engineering Section under the Technical Services Branch (TSB) was mandated to plan and develop all aspects related to irrigation engineering by carrying out feasibility studies which were meant to provide financial analysis, to which social benefits and cost adjustments would be made in order to economically evaluate whether or not an irrigation project should be done.

A review of records revealed that the Ministry did not carry out pre-feasibility and feasibility studies to ascertain the actual costs of implementing the projects. This meant that the SIP and APMEP projects that were carried out only relied on cost estimates which did not reflect the true value of the actual costs of the irrigation projects. This was observed in the implementing partners' projects.

#### **Cooperating Partners' Submission**

The Committee was informed that availability of quality pre-feasibility, feasibility and design studies before project appraisal should become an imperative and funds for these should be provided for in the national budget. The Committee was informed that in future, no irrigation project should be presented for approval in the absence of evidence of feasibility study and designs, bills of quantities and tender documents. The Committee was further informed that the Government should make provision for funds to conduct feasibility studies and engineering designs.

#### **Ministry of Agriculture Submission**

The Committee was informed that the Ministry agreed with the observations made by Auditor General. The Committee was informed that lessons learnt in the implementation of these projects had already been incorporated into the design of future projects. The Committee was further informed that feasibility studies as well as detailed designs for irrigation schemes had already been developed for the planned successor project for the Smallholder Irrigation Project. This would minimise delays in the implementation of the new projects.

### **Committee's Observations and Recommendations**

The Committee observes that pre-feasibility and feasibility studies are not being done before commencement of projects, sometimes due to lack of capacity at the Technical Services Branch. The Committee therefore, recommends that if the staff at the TSB has no capacity to carry out feasibility studies, external consultants should be engaged for this purpose while capacity building is being undertaken for the irrigation engineers. The feasibility study report should be taken into consideration in appraising the projects.

#### **6.4 To what Extent were the Irrigation Projects being implemented by the Ministry in a manner that ensures sustainability?**

Irrigation projects should have designed a sustainability model that would ensure continuity of the irrigation projects once they were handed over to the communities. According to the project documents, the irrigation schemes identified should be self-sustaining after full implementation. This would be done through management teams within each irrigation scheme on behalf of the communities.

The irrigation schemes would not rely on any financial contributions from the cooperating partners and the Government once the project was completed and handed over to the community. Once an irrigation project was completed, it was handed over to the community members under the care and supervision of an established management entity which managed the scheme on behalf of the community members.

#### **Cooperating Partners' Submission**

The Committee was informed that the observations made by the Auditor General were correct. However, the Bank, in collaboration with the Ministry of Foreign Affairs in Finland, undertook a study and developed guidelines for Public Private Partnership (PPP) management of irrigation schemes that was adopted for the Nega Nega Irrigation Scheme under SIP. The Committee was informed that in future, the Ministry of Agriculture should integrate within the National Agriculture Policy and Strategy, guidelines for management of large community infrastructure such as dams, irrigation schemes and similar community level infrastructure to improve management and sustainability. The Public Private Partnership (PPP)/Special Purpose Vehicle models tested under KASCOL and Nega Nega should be institutionalised.

#### **Ministry of Agriculture Submission**

The Committee was informed that the Government had taken note of the observations made by the Auditor General on the need to enhance sustainability of irrigation schemes. In order to enhance sustainability, the Ministry was currently creating management companies for newly developed schemes that employed competent people to manage the schemes on behalf of the farmers. Manyonyo Irrigation Scheme was currently operating on this model.

The Committee was informed that the Manyonyo Irrigation Scheme had paid off all the loans obtained from Zambia Sugar Plc during the first three years of operation and had now managed to stand on their own. The farmers received their first dividends in 2018 of ZMW 6,000 per household. During the same period, the scheme purchased a 75 horsepower tractor. At the time of reporting, the scheme had ZMW 3.5 million positive balance in their account. In addition, the scheme had so far paid ZMW 1.3 million to the Government in various taxes.

#### **Committee's Observations and Recommendations**

The Committee observes with concern that no plans have been made to ensure the sustainability of the projects or indicating how they will be managed after being handed over to the communities by the Ministry.

The Committee therefore, recommends that for accountability purposes, the Ministry should submit project sustainability plans together with project appraisal documents, including the private sector engagement when seeking approval for funding through the Ministry of National Development Planning.

### **6.5 To what extent had the Ministry ensured that the irrigation schemes are managed by competent personnel?**

The Irrigation Engineering Section should have competent staff to execute the irrigation projects being undertaken across the country to related activities in order to achieve its irrigation obligations in a professional way. It should also ensure the recruitment of appropriate, competent and sufficient numbers of staff at all levels in order to strengthen its institutional capacity to implement irrigation programmes.

A review of the Irrigation Engineering Section's staff establishment showed that of thirty one Irrigation Engineers, only twenty four positions were filled, leaving seven positions vacant.

#### **Ministry of Agriculture Submission**

The Committee was informed that the Ministry agreed with the Auditor General's finding and was actively engaging Cabinet Office and Ministry of Finance on the recruitment of various professionals in the Ministry, including irrigation engineers and technical officers.

#### **Committee's Observations and Recommendations**

The Committee observes that the major challenge with the management of irrigation schemes relates to monitoring and supervision by the Ministry of Agriculture. This leads to a lot of problems, including poorly constructed infrastructure such as canals and dams, and poor governance and institutional arrangements.

In this regard, the Committee recommends that regular monitoring, supervision and capacity development should be part of sustainability plans built in from the start of irrigation projects. The Government should facilitate capacity development of smallholder irrigation schemes both on governance and institutional matters, as well as on technical matters.

### **6.6 What measures had the Ministry put in place to ensure that the irrigation schemes are adequately maintained by the communities?**

The Ministry had put in place a number of irrigation schemes that should be maintained by the communities in various modes. The sustainability of the projects established under the Small-scale Irrigation Project (SIP), Irrigation Development and Support Project (IDSP) and the Agriculture Productivity and Market Enhancement Project (APMEP) was through the creation of management entities that were going to manage the affairs of the schemes as well as ensure continuity of operations after project completion, thereby enhancing ownership by beneficiaries.

The audit revealed that the Ministry did not have any documentation in place as a reference point for managing the dams and irrigation schemes in a sustainable way after they had been constructed and handed over to the communities. This was attributed to the fact that they did not develop a comprehensive maintenance schedule for regular dam check-ups, maintenance and management. This in turn led to some dams collapsing, developing cracks and leakages leading to wastage of the water resources. It was noted through the physical inspections undertaken that the Ministry did not put in place measures to ensure that irrigation schemes were adequately maintained by the communities.

#### **Stakeholders' Submission**

The Committee was informed that this challenge was inherent in the initial project development process. It was a common fact that in most developing countries, the uptake and sustainable running of projects had been a problem. The Committee was informed that this

had been blamed on the “top down approach” where projects were more or less imposed on communities by technocrats. As indicated in the report, the absence of proper feasibility assessments, which should also include the socio-economic and gender analysis (SEAGA) as part of the ‘bottom up’ approach, was a key aspect in ensuring sustainable project uptake, operation and maintenance.

### **Committee’s Observations and Recommendations**

The Committee observes that most project schemes fail because the beneficiary communities are not adequately involved in their planning. The Committee therefore, recommends that a deliberate effort should be made to involve communities in the development of certain project concepts so as to foster a sense of ownership amongst the beneficiaries.

## **7.0 CONCLUSION**

Zambia’s current high dependence on rain fed agriculture has resulted in low productivity, food insecurity and high levels of poverty. Irrigation has the potential to boost the country’s agricultural production significantly, enhance food security and lift a substantial proportion of the population out of poverty. At the same time, Zambia is well placed to successfully engage in irrigation programmes because it is endowed with significant water resources and adequate rainfall. It is for this reason that the Vision 2030, the Seventh National Development Plan and other key policy instruments in the agriculture sector, recognise and prioritise irrigation as a key driver of growth and development of the sector and the country at large. However, irrigation schemes are highly technical and expensive and therefore, require dedicated human and financial resources, among others, to be successfully implemented.

Given the foregoing, it would be prudent for the Government to take note of the various concerns raised by both the Auditor General and various stakeholders who interacted with the Committee. In this regard, the Government should endeavour to make budgetary provisions in the yellow book to meet the counterpart contributions towards various irrigation projects. Further, the Government should seriously consider strengthening private sector technical support and market linkages to ensure that irrigation projects are viable. Additionally, the Government should make deliberate efforts to facilitate community participation in project identification and development so as to promote ownership of the projects by the beneficiaries.

The Committee is grateful to the Office of the Auditor General for providing technical support during its deliberations and to all stakeholders who made submissions before it. The Committee further wishes to thank you the Hon Mr Speaker and the Clerk for the guidance and support services rendered to it during the deliberations.

Mr M J B Ng’onga, MP  
**CHAIRPERSON**

January, 2021  
**LUSAKA**

**APPENDIX I - List of National Assembly Officials**

Ms C Musonda, Principal Clerk of Committees

Mr F Nabulyato, Deputy Principal Clerk of Committees (FC)

Mrs C K Mumba, Senior Committee Clerk (FC)

Mrs M K Siwo, Committee Clerk

Mrs R N Mwiinga, Typist

Mr M Chikome, Committee Assistant

Mr D Lupiya, Committee Assistant

Mr M Kantumoya, Parliamentary Messenger

## **APPENDIX II – List of Witnesses**

### **AUDITOR GENERAL**

Mr E Tembo, Director

Ms M Mukanta, Assistant Director, Performance and Environment Audits

Mr E Chisalu, Senior Auditor, Performance and Environment Audits

Ms T Mushumba, Senior Auditor

### **MINISTRY OF FINANCE**

Mr M Chikuba, Permanent Secretary

Mr B Lumbwe, Senior Economist

Mrs B C Sinyangwe, Senior Economist

Mr C Kapambwe, Senior Economist

### **MINISTRY OF AGRICULTURE**

Mr S Zyambo, Permanent Secretary

Mr M Mwale, Director – Agriculture

Mr S Chisakuta, Deputy Director – Technical Services Branch

Mr E Kooma, Principal Agriculture Research Officer

Mr M Chulu, Acting Principal Policy Analyst

### **IRRIGATION DEVELOPMENT SUPPORT PROJECT**

Eng. D Chamba, National Coordinator

Mr M Kabwe, **Project Assistant**

### **UPSCALING SMALLHOLDER IRRIGATION PROJECT**

Mr G Phiri, National Coordinator

### **AGRICULTURE PRODUCTIVITY MAREKT ENHANCEMENT PROJECT**

Mr S Phiri, Project Engineer

### **AMIRAN ZAMBIA**

Mr I Samakande, Irrigation Manager

### **INTERNATIONAL DEVELOPMENT ENTERPRISE**

Mr K Chelemu, Technical Director

### **MINISTRY OF FISHERIES AND LIVESTOCK**

Dr B Mwenya, Permanent Secretary

Eng. C Muthiya, Assistant Director – Technical Services Branch

Dr P Fandamu, Deputy Director – Department of Veterinary Services

Dr A S Kefi, Director - Fisheries

### **AFRICAN DEVELOPMENT BANK**

Mr L Bangwe, Agriculture Specialist

### **INDABA AGRICULTURAL POLICY RESEARCH INSTITUTE**

Mr B Zulu, Outreach Director

Dr H Ngoma, Research Fellow

Ms M Kabisa, Research Associate

**UNZA SCHOOL OF AGRICULTURAL SCIENCES**

Dr B H Chishala, Dean

Dr E Phiri, Lecturer

Dr M C Sinda, Lecturer