

# **REVISED FINAL ENVIRONMENTAL AUDIT REPORT FOR THE IRRIGATION DEVELOPMENT SUPPORT PROJECT FUND (ISF) SITES IN MPIKA, MKUSHI, LUNDAZI, KABWE, LUANSHYA, KAFUE AND LUFWANYAMA**

## **ENVIRONMENTAL AUDIT REPORT**

SUBMITTED TO



Ministry of Agriculture

IRRIGATION DEVELOPMENT SUPPORT PROJECT (IDSP)  
CREDIT NO. P172140



**WORLD BANK**

Prepared by

**Dickson Kabwe**

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## **ACRONYMS AND ABBREVIATIONS**

<b>EIB</b>	European Investment Bank
<b>EMP</b>	Environmental Management Plan
<b>EPPCA</b>	Environmental Protection and Pollution Control Act
<b>ESIA</b>	Environmental and Social Impact Assessment
<b>GRZ</b>	Government of the Republic of Zambia
<b>IDSP</b>	Irrigation Development Support Project
<b>IDA</b>	International Development Association
<b>ISF</b>	Investment Support Fund
<b>ZCA</b>	Zambia College of Agriculture
<b>ZCHT</b>	Zambia Center for Horticulture Training
<b>ZCS</b>	Zambia Correctional Service
<b>ZEMA</b>	Zambia Environmental Management Agency
<b>ZNS</b>	Zambia National Service
<b>ZPS</b>	Zambia Police Service



## **1.0 INTRODUCTION**

The Irrigation Development Support Project (IDSP) is a World Bank funded irrigation infrastructure development project under the Ministry of Agriculture (MoA).

The project objective is to spearheading the provision and development of bulk water irrigation infrastructure and improving commercialised irrigated agriculture in areas with “high potential” for irrigated agriculture across the country. The Project has been in its implementation phase since November 2011 following the fulfilment of all World Bank conditions precedent to effectiveness of the Financing Agreement for the project credit. Additionally, the project is supported by counterpart funding from the Government of the Republic of Zambia (GRZ) in foregone taxes and compensation for people that will be relocated and resettled and/ or affected by project activities.

Upon the Government of Republic of Zambia’s request, IDSP was restructured for a second time on January 20, 2020 to support the government to undertake Phase 1 of a remedial action plan to ensure the safety of ten dams that were constructed/rehabilitated under the World Bank funded “Water Resources Development Project (P114949),” which closed in November, 2018.

The Irrigation Development Support Project (IDSP) engaged an Independent Environmental Consultant to prepare an Environmental Audit Report based on the World Bank conditions, Integrated Pest Management Plan and Decision Letter conditions and conduct compliance checks on the conditions given to the Institutions who access Public Infrastructure Investment funds.

### **1.1 Background**

The Government of the Republic of Zambia received credit from the International Development Association (IDA) of the World Bank towards the cost of the Implementation of the Irrigation Development and Support Project (IDSP). The Irrigation Development Support Project (IDSP) is a World Bank funded infrastructure development project being implement under the Ministry of Agriculture (MOA).

The project development objective (PDO) is to increase yields per hectare and value of diverse products marketed by small-holders benefitting from investments in irrigation in selected sites served by the project. This has since been revised to “provide improved access to irrigation services in selected sites in the recipient’s territory. It is being implemented under components 1) Public Infrastructure



investment, 2) Development of Irrigation management capacity, and 3) Project management and coordination.

Component 1-Public Infrastructure included providing grants to five public institutions with different kinds of support under the Investment Support Fund (ISF) sub-component. Under this component, IDSP approved and funded 13 subprojects from five (5) Public Institution, namely; Zambia National Service (ZNS), Zambia Correctional Service (ZCS), Zambia Police Service (ZPS), Zambia College of Agriculture (ZCA-Mpika) and Zambia Center for Horticulture Training (ZCHT). These sub-projects were ratified to enable Public Institution to access Investment support funds for acquisition of productive irrigation equipment and assets, covering a total of 2,348 hectares once operational. Crops produced include soya beans, maize and wheat. Through the construction and operational phases, the grant recipient's are expected to comply with environmental legislation and the environmental management commitments made through the Environmental Projects Briefs (EPBs).

It is against this background that Irrigation Development Support Project (IDSP) engaged an Environmental Auditor to carry out an environmental audit of activities implemented at five ISF grant recipients in Mpika, Mkushi, Lundazi, Kabwe, Luanshya, Mpika, Serenje, Kafue and Lufwanyama Districts.



## **2.0 OBJECTIVE AND SCOPE**

The main objective and Scope of the report is to conduct an Environmental Audit for the Investment Support Fund grant recipients (Zambia College of Agriculture, Zambia Correctional Services, Zambia National Service, Zambia Police Service and Zambia Centre for Horticultural Training in Mpika, Mkushi, Lundazi, Kabwe, Luanshya, Serenje, Kafue and Lufwanyama Districts. The following is the specific objective of the report:

- i. Undertake an Environmental Audit for each of the Investment Support Fund sites;
- ii. Audit the existing institutional processes and/or systems relevant to environmental management at each of the Investment Support Fund sites;
- iii. Assess the environmental management practices;
- iv. Determine compliance against the commitments in in the Environmental project brief, Zambia Environmental Management Agency requirements and World Bank requirements.
- v. Conduct a compliance on sites under production against Pest Management and assess areas that require compliance to specific aspects of the regulations;
- vi. Collect and assess information on the number of beneficiaries employed on temporal and permanent basis due to increased scope of works resulting from the support received under IDSP;
- vii. Collect any information related to any changes in livelihoods due to the employment referred to in (vi) above;
- viii. Identify and assess the public institutions' ability to ensure sustainable environmental and social management at the sites;
- ix. Bring out any positive impacts resulting from the support provided by the project;
- x. Generation of a consolidated audit report with recommendations on how to improve or sustain good environmental management; and
- xi. Prepare presentation of the findings.





### **3.0 LEGISLATION AND OPERATIONAL POLICIES**

A number of Local and International Environmental Management and Protection Acts relevant to the operation of the Investment Support Funds sites will be reviewed. The core pieces of legislation and associated regulations governing environmental management of farming activities and environmental protection are the Environmental Management Act (EMA) of 2011.

A number of relevant local and international Acts and Regulations relating to environmental conservation and protection have been considered with respect to the existing agricultural sites. The legal framework and policy review conducted will guide in assessing the compliance of the sites according to the different legislations which governs the agricultural activities.

The Environmental Audit was carried out in accordance with the following pieces of legislation:

#### **3.1 The Environmental Management Act, No. 12 of 2011**

The Zambia Environmental Management Agency, through this Act ensures that adverse impacts by proposed developments are mitigated against. The Environmental Impact Assessment Regulations of 1997 were publicized under the then Environmental Protection and Pollution Control Act (EPPCA). The regulations provide for the undertaking of either an EPB or ESIA on any proposed development in protected areas or sensitive environments. In particular, EPBs are restricted to projects with minimal footprint and in less sensitive environments while ESIA is usually undertaken on large scale developments that are likely to have significant impact on the environment. The Act has various provisions pertaining environmental management, but some of the sections that specifically apply to the project by ISF sites include:



**Relevance:** Part III section 29(1), Environmental Impact Assessment, requires that *“A person shall not undertake any project that may have an effect on the environment without the written approval of the Agency, and except in accordance with any conditions imposed in the approval.”*

**Compliance:** ISF Sites conducted Environmental Impact Assessment and was given approval by the Zambia Environmental Management Agency (ZEMA) to undertake the proposed project in the ISF sites. Therefore, the contractor through the **ISF sites are compliant.**

### **3.1.1 Environmental Management (Licensing) Regulations, SI No. 112 of 2013**

There are several parts in this SI giving powers to ZEMA to control the discharge of water pollutants, air emissions, pesticides and other toxic substances, waste (both municipal and hazardous) and ozone depleting substances in order to safeguard the general health, safety or welfare of person, animal life and plant life. Parts II and III are relevant to this project.

**Relevance:** Part II of the Regulations: This part gives powers to ZEMA to regulate discharge of water pollutants and emission of air pollutants. The clearing of land for access roads, as well as the loading and offloading of raw materials during the implementation of this project may generate dust that will need to be managed in compliance with the above regulations. Part III of the Regulations: This part of the SI regulates the reclamation, reuse, recovery, recycling, transportation, export, collection and disposal of waste from industrial, commercial, domestic or community activities. ZEMA regulates these activities through licensing of handlers of waste and operators of disposal sites. Part IV, Section 32(1) Prohibition of discharges into the environment, requires that *“A Person shall not, without a license discharge, cause or permit the discharge of, a contaminant or pollutant into the environment if the discharge causes or is likely to cause, an adverse effect.”*

**Compliance:** All the ISF had not obtained Pesticide and Toxic Substance Licenses from ZEMA for Storage of Agricultural Chemicals. Therefore, the ISF sites **were not compliant to this Regulations.**

### **3.2 Agricultural Lands Act, Cap 187. (No. 57 of 1960**



The Act that gives provisions for the establishment of the agricultural lands board, alienation of agricultural lands, tenant farming schemes, valuations of agricultural lands and powers of the minister as far as agricultural lands is concerned.

**Relevance:** The Act is very relevant to ISF sites in that the project area will be used for Agriculture purposes.

**Compliance:** The ISF sites have conformed to the provisions of this Act.

### **3.3 The Agriculture (Fertilizer and Feed) (Amendment) Act No. 32 of 2010**

An Act to provide for the regulation and control of the manufacture, processing, importation and sale of agricultural Fertilizers' and farm feed; to provide for minimum standards of effectiveness and purity of such fertilizers and feed; and to provide for matters incidental to or connected with the foregoing.

**Relevance:** The ISF sites will involve the use of fertilizers to support the growing of crops.

**Compliance:** The ISF sites are applying Fertilizers in **compliance with** the provisions of this Act.

### **3.4 The Noxious Weeds Act, Cap 231 No.13 of 1994**

An Act gives provisions for the regulation of weeds declared noxious in an area or agricultural lands.

**Relevance:** The ISF sites will not import, distribute, convey and or sale any noxious weed or any part thereof or of any seed with which the seed of any particular noxious weeds has become mixed with as provided in the act.

**Compliance:** The ISF sites are removing any noxious weeds as identified and instructed by an authorizing officer acting legally and in accordance with this act. Therefore, ISF sites audited were compliant will this Act.



### **3.5 The Plant, Pests and Diseases Act, SI 176 of 1965**

An Act to provide for eradication and prevention of spread of pests, control of importation of growing media, injurious organisms, invertebrates and plants, cured tobacco and miscellaneous.

**Relevance:** In the farming process, pests will also come up and ISF sites will take all necessary measures within the provisions of this act to eradicate and prevent the spread of pests within and outside the proposed project site.

**Compliance:** The ISF sites shall import any growing media, injurious organisms, invertebrates and plants are controlled in accordance with the provisions of this act. The ISF sites were **compliant** to this Act.

### **3.6 Plant Variety and Seeds Act (Amended by Act 21 of 1995)**

An Act to provide on administration, registration of seed importation and cleaning, seed certification, inspection of seeds, prescribed seeds, import and export of seed, offences related to seeds and miscellaneous issues regarding seeds.

**Relevance:** This Act is relevant to the project as the planting of seed will be involved.



**Compliance:** The ISF sites plant seed that has been certified by authorised Agencies in Zambia. Only prescribed seeds inspected by authorities officers acting legally will be planted at the sites. The ISF sites **are compliant** with this Act.

### **3.7 The Lands Act No. 20 of 1995**

The Department of Lands administers the Lands Act for alienation of land under statutory Leaseholds. The Land Act of 1995 divides Land into three categories namely; State, Local Authority and Traditional land. The Act provides for an efficient and effective land administration system that promotes security of tenure, equitable access and control of land for sustainable socio- economic development of the people of Zambia.

**Relevance:** Section 3 (1) of the Lands Act stipulates that all land in the country is vested in the President and. However, Section 3 (2) in subjection to Section 3 (4) highlights the procedures to which the president may delineate land to a Zambian whereas Section 3 (3) highlights the procedures to which the president may delineate land to a non Zambian. Section 4 of the Act provides the conditions on the alienation of land to which the president may delineate land. The regulations are relevant because the project proponent will eventually have to obtain Title to the proposed site and ownership will be in private hands which is only possible under this regulation.

**Compliance:** The proposed project site falls under State land. The provisions of the Act shall be adhered to and followed in obtaining Title under the relevant tenure category.

### **3.8 The Forest Act No. 4 of 2015**

Provides for the establishment and management of National and Local forests, conservation and protection of forests and trees, and licensing and sale of forest products. Some of the trees that are protected under this Act include: *Parinari curatellifolia*, *Anisophyllea boehmii*, *Pterocarpus angolensis*, *Faurea saligna* and *Julbernardia paniculata*.



**Relevance:** The farming activities will entail the clearing of existing vegetation. This impact, however, is minimal, in view of the fact that clearance of vegetation is only conducted on the area to be cultivated. Part II, section 4-12: felling conditions of trees' Section 68: export some of the valuable timber, Section 68 (4): restrictions on the use of certain trees species.

**Compliance:** The ISF sites do not allow unnecessary cutting down of trees for upholding sustainable environmental practices and in compliance with the provisions of this legislation. If rare flora specified in the Act is identified within the area, this will be conserved and protected. The ISF sites **are compliant** with this Act.

### **3.9 Solid Waste Regulation and Management Act No. 20 Of 2018**

An Act to provide for the sustainable regulation and management of solid waste; general and self-service solid waste services; the incorporation of solid waste management companies and define their statutory functions; the licensing and functions of solid waste service providers, operators and self-service solid waste providers and provide for their functions; the regulation, operation, maintenance and construction of landfills and other disposal facilities; the setting and approval of tariffs for management of solid waste and provision of solid waste services; and matters connected with, or incidental to, the foregoing.

**Relevance:** The Act is relevant to the ISF sites will generate waste, such as empty oil tins and other packaging waste and domestic waste arising from the workers on site and the communal kitchen that will have to be managed in accordance with the Act.

**Compliance:** Generally, the ISF sites have waste receptacles and provided bins in most sites. However, waste has to be segregated to ensure its properly managed. In addition, the ISF sites must obtained a Solid waste management permit and also engaged the council to dispose of the waste in accordance with the regulation. Therefore, the ISF sites are **partially compliant**.

### **3.10 The Water Resource Management Act, No. 21 of 2011**

This Act provides for the management, development, conservation, protection and preservation of the water resource and its ecosystem. Creates an enabling environment for adaptation to climate change; provides for the constitution,



functions and composition of Catchment Councils. Provide for international and Regional Corporation for equitable and sustainable utilization of shared water resources. This obtains extra importance in view of the fact that the contractor and the developer will be using water from perennial rivers. Applicable sections include:

Part V on Water quantity and quality management;

Section 46(2) states “A person, trade or industrial undertaking who or which, as the case may be, wishes to discharge any effluent into a water resource shall do so in accordance with the Environmental Management Act, 2011.”

Part IX, Permits for water use

Section 71, Activities where permits required: “Subject to this Act, a person who intends to use water for purposes specified under section sixty, other than for the domestic purposes specified under section seventy”

**Relevance:** The ISF sites have water Reservoirs and Dams where abstraction of raw water is conducted from a water resource.

**Compliance:** All the ISF sites visited provided documentations showing an assessment being done by WARMA officers. However, no permit has been obtained for the use of Boreholes or Abstraction of water from the Rivers or Streams. The ISF sites were **Non-Compliant to this Act.**



### 3.11 The Public Health Act of 1996

This Act provides for the prevention of diseases, drainage, latrine and disposal of sewerage and transport systems. The following Statutory Instruments (SI) under this Act are relevant to the project:

- Statutory Instrument No. 21, Public Health (Corona Virus) Infectious diseases of 2020 and;
- Statutory Instrument No. 22, Public Health (Infected Areas) (Corona Virus Disease 2019) of 2020.

**Relevance:** For the ISF sites, this will cover matters such as dust emission, noise pollution and solid waste management, levels of hygiene and standards of general working environment.

**Compliance:** The ISF sites, have been **compliant to this Act** as the dust suppression was being conducted, Sufficient toilets were provided within the farms.

### 3.12 Occupational Health and Safety Act No. 36 of 2010

The Occupational Health and Safety Act, No. 36 of 2010 establishes the Occupational Health and Safety Institute as a body corporate with perpetual succession and defines its composition, powers, and functions. The following sections are relevant to the ISF sites:

- Section 11. An employer of ten or more persons at any workplace shall establish a health and safety committee.
- Section 16. (1) Notwithstanding any other written law, an employer shall:
  - (a) Ensure, so far as is reasonably practicable, the health, safety and welfare of the employees of the employer at a workplace; and
  - (b) Place and maintain an employee in an occupational environment adapted to the employee's physical, physiological and psychological ability.

**Relevance:** The Act is relevant to the project as workers will be required on site and have to work in a health and safe environment.





**Compliance:** Most workers were in **full** Personal Protective Equipment. However, there was no documentation provide for training in fire-fighting and emergency response. There was no documentation provided as proof of medical check-up having been conducted on the employees. Therefore, the ISF sites **are partially compliant**.

### **3.13 National Heritage and Conservation Commission Act of 1989**

The act is responsible for the conservation of ancient, cultural and natural heritage, relics and objects of aesthetic, historical, prehistoric, archaeological or scientific interest by preservation, restoration, rehabilitation, reconstruction, adaptive use and good management.

- Section 28 (ci-vi): Entry on land for purposes of surveying
- Section 35: Destruction of Heritage
- Section 36: Actions to protect safety and avoid risk

**Relevance and Compliance:** The ISF sites **are compliant** as actual sites for the farming activities does not accommodate any features which have been confirmed to have cultural or heritage value.

### **3.14 Employment Code Act No. 3 of 2019**

An Act to regulate the employment of persons; prohibit discrimination at an undertaking; constitute the Skills and Labour Advisory Committees and provide for their functions; provide for the engagement of persons on contracts of employment and provide for the form and enforcement of the contracts of employment; provide for employment entitlements and other benefits; provide for the protection of wages of employees; provide for the registration of employment agencies; regulate the employment of children and young persons. The following sections are relevant to this project:

- PART III Employment relationship
- Part IV protection of wages
- PART V employment of young children and young persons



**Relevance:** The Act is relevant to the project, as persons will be required to be employed to work on the project.

**Compliance:** The ISF sites **are compliant** with the laid down procedures for employing people and effecting necessary conditions of service for the various categories of workers. The ISF sites have employed people to work on this project who are not minors i.e., below 18 years.

### **3.15 Energy Regulation Act No. 12 of 2019**

This is an Act that provides for the licensing of enterprises in the energy sector; and provides for the continued existence of the Energy Regulation board and re-defines its functions.

Part VIII, Section (49)(1)(c) requires that, *“A person shall not knowingly – sell, convey, or store petroleum or petroleum products in unauthorized premises.”*

**Relevance:** This Act is relevant as the ISF sites have acquired and stored some petroleum or petroleum products.

**Compliance:** The ISF sites are partially compliant. The storage facilities for fuel are lacking proper signage and some of the facilities are not concreted. Furthermore, the ISF sites do not have licenses to store/possess dangerous petroleum from the councils.

### **3.16 WORLD BANK ENVIRONMENTAL AND SOCIAL SAFEGUARD POLICIES**

Under World Bank (WB) Environmental and Social Safeguard Policies, projects are required to comprise measures for environmental and social sustainability including screening for potential negative impacts. Although the ISF Sites are expected to produce net benefits, certain activities during the project life cycle may have environmental and social impacts that can be resolved through adequate mitigation measures. The WB’s Environmental and Social Safeguard Policies are designed to help ensure that the ISF sites for Bank financing is environmentally and socially sustainable. These policies are designed to avoid, mitigate, or minimize the adverse environmental and social impacts of projects supported by Bank. The Bank’s operational policies are as follows:

- i. OP 4.01 Environmental Assessment



- ii. OP 4.04 Natural Habitats
- iii. OP 4.09 Pest Management
- iv. OP 4.10 Indigenous People
- v. OP 4.11 Physical Cultural Resources
- vi. OP 4.12 Involuntary Resettlement
- vii. OP 4.36 Forests
- viii. OP 4.37 Safety of Dams
- ix. OP 7.50 Projects on International Waterways
- x. OP 7.60 Projects in Disputed Areas

The WB Environmental and Social Safeguard Policies that are triggered by the ISF sites are further elaborated ahead.

### **3.16.1 OP 4.01: Environmental Assessment**

This operational policy requires Environmental Assessment (EA) for proposed projects to ensure that they are environmentally sound and sustainable. Under OP 4.01, the project will be screened and assigned one of the four (4) categories, each of which requires different levels of environmental assessment. These categories are as follows:

- **Category A:** A proposed project is classified as “Category A” if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.
- **Category B:** A proposed project is classified as “Category B” if it’s potential adverse environmental impacts on human populations or environmentally important areas including wetlands, forests, grasslands, and other natural habitats, are less adverse than those of “Category A” projects. These impacts are site-specific, few of them are irreversible, and in most cases mitigation measures can be designed more readily than for “Category A” projects.
- **Category C:** A proposed project is classified as “Category C” if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EIA action is required for a “Category C” project.



- **Category FI:** A proposed project is classified as “Category FI” if it involves investment of Bank funds through a financial intermediary in subprojects that may result in adverse environmental impacts.

**Relevance:** Preliminary assessments and reconnaissance survey indicates that the ISF Sites involves Development of Farms and Installation of Irrigation infrastructure fall under “Category B”.

**Compliance:** The ISF sites **are compliant** with OP 4.01 as the Bank requires Environmental Assessment (EA) of projects financed by World Bank to ensure that they are environmentally sound and sustainable, thus improving the decision making.

### 3.16.2 OP 4.09 Pest Management

This operational policy requires borrowers to manage pests that affect either agriculture or public health. The Bank supports a strategy that promotes the use of biological or environmental control methods and reduces reliance on synthetic chemical pesticides. In Bank financed projects the borrower addresses pest management issues in the context of the project’s environmental assessment.

**Relevance:** The Bank uses Various means to assess pest management in the country and support integrated pest management (IPM) and the safe use of agricultural pesticides economic and sector work sectoral or project-specific environmental assessments, participatory (IPM) assessments and investment projects and components aimed specifically at supporting the adoption and use of IPM. The ISF sites use various pesticides hence this operational policy is relevant to these sites.

**Compliance:** The ISF Sites are **partially compliant** to this OP 4.09. The IPM is being implemented in the sites however, the available of the IPM report on all the sites was not found.

### 3.16.3 OP 4.12: Involuntary Resettlement

The Bank experience indicates that involuntary resettlement under development projects, if left unaddressed, often gives rise to economic, social and environmental risks. People within the project area may face crisis when their livelihoods are lost



and relocated in different environments where their productive skills are less applicable. It can also lead to greater competition for resources and weakened social and institutional networks. This policy has been included by the WB to address all these risks, thereby protecting and safeguarding the people within the project development area.

**Relevance:** This policy will be triggered by ISF sites because the sites are commercial farms with a lot of hectares, this might disturb settlements, requiring land acquisition leading to temporary or permanent resettlement, and is likely to disrupt livelihood activities.

**Compliance:** It should be noted that the ISF sites are Institutional Farms owned by Government Institutions. These farms were strategically located in virgin areas with no settlements. Hence no persons or settlements were disturbed during the establishment of these Farms. The ISF sites are **all Compliant** with the OP 4.12.



## 4.0 AUDIT METHODOLOGY

The environmental audit was carried out through interviews with some key personnel from Irrigation Development Support Project (Mrs. Moono Munkombwe Kanjelesa-Safe Guard Specialist and Mr. Michael Kabwe-ISF Manger and Agrobusiness Specialist) and the five (5) Public Institution, namely; Zambia National Service (ZNS), Zambia Correctional Service (ZCS), Zambia Police Service (ZPS), Zambia College of Agriculture (ZCA-Mpika) and Zambia Center for Horticulture Training (ZCHT). Appendix 1 shows the Attendees sheet of the personnel interviewed during the Audit. The review of documentation and site inspections and observations of project areas were also conducted. The site visits were conducted by **28<sup>th</sup> August, 2023 to 6<sup>th</sup> September, 2023**.

The Environmental management requirements for the project sites were categorised in the Environmental Management Plan into general, bio-physical and socio-economic aspects, Determining compliance against the commitments in the Environmental Project Brief's, Zambia Environmental Management Agency requirements and World Bank requirements. All three categories were subjected to the audit. Further, the approval decision letters and have specific conditions.



**Figure 1** shows the meeting held with Officers In-Charge of the farms

### 4.1 Site Audits

The Audit Site visits were conducted at the following ISF sites, Zambia College of Agriculture, Zambia Correctional Services, Zambia National Service, Zambia Police



Service and Zambia Centre for Horticultural Training in Mpika, Mkushi, Lundazi, Kabwe, Luanshya, Serenje, Kafue and Lufwanyama Districts:

1. Zambia Correctional Services-Mukuyu Farms in Kabwe District (Irrigation Improvement Project)
2. Zambia Correctional Services-Chitwi Farm in Luanshya (Irrigation Improvement Project)
3. Zambia National Service-Munsakamba in Mkushi District (Land Irrigation Expansion project)
4. Zambia Correctional Services-Nansanga Farm in Serenje District (Irrigation Improvement Project)
5. Zambia National Service- Mpika Farm in Mpika District (Land Irrigation Expansion project)
6. Zambia National Service- Mpika Shed in Mpika District (Storage Shed Development Project)
7. Zambia Correctional Services- Lubambala Farm in Mpika District (Irrigation Improvement Project).
8. Zambia National Service-Lumezi Farm in Lumezi District (Land Irrigation Expansion project).

Attached as Appendix 3 are Google Maps detailing the Locations of the Audited facilities.





## **4.2 Documents Review**

The review of documents was conducted in order to verify information such as, compliance monitoring reports, Pest Management, records of quantities of wastes (solid and hazardous) generated, invoices for purchase of toxic chemicals, environmental policy documents, Integrated Pesticide Management Plan and other relevant documents. The Licenses such as Pesticide and Toxic Substances, Water Permits, Emissions License obtained from Government Institutions were also asked for from the Officers In-Charge at the ISF sites.

Other documents asked for during the audit visit included Emergency Preparedness and Response Plan, HIV Awareness, hazardous waste License and conditions.

## **4.3 Audit Interviews**

The environmental auditor focused the interviews with some key personnel from Irrigation Development Support Project and Officers In-Charge or their Deputies for the ISF sites. The questions asked were based on the following:

- i. Existing institutional processes and/or systems relevant to environmental management;
- ii. The environmental management practices being used;
- iii. Reviewing of some of the principles of the Integrated Pesticide Management Plan;
- iv. Finding out the number of beneficiaries employed on temporal and permanent basis due to increased scope of works resulting from the support received under IDSP;
- v. Finding out whether the ISF sites are compliant with commitments in the Environmental project brief, Zambia Environmental Management Agency requirements and World Bank requirements;
- vi. Finding out information related to any changes in livelihoods due to the employment;
- vii. Finding out the public institutions' ability to ensure sustainable environmental and social management at the sites; and
- viii. Finding out any positive impacts resulting from the support provided by the project.





*Figure 2 interviewing the Officer In-Charge for ZCS Lubambala in Mpika*

#### **4.4 Checklist Format**

The checklists were used for the collection of data and showing Compliances, Partial Compliances and Non-Compliances for Approved Decision letter conditions, Environmental Management Plans, Performance Standards, IDSP Pest Management Plan and License Conditions. Attached as Appendix 2.



## **5.0 STRUCTURE OF THE REPORT**

Having completed the audit on the ground, the audit checklists were completed and the audit notes were reviewed. The report provides an overview of the status of compliance to Decision letter conditions, Environmental Management Plans, Performance Standards, IDSP Pest Management Plan and License Conditions as well as any other observations made by the environmental auditor during interviews and site inspection. This report highlights key aspects that require action or improvement to be taken by the ISF sites.

The Audit report will be Structured as follows:

- 1.0 Introduction
- 2.0 Background
- 3.0 Scope and Purpose
- 4.0 Legislation
- 5.0 Audit Methodology
  - 5.1 Documents Review
  - 5.2 Site Inspection and Observations
  - 5.3 Audit Interviews
- 6.0 Structure Of The Report
- 7.0 Audit Findings
- 8.0 Conclusion
  - 8.1 Weak Points
  - 8.2 Strong Points
- 9.0 Recommendations

## **6.0 DESCRIPTION OF PHYSICAL, BIOLOGICAL AND SOCIO-ECONOMIC ENVIRONMENTAL FOR THE AUDITED SITES**

This section summarizes the physical, biological and Socio-Economic Environmental for the Facilities audited.

**6.1 Zambia National Service-Munsakamba in Mkushi District (Land Irrigation Expansion project)****a) Physical Environment****Climate**

The project site is located in agroecological zone II. The region receives about 800mm-1000mm of annual rainfall. The region covers about 42% of the country. The Mean monthly temperatures range between about 19 °C in the cold season to about 34 °C in the hot season when humidity is comparatively high. The mean temperature is usually around 26 °C.

**Topography**

The site is located on a flat land suitable for economical activity such as agriculture.

**Soil**

The majority of the soils are light coloured and sandy, and are typically developed on basement quartzites, schists and granitic rocks. These soils are often thick and fertile.

**Hydrology**

The nearest water body within the area is Munsakamba River which is located on the western boundary of the farm.

**b) Biological Environment****Fauna**

Human settlements around the project area have disturbed wildlife habitats. There is no wild life. However, common small rodents like mice, grasshoppers, lizards and ants were seen. Birds observed during the study include; Reed warbler, pied crow (*Corvus albus*), African pied wagtail (*Motacilla aguimp*). Butterflies and a few moth groups are the only insects that were observed.

**Insects**

<b>No.</b>	<b>Scientific Name</b>	<b>Common Name</b>
1.	<i>Anopheles Quadrimaculatus</i>	Malaria transmitting
2.	<i>Apis mellifera</i>	Bees
3.	<i>Formicidae spp</i>	Red ants
4.	<i>Ophion spp</i>	Wasps



### **Flora**

The site area exhibited low diversity of flora as the surrounding areas are agriculture land. However, the had few noticeable species included, both shrubs and trees. Observable species the *Brachystegia longifolia* (Musamba) and *Isorbelinia angolensis* (Mutobo –Bemba), and other herbaceous species.

### **c) Social-Economic Development**

Mkushi District is a district of Zambia, located in the Central Province. As of the 2022 Zambian Census, the district currently has a population of 208,635 people. The areas of interest is sparsely populated with agriculture as the main economic livelihood. The cultivation of crops include maize, soybeans and wheat.

Mkushi district has many private and public schools offering primary and Secondary level. Schools include Mkushi Secondary school, Tara School, Mochi private, Mkushi boma Secondary School, Chegelo, Munsakamba School, Mkushi Hillside academy, Kawama primary school among others. The nearest school to the project site is Musakamba Combined school. The notable socio-economic facilities near the site are DAPP Mkushi College of Agriculture and Munsakamba Combined School.

## **6.2 Zambia Correctional Services-Mukuyu Farms in Kabwe District (Irrigation Improvement Project)**

### **a) Physical Environment**

#### **Climate**

The area falls under Agro-Ecological Zone IIa. The average total annual rainfall in Kabwe is some 900mm. Most of the rainfall is between October and April, with December and January as the wettest months. The district's yearly temperature is 23.01°C (73.42°F) and it is -0.32% lower than Zambia's averages. The Mean minimum and maximum temperatures vary between 7.1°C and 18.4°C in June and between 22.9°C and 28.2°C in range between 22.9°C and 28.2°C in December.

#### **Topography**

Kabwe District is situated on the central plateau system at altitudes of 1,207m above sea level. The topography has a dominant gradient from southwest to northeast at



an average slope of approximately 4m/Km. the most dominant topographic features are swampy areas, which are found in different sizes and frequencies.

## **b) Biological Environment**

### **Flora**

The project site area exhibited medium diversity of flora. It is devoid of big trees, however, within the areas that have had little disturbances the predominant vegetation is Miombo woodland-*Brachystegia* and *Combretum* species as well as species of *acacia* tree commonly known as mimosa or munga.

### **Fauna**

Human activities around the project area have disturbed wildlife habitats. There is no wild life. However, common small rodents like *Mus musculus* mice, *Acridomorpha* grasshoppers, *Lacertilia* lizards could be seen within the project site during the site visit.

### **Avifauna**

Bird species observed in the area of interest include; Common Bulbul (*Pycnonotus barbatus*), House Sparrow (*Passer domesticus*), and pied crow (*Corvus albus*). Butterflies and a few moth groups are the only insects that were observed.

## **c) Social-Economic Development**

The site is located within the outskirts of Kabwe, where rain fed and irrigated agriculture using manual labor or animal traction are the primary livelihood activities. The main crops grown include maize, cotton, groundnuts, sweet potatoes, and beans, with minor production of millet and sorghum, primarily for household consumption. Cattle are mostly kept for sale and used as draft power. Other livestock in the zone include goats, pigs and poultry which are kept for sale or household consumption.

### **6.3 Zambia Correctional Services-Chitwi Farm in Luanshya (Irrigation Improvement Project)**

#### **a) Physical Environment**

##### **Climate**



The climate for the project is typical to the Luanshya climate characterized by yearly temperature of 23.63°C (74.53°F) and which is 0.3% higher than Zambia's averages. Luanshya typically receives about 98.88 millimetres (3.89 inches) of precipitation and has 135.63 rainy days (37.16% of the time) annually.

### **Topography**

Luanshya district is situated on the central plateau system at altitudes of 1,224m above sea level, characterized by a mix of plains and hills.

### **Soils**

The majority of the soils are brown-red clay loam soils. These soils are derived from limestone rocks and dolomite shales. These soils are often thick and fertile.

### **Hydrology**

The nearest water body within the area is Chitwi stream which is located on the eastern boundary of the farm.

## **b) Biological Environment**

### **Flora**

Human activity such as agriculture has led to the clearance of vegetation, few observable species were observed that include Miombo woodlands species such as *Brachystegia* species, *Acacia* species like *Acacia albida* and fruit bearing trees *Mangifera indica*, *Psidium guajava* and other indigenous fruit trees.

### **Fauna**

Human activities around the project area have disturbed wildlife habitats. There is no wild life. However, common include reed frog (*Hyperolius viridiflavus*), *Acridomorpha* grasshoppers, and *Lacertilia* lizards were observed.

### **Insects**

There are a diverse and abundant number of insects found in the project area. Insect life includes a variety of species of bees, wasp, caterpillars, crickets, grasshoppers, termites, mosquitoes, ants and moths.



### **c) Social-Economic Environment**

Agricultural production is the predominant source of income in Luanshya district. Crop production and livestock rearing take place at small scale and large-scale level. The project site is near agricultural farms as such the main source of income is production of variety of crops such as maize, soybeans. Fishing is another economic activity near the project site, basing on the proximity of a stream to the site.

The district has many schools and health centers. Health facilities are Luanshya rural clinic and Luanshya General hospitals. All services are not in close proximity to the site.

### **6.4 Zambia Correctional Services-Nansanga Farm in Serenje District (Irrigation Improvement Project)**

#### **a) Physical Environment**

##### ***Climate***

Serenje District receives an annual rainfall in the range of 500mm to 672mm with a mean annual rainfall of 586 mm, the months of December, January and February receiving over 70% of the rain for an entire year (Met. NWFR 2010). Mean monthly temperatures range between about 18 °C in the cold season to about 31 °C in the hot season when humidity is comparatively high. The mean temperature is usually around 20 °C.

##### ***Topography***

The site is located on a flat land suitable for economical activity such as agriculture.

##### ***Soil***

Generally, the site is typical of the Central Province soil profile having the clay- sandy top soils overlaying loamier clay sub soils and red lateritic soils deep the soil profile. The general soil profile is commonly thick in high elevation areas and gradually thins towards low elevation areas such as depressions or dambo wetlands.

#### **b) Biological Environment**

**Flora**

The project has been cleared of all vegetation and shows very low diversity of flora at the site. However, a number of densely populated patches of vegetation were observed with species such as the *Brachystegias* and other herbaceous species. Observed species included *Brachystegia longifolia*.

**Fauna**

Human activities around the project area have disturbed wildlife habitats. There is no wild life. However, the following species were observed;

<b>Common Name</b>	<b>Scientific name</b>
Yellow Toad	<i>Incilius luetkenii</i>
Damara Mole-rat	<i>Fukomys damarensis</i>
Flap-necked Chameleon	<i>Chamaeleo dilepsis</i>
Blue headed agama lizard	<i>Acanthocercus ugandaensis</i>

**c) Social-Economic Environment**

The site is located in farm lands of Serenje district, where agriculture farming of various crops the primary livelihood activities. The main crops grown include maize, groundnuts, sweet potatoes, cassava and beans, with minor production of millet and sorghum, primarily for household consumption. Livestock rearing is another economic activity; these include goats, pigs and poultry which are kept for sale or household consumption.

The site has scattered houses and few business enterprises for trading of various equipments, materials and food amenities.

## **6.5 Zambia Correctional Services- Lubambala Farm in Mpika District (Irrigation Improvement Project).**

**a) Physical Environment****Topography**





The project site is located near the railway line at an altitude of 1346m. The terrain features high flat land with a very gentle northeast slope dipping towards Southern extension of the project site; however, the site appears almost high flat to the human eye.

### **Climate**

Mpika lies in the medium rainfall belt of Zambia with average annual rainfall and has 142.34 rainy days (39.0% of the time) annually. Mpika District has a tropical type of climate with mean annual temperatures of 21.39°C. Prevailing winds are generally south-eastern to North-western direction. Most of the rains fall within the wettest months of the year from December to March.

### **Hydrology**

The nearest water body to the site is Lubambala stream on the western side of the farm.

### **Soil**

The soils in the project area are generally red lateritic soils overlaid with sandy soils. The general soil profile is commonly thick in high elevation areas and gradually thins towards low elevation areas such as depressions or dambo wetlands.

## **b) Biological Environment**

### **Fauna**

Human activities around the project area have disturbed wildlife habitats. There is no wild life. However, common small rodents like mice, grasshoppers, lizards, and frogs were seen. Beetles, Butterflies and a few moth groups are the only insects that were observed. There is NO rare or endangered fauna in the project area.

### **Flora**

The site area exhibited low diversity of flora as the surrounding areas is used for farming. However, the areas that have had little disturbances where there are are remnant *miombo* tree species and other shrubs. Some of the observed species near the sites included the *Brachystegia longifolia* (Musamba), *Isorbelinia angolensis* (Mutobo –Bemba), and other herbaceous species. The species observed within the site include fruit trees such as *Mangifera indica*.



### **c) Social-Economic Environment**

The project site is near the railway station about 5 km away, as such commercial activities such as trading is common near the area. The informal sector trading is common such as selling of vegetables, fruits, house ware, second hand clothes, furniture, carpenters and tailors offering the full range of basic essentials. Agriculture is another source of livelihood, crops grown include maize, groundnuts, sweet potatoes and pumpkins.

## **6.6 Zambia National Service- Mpika Farm and Storage in Mpika District (Land Irrigation Expansion project)**

### **a) Physical Environment**

#### ***Topography***

The project site is located near the railway line at an altitude of 1346m. The terrain features high flat land with a very gentle northeast slope dipping towards Southern extension of the project site; however, the site appears almost high flat to the human eye.

#### ***Climate***

Mpika lies in the medium rainfall belt of Zambia with average annual rainfall and has 142.34 rainy days (39.0% of the time) annually. Mpika District has a tropical type of climate with mean annual temperatures of 21.39°C. Prevailing winds are generally south-eastern to North-western direction. Most of the rains fall within the wettest months of the year from December to March.

#### ***Hydrology***

The nearest water body to the site is Lukwita stream on the western side of the farm.

#### ***Soil***

The soils in the project area are generally red lateritic soils overlaid with sandy soils. The general soil profile is commonly thick in high elevation areas and gradually thins towards low elevation areas such as depressions or dambo wetlands.

### **b) Biological Environment**

#### ***Flora***



The area in particular exhibited very low diversity of vegetation. However, the surrounding area had observable species that were dominated by Miombo woodlands such as *Brachystegia spiciformis* (Musasa) and *Jubernadia globiflora* (Munondo).

### **Fauna**

Human activities around the project area have disturbed wildlife habitats. There is no existence of wildlife on the site. However, common small rodents like mice, grasshoppers, lizards, and frogs were seen. Butterflies, bees and a few moth groups are the only insects that were observed.

### **c) Social-Economic Environment**

The main source of livelihood near the project site is informal trading and small-scale farming of various crops such as maize.



## **6.7 Zambia National Service-Lumezi Farm in Lumezi District (Land Irrigation Expansion project).**

### **a) Physical Environment**

#### ***Topography***

The area is located at an elevation of 1219 m above sea level. The area is relatively flat .

#### ***Climate***

The climate for the project area is typical of Agro-Ecological Zone iib, which is subtropical and is characterized by three distinct seasons. These are the cool-dry season ranging from May to August, the hot-dry season ranging from August to November and the rainy season ranging from November to April.

#### ***Soils***

The project area has mainly soils that are loamy-sand or sand Alfisols, interspersed with clay.

### **b) Biological Environment**

#### ***Fauna***

Human settlements around the project area have disturbed wildlife habitats. There is no wild life. However, common small rodents like mice, grasshoppers, lizards, and frogs were seen. Bettles, Butterflies and a few moth groups are the only insects that were observed. There is NO rare or endangered species of fauna in the project area.

#### ***Flora***

The site area exhibited low diversity of flora as the surrounding areas is used for farming. The species observed within the site included fruit trees such as *Mangifera indica* and *Psidium guajava*.

### **c) Social-Economic Environment**

The main source of livelihood near the project site is small subsistence farming of crops such as maize. Informal trading is a common commercial activity that includes trading of various house wares as well as food crops grown.



## 7.0 AUDIT FINDINGS

This section presents the findings of the audit exercise with regards to compliance to the conditions outlined in the decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies as well as some of the recommendations to be considered in order to be fully compliant.

### Definitions

The reporting of results from the audit is determined based on the following definitions.

**Compliance (C)**– The requirements of the conditions have been met. This includes meeting all requirements with respect to decision letters conditions, ESMP conditions, Integrated Pesticide Management Plan and World Bank standards.

**Non-compliance (NC)** - The failure to meet any or all of the specific requirements of the condition would result in a non-compliance.

**Partial compliance (PC)** – The requirements of the conditions have neither been met nor not met. This implies that some requirements of the conditions have been met but not fully while some components of the condition have not been met.

**Not Applicable**- refers to areas where construction or any other activities have not yet commenced.

**Observation** – These are observations made that are not directly related to the decision letters conditions or EMP but that have the potential to negatively impact the environment.

#### 1. **Zambia Correctional Services-Mukuyu Farms in Kabwe District** (Irrigation Improvement Project)

##### a) **Description of Key Characteristics of the site and Investments**

The Zambia Correction Service Mukuyu Farm is located 10km away from the junction of Great North Road and Mukobeko Road. The farm has about an extension of 300ha of land under Irrigation with Wheat, Maize and



Soyabeans crops. The farm has had over 20 boreholes drilled and only 5 out of the 20 boreholes are operational.

The vegetation around the farm has been cleared to pave-way for the cultivation of the farm. Currently, the farm has offices, a warehouse and guard room on site. The farm has a water reservoir used for irrigation in the fields and currently 6 pivots are being used at the farm and electricity that is used is hydropower.

### Investments

The Farm added investments from the IDSP support project includes 6 centre irrigation pivots, new Transformer, Upgrade of power from single phase 11kv to 33kv. The table below shows the breakdown of the cost.

*Table 1 Investment break down for Mukuyu Farm*

No.	Description of the Investment	Total Cost USD\$
1.	Six (6) Centre Pivots	1.05million
2.	Transformer and upgrade of power from 11kv to 33kv	76,923.07
Grand Total		<b>\$1.3million</b>

#### b) Review of relevant documentation

- A review of relevant documents was conducted and following were requested, Environmental Project Brief Reports, Decision Letters, Any Licences acquired from Relevant Authorities, Integrated Pesticide Management Plan and Detailed Implementation Pesticide Management Plan.
  - The Zambia Correction Service Mukuyu Farm did not have these documents present at the farm. However, it was observed that documentations about the farm are found at the Commissioner's Office in Lusaka.
  - The water permits have not been acquired from Water Resources Management Agency. ZCS Mukuyu farm does not have a permit for the Commercial Boreholes that are used for Irrigation.
  - Licenses have not been acquired from Zambia Environmental Management Agency for Storage of Pesticides and Chemicals.
  - Bi-annual report for ground water monitoring have not been submitted to ZEMA.
  - The site does not have the Integrated Pest Management Plan and a detailed Pesticide Implementation Plan.
  - Documentations of results for the evaluation, management and success of pest management were not provided.



c) **Audit Site Visit and Components:** The audit site visits were conducted at several strategic components of the farm project and the following are the summarized findings:

- Training for the Integrated Pest Management Plan for the staff at the farm was conducted in 2019 and 2018. However, the current staff at the farm have not been trained.
- The Water Reservoirs were properly lined with an HDPE to avoid contamination of the water.
- Crop rotation is being implemented at the farm with Wheat/Maize and Soyabeans crops.
- Some machinery parts were observed near the pump house not properly stored in the workshop hence posing a risk of contamination of the soil.
- The Chemical storage facility is kept under lock and key. However, the chemical storage facility entrance is not labelled to show that there are different type of Hazardous Materials.
- It was found that the institutional processes relating to environmental management are handled by higher officers in Lusaka, hence depriving the staff at the Farm.
- The Environmental management practices within the farm are partially being followed at the farm as some of the required practices such as proper disposal of pesticide containers is not followed.
- The farm is not conducting regular monitoring of the soil, surface and underground water within the farm to check for any contamination levels.
- Vegetation clearance has been restricted to areas only meant for cultivating.
- Compensatory reforestation programs have not been identified or implemented at the Farm.
- Used pesticide containers are burnt at the farm and buried to prevent inmates not to use them.
- Some workers in the farm were not in fully Proper Protective Proper Equipment.
- The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
- Dust suppression not conducted on all the roads within the farm.





*Figure 3 shows the Chemical Warehouse that is not labelled and Machinery parts not properly stored*

d) **Benefits acquired after IDSP support for Mukuyu Farm**

- The Farm with IDSP support has increased the staff levels from 10 to 41 people now working at the farm.
- The community around the Mukuyu Farm has benefitted from the IDSP support through part time employment during the Harvest periods. The acquisition of the pivots have increased the crop production of Soya Beans and Maize. During harvesting periods about **100 people, 47% male and 53% Female** are employed to help in picking of the soyabeans that normally shatters during the harvesting with a combined Harvester.
- Funding from IDSP through World Bank has encouraged skill transfers to a number of staff and inmates in the operations of the pivots that have been acquired.
- About 300ha of land has been extended for production due to the Irrigation system that has been provided.
- The Farm is now growing wheat due to the Irrigation system acquired, the 6 pivots are all being used.
- Mukuyu farm benefitted a plough used for the cultivation of the fields.
- The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is allowed to collect the left over wheat or Maize which is very useful for their Livestock.





Figure 4 shows the Plough and Centre Pivots some of the benefits from the IDSP

e) **Part Time Laborers/Casuals**

The ZCS Mukuyu Farm employs within the surrounding community about 100 Laborers to help in the harvesting period to help in bagging and picking soyabeans in the fields. The following were noted during the Audit regarding the part time workers:

- It was observed that the Farm management pays the laborers/casual workers either daily or weekly according to the amount of work within the Farm.
- It was noted during interviews with the farm staff that in an event of a dispute regarding payment of wages, a grievance regress system is in place where the labourer has to report to the farm supervisor and record their complaint in the complaint book. At the time of the audit no complaint was reported or recorded involving non-payment of their wages.
- The Farm Management were found **to be compliant** regarding payment of wages to the Labourers.

f) **Compliances/Non-compliances/Partial Compliance**

The ZCS Mukuyu Farm audit was subjected to checklists that followed the Decision Letter conditions, Decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The checklists have been attached under appendix 1, below is the summary of the compliance levels for the Mukuyu farm.

Table 2 shows the Compliance Levels of ZCS Mukuyu Farm

Document	Compliant	Partial Compliant	Non-Compliant
Decision Letter Conditions	11	4	3
ESMP Commitment	16	3	3



<b>World Bank Operational Policies</b>	7	3	0
<b>Pest Management Plan Commitment</b>	16	3	4
<b>World bank operational policy (OP 4.09 – pest management commitment)</b>	5	1	0
<b>Total</b>	<b>55</b>	<b>14</b>	<b>10</b>

## 2. Zambia Correctional Services-Chitwi Farm in Luanshya (Irrigation Improvement Project)

### a) Description of Key Characteristics of the site and Investments

The Zambia Correction Service Chitwi Farm is located 8.5km away from the Luanshya Business District Centre on the southern part of the town in Chitwi area. The farm is within the Chitwi Open Prison where the prisoners are taught farming skills. The farm has about an extension of 155ha of land under Irrigation with Wheat, Maize and Soyabeans crops. The farm has had 2 operational boreholes and a weir where water is stored for irrigation purposes.

The vegetation around the farm has been cleared to pave-way for the cultivation of the farm. Currently, the farm has an open prison, offices, store room and guard room on site. The farm has a water reservoir used for irrigation in the fields and currently 3 pivots are being used at the farm and electricity that is used is hydropower.

### Investment

The Farm added investments from the IDSP support project includes 4 centre irrigation pivots, Roller Compactor, Bulldozer, Upgrade of power from single phase 11kv to 33kv. The table below shows the breakdown of the cost.

*Table 3 shows the Investment break down of Chitwi Farm*

No.	Description of the Investment	Total Cost USD\$
1.	Four (4) Centre Pivots	869,000
2.	Transformer and upgrade of power from 11kv to 33kv	89,743
3.	Roller Compactor	240,000
4.	Bulldozer	330,000
<b>Grand Total</b>		<b>\$1.53million</b>

### b) Review of relevant documentation

- A review of relevant documents was conducted and following were requested, Environmental Project Brief Reports, Decision Letters, Any Licences acquired from Relevant Authorities, Integrated



Pesticide Management Plan and Detailed Implementation Pesticide Management Plan.

- The Zambia Correction Service Chitwi Farm did not have these documents present at the farm. However, it was observed that documentations about the farm are found at the Commissioner's Office in Lusaka.
- The Officer In-Charge mentioned that a Water permit was acquired and has been filed at the Headquarters in Lusaka. However, no evidence was shown.
- Bi-annual report for ground water monitoring have not been submitted to ZEMA.
- Licenses have not been acquired from Zambia Environmental Management Agency for Storage of Pesticides and Chemicals.
- The site does not have the Integrated Pest Management Plan and a detailed Pesticide Implementation Plan.
- The Farm did not have Compensatory reforestation programs or implemented plans for Reforestation within the area.
- Documentations of results for the evaluation, management and success of pest management were not provided.

c) **Audit Site Visit and Components:** The audit site visits were conducted at several strategic components of the farm project and the following are the summarized findings:

- The two pivots provided by the IDSP support were found to be operational at the time of the visit.
- The Weir on the stream has a spillway which is allowing water to flow freely back to the stream.
- Vegetation was seen growing on the Weir wall and along the stream which a perennial stream.
- The Officers found at Chitwi farm have not been trained regarding the Integrated Pest Management Plan.
- The Water Reservoirs were properly lined with an HDPE to avoid contamination of the water. However, some leaks were observed and the water reservoir is being repaired.
- Crop rotation is being implemented at the farm with Wheat/Maize and Soyabeans crops.
- The Chemical storage facility is kept under lock and key. However, the chemical storage facility entrance is not labelled to show that there are different type of Hazardous Materials.
- Chemicals in the storage facility were not placed on pallets and were mixed which can pose a danger incase of fire.



- The Chemical storage facility did not have a fire Extinguisher to help in the case of fire.
- It was found that the institutional processes relating to environmental management are handled by higher officers in Lusaka, hence depriving the staff at the Farm.
- The Environmental management practices within the farm are partially being followed at the farm as some of the required practices such as proper disposal of pesticide containers is not followed.
- The farm was found to be disposal empty chemical containers through burning and burying to prevent inmates not to reuse them. This is not an Environmentally and friendly way of disposal.
- The farm is not conducting regular monitoring of the soil, surface and underground water within the farm to check for any contamination levels.
- Vegetation clearance has been restricted to areas only meant for cultivating.
- Compensatory reforestation programs have not been identified or implemented at the Farm.
- Some workers in the farm were not in fully Proper Protective Proper Equipment.
- The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
- Dust suppression not conducted on all the roads within the farm.
- The Farm staff receive HIV/AIDS awareness 3 times a month from USAID.
- The standby Generator is properly placed on a concrete surface. However, a bund wall is required to be installed incase of fuel spillage.
- A drainage around the farm boundary is recommended to be constructed to avoid water pollution.
- The farm lacks an empty chemical container disposal site which should be approved by Zambia Environmental Management Agency.





Figure 5 shows the spillway allowing water to go back to the stream and storage facility requiring pallets

**d) Benefits acquired after IDSP support for Chitwi Farm**

- The Farm with IDSP support has increased the staff levels from 15 to 32.
- The community around the Chitwi Farm has benefitted from the IDSP support through part time employment during the Harvest periods. The acquisition of the pivots have increased the crop production of Soya Beans and Maize. During harvesting periods about **100 people, 47% male and 53% Female** are employed to help in picking of the soyabeans that normally shatters during the harvesting.
- Chitwi farm has increased its Irrigation hectarage from 20ha to 310ha which is under Irrigation, this has lead to increased production. The two pivots provided by the IDSP were found to be functional at the time of the visit.
- The Farm staff and inmates are now learning how to operate the machine such as pivots at the farm. Hence, **skill transfer has been increased at the farm.**
- The community is now benefiting from the water that is stored within dam by **using the water for gardening and fishing.** The extension of the weir was made from the funding provided by the IDSP support project, making the dam to collect more water which the community is using for their animals and gardening.
- The community around the farm has also benefitted from the Electricity that has been installed at the farm, making it easy for them to connect from the transformer that was installed at the farm.



- The millers in Luanshya District have readily available wheat, soyabeans and Maize that Chitwi Farm supplies to their warehouses.
- The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is allowed to collect the left over wheat or Maize which is very useful for their Livestock.
- The farm is also encouraging skill transfer and development to a number of staff in terms of machinery, this includes some inmates.



Figure 6 shows the community surrounding the farm benefiting from the water and are conducting gardening

#### **e) Part Time Laborers/Casuals**

The ZCS Chitwi Farm employs within the surrounding community about 100 Laborers to help in the harvesting period to help in bagging and picking soyabeans in the fields. The following were noted during the Audit regarding the part time workers:

- It was observed that the Farm management pays the laborers/casual workers either daily or weekly according to the amount of work within the Farm.
- It was noted during interviews with the farm staff that in an event of a dispute regarding payment of wages, a grievance regress system is in place where the labourer has to report to the farm supervisor and record their complaint in the complaint book. At the time of the audit no complaint was reported or recorded involving non-payment of their wages.
- The Farm Management were found **to be compliant** regarding payment of wages to the Labourers.

#### **f) Compliances/Non-compliances/Partial Compliance**

The ZCS Chitwi Farm audit was subjected to checklists that followed the Decision Letter conditions, Decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The checklists have been attached under appendix 1, below is the summary of the compliance levels for the Chitwi farm.



Table 4 shows the Compliance Levels of ZCS Chitwi Farm

Document	Compliant	Partial Compliant	Non-Compliant
Decision Letter Conditions	10	5	3
ESMP Commitment	16	2	4
World Bank World Bank Operational Policies	7	3	0
Pest Management Plan Commitment	16	3	4
World bank operational policy (OP 4.09 – pest management commitment)	5	1	0
<b>Total</b>	<b>54</b>	<b>14</b>	<b>11</b>

### 3. Zambia National Service-Musakamba in Mkushi District (Land Irrigation Expansion project)

#### a) Description of Key Characteristics of the site and Investments

The Zambia National Service Musakamba Farm is located 9km away from the Mkushi town Business Centre on the North-western part of Mkushi District. The notable land marks are DAPP Mkushi College of Agriculture and Munsakamba Combined School. The farm has five (5) Centre Pivots and a Combined Harvester that have been supported by the IDSP project. The farm has Wheat, Maize and Soya Beans under Irrigation. The uses water from the dam on the Munsakmba stream which is located on the western boundary of the farm.

The vegetation around the farm has been cleared to pave-way for the cultivation of the farm. Currently, the farm has offices, a warehouses, a Clinic, Staff houses, workshop and guard room on site.

#### Investment

The Farm added investments from the IDSP support project includes 5 centre irrigation pivots and a combined harvester. The table below shows the breakdown of the cost.

Table 5 shows the investment cost break down for Munsakamba Farm

No.	Description of the Investment	Total Cost USD\$
1.	Four (4) Centre Pivots	1.29million
2.	Transformer and upgrade of power from 11kv to 33kv	440,000
<b>Grand Total</b>		<b>\$1.73million</b>





b) **Review of relevant documentation**

- A review of relevant documents was conducted and following were requested, Environmental Project Brief Reports, Decision Letters, Any Licences acquired from Relevant Authorities, Integrated Pesticide Management Plan and Detailed Implementation Pesticide Management Plan.
  - The Zambia National Service Musakamba Farm was found to have permit from Water Resources Management Agency for the water abstraction.
  - The farm did not have documents present at the farm such as Decision Letter, Integrated Pesticide Management Plan, and a detailed Implementation Pesticide Management Plan. It was mentioned that documentations about the farm are found at the ZNS headquarters in Lusaka.
  - Bi-annual report for ground water monitoring have not been submitted to ZEMA.
  - Licenses have not been acquired from Zambia Environmental Management Agency for Storage of Pesticides and Chemicals.
  - The site does not have the Integrated Pest Management Plan and a detailed Pesticide Implementation Plan.
  - The Farm did not have Compensatory reforestation programs or implemented plans for Reforestation within the area.

c) **Audit Site Visit and Components:** The audit site visits were conducted at several strategic components of the farm project and the following are the summarized findings:

- The farm production capacity has increased due to the support of the IDSP support. Crops such as Soyabeans, Wheat and Maize are being grown.
- The two pivots provided by the IDSP support were found to be operational at the time of the visit.
- ZNS Musakamba farm has a dam that has a valve and spillway. Environmental flows were observed and the dam allows water to join back to the Musakamba stream.
- The Combined Harvester that was provided by the IDSP was found to be functional.
- Chemical storage facility was found not to have proper hazardous signage on the entrance of the facility. The chemicals are kept under lock and key.
- Chemicals found within the storage were not placed on pallets to allow proper ventilations.





- Used oil in the farm workshop area was found not to be properly stored. Machinery parts were also found in the workshop not having been properly packed.
- The temporal fuel facility within the farm does not have a concrete surface. No hazardous signage were observed in the fuel facility and the storage area did not have a spill kit and a fire extinguisher.
- Crop rotation is being implemented at the farm with Wheat/Maize and Soyabeans crops.
- It was found that the institutional processes relating to environmental management are handled by higher officers in Lusaka, hence depriving the staff at the Farm.
- The Environmental management practices within the farm are partially being followed at the farm as some of the required practices such as proper disposal of pesticide containers is not followed.
- The farm was found to be disposal empty chemical containers through burning and burying to prevent inmates not to reuse them. This is not an Environmentally and friendly way of disposal.
- The farm is not conducting regular monitoring of the soil, surface and underground water within the farm to check for any contamination levels.
- Vegetation clearance has been restricted to areas only meant for cultivating.
- Compensatory reforestation programs have not been identified or implemented at the Farm.
- Some workers in the farm were not in fully Proper Protective Proper Equipment.
- The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
- Dust suppression not conducted on all the roads within the farm.
- The Farm staff receive HIV/AIDS awareness through the Clinic within the farm.



Figure 7 shows the Used oil not properly stored and the surface of the fuel storage facility that is not concreted

**d) Benefits acquired after IDSP support for Musakamba Farm**

- The purchasing of a combined harvester and Centre pivots has made ZNS Musakamba farm to increase in production.
- The community around the Musakamba Farm has benefitted from the IDSP support through part time employment and about 50-80 casual workers are engaged during the harvest period for each of the crops. The acquisition of the pivots have increased the crop production of Soya Beans and Maize hence the need to engage the community on a part time basis.
- The farm has increased its staff levels from IDSP support has increased the staff levels from 25 to 40.
- The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is allowed to collect the left over wheat or Maize which is very useful for their Livestock.
- The farm is also encouraging skill transfer and development to a number of staff in terms of machinery.
- The ZNS Farm is encouraging Skill Development through training of students from Mpika College of Agriculture.



*Figure 8 shows the combined Harvester at the farm*



*Figure 9 shows the casuals employed from the community*





*Figure 10 shows the Centre Pivot in fully operational*

#### **e) Part Time Laborers/Casuals**

The ZNS Farm employs within the surrounding community about 50-80 Laborers to help in the harvesting period to help in bagging and picking soyabeans in the fields. The following were noted during the Audit regarding the part time workers:

- It was observed that the Farm management pays the laborers/casual workers either daily or weekly according to the amount of work within the Farm.
- It was noted during interviews with the farm staff that in an event of a dispute regarding payment of wages, a grievance regress system is in place where the labourer has to report to the farm supervisor and record their complaint in the complaint book. At the time of the audit no complaint was reported or recorded involving non-payment of their wages.
- The Farm Management were found **to be compliant** regarding payment of wages to the Labourers.

#### **f) Compliances/Non-compliances/Partial Compliance**

The ZNS Musakamba Farm audit was subjected to checklists that followed the Decision Letter conditions, Decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The



checklists have been attached under appendix 1, below is the summary of the compliance levels for the ZNS Musakamba.

*Table 6 shows the Compliance Levels of ZNS Musakamba Farm*

Document	Compliant	Partial Compliant	Non-Compliant
<b>Decision Letter Conditions</b>	10	5	3
<b>ESMP Commitment</b>	20	4	0
<b>World Bank World Bank Operational Policies</b>	7	3	0
<b>Pest Management Plan Commitment</b>	16	3	4
<b>World bank operational policy (OP 4.09 – pest management commitment)</b>	5	1	0
<b>Total</b>	<b>54</b>	<b>14</b>	<b>11</b>

#### **4. Zambia Correctional Services-Nansanga Farm in Serenje District (Irrigation Improvement Project)**

##### **a) Description of Key Characteristics of the site and Investments**

The Zambia Correction Service Nansanga Farm is located 58km away from the Serenje town Business Centre on the western part of Serenje District. The notable land marks are Nansanga Plantation, and Silverland Farms located on the western and southern part of the Farm. The farm is within the newly opened Nansanga Open Prison where the prisoners are taught farming skills. The farm has 9 pivots installed on the farm, currently farm is growing wheat under irrigation and Maize.

The vegetation around the farm has been cleared to pave-way for the cultivation of the farm. Currently, the farm has offices, a warehouse, a Clinic, Staff houses, workshop and guard room on site.

##### **Investment**

The Farm added investments from the IDSP support project includes 9 centre irrigation pivots, 40 ton truck, construction of a warehouse, Bush clearing, fuel and supply of power to the farm. The table below shows the breakdown of the cost.

*Table 7 shows the investment break down of the Nansanga Farm*

No.	Description of the Investment	Total Cost USD\$
1.	Nine (9) Centre Pivots	2.0million



2.	Construction of the Warehouse	130,000
3.	40 ton Truck	120,000
4.	Bush Clearing	350,000
5.	Supplying of power to the farm	180,000
6.	Fuel	8,000
<b>Grand Total</b>		<b>\$2.79million</b>

b) **Review of relevant documentation**

- A review of relevant documents was conducted and following were requested, Environmental Project Brief Reports, Decision Letters, Any Licences acquired from Relevant Authorities, Integrated Pesticide Management Plan and Detailed Implementation Pesticide Management Plan.
  - The farm did not have documents present at the farm such as Decision Letter, Integrated Pesticide Management Plan, and a detailed Implementation Pesticide Management Plan. It was mentioned that documentations about the farm are found at the ZCS headquarters in Lusaka.
  - Bi-annual report for ground water monitoring have not been submitted to ZEMA.
  - Licenses have not been acquired from Zambia Environmental Management Agency for Storage of Pesticides and Chemicals.
  - The site does not have the Integrated Pest Management Plan and a detailed Pesticide Implementation Plan.
  - The Farm did not have Compensatory reforestation programs or implemented plans for Reforestation within the area.
  - Documentations of results for the evaluation, management and success of pest management were not provided.
  - The Officer In-charge mentioned that a permit was acquired and has been filed at the Headquarters in Lusaka. However, no evidence was shown.

c) **Audit Site Visit and Components:** The audit site visits were conducted at several strategic components of the farm project and the following are the summarized findings:

- The Farm centre pivots provided by the IDSP support were found to be operational at the time of the visit.
- Shed Storage facility has been completed and raw materials and construction materials are been stored in the storage facility. The materials in the shed require proper organising to ensure that seeds, construction materials and other items.
- Buffer Zone within the farm for fire management have been created within the farm.



- Vegetation clearance was found to be cleared only in areas where cultivation is being done.
- The Officers found at Nansanga farm have not been trained regarding the Integrated Pest Management Plan.
- The fuel storage tank was placed on a concrete surface but does not have a bund wall to prevent spillages to the ground.
- The farm has no workshop, hence servicing of the machinery is done in Serenje District.
- Crop rotation is being implemented at the farm with Wheat/Maize and Soyabeans crops.
- The farm has proper access road that lead to the various field within the farm.
- Dust suppress is rarely done within the access because the Centre pivots during irrigation have excess water that is sprinkled within the access road.
- The Farm has a temporary Chemical storage facility. This facility did not have hazardous signage on the entrance and no fire extinguisher was observed within the facility.
- Chemicals in the storage facility were not placed on pallets and were mixed which can pose a danger in case of fire.
- It was found that the institutional processes relating to environmental management are handled by higher officers in Lusaka, hence depriving the staff at the Farm.
- The farm was found to be disposing empty chemical containers through burning and burying to prevent inmates not to reuse them. This is not an Environmentally and friendly way of disposal.
- The Environmental management practices within the farm are partially being followed at the farm as some of the required practices such as proper disposal of pesticide containers is not followed.
- The farm is not conducting regular monitoring of the soil, surface and underground water within the farm to check for any contamination levels.
- The farm has an Emergency Vehicle which is fully equipped with first aid.
- Compensatory reforestation programs have not been identified or implemented at the Farm.
- Some workers in the farm were not in fully Proper Protective Proper Equipment.
- The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
- The Farm staff receive HIV/AIDS awareness from the clinic staff within the farm.





- The farm lacks an empty chemical container disposal site which should be approved by Zambia Environmental Management Agency.



Figure 11 shows the Fuel tank without a bund wall and the Emergency Vehicle found at the farm

**d) Benefits acquired after IDSP support for Nansanga Farm**

- The Farm with IDSP support has increased the staff levels from 5 to 60.
- Nansanga farm has increased its Irrigation hectareage from 50ha to 3000ha which is under Irrigation, this has lead to increased production. The two pivots provided by the IDSP were found to be functional at the time of the visit.
- There been increase in production from 3000bags of wheat to 4800bags.
- The community around the Nansanga Farm has benefitted from the IDSP support through part-time employment during the Harvesting periods. The acquisition of the pivots have increased the crop production of Maize. During harvesting periods about **100 people, 47% male and 53% Female** are employed to help in bagging the maize.
- The Farm staff and inmates are now learning how to operate the centre pivots at the farm. Hence, **skill transfer** has been increased at the farm. The farm is also encouraging skill transfer and development to a number of staff in terms of machinery, this includes some inmates.





- The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is allowed to collect the left over wheat or Maize which is very useful for their Livestock.



Figure 12 shows the storage shed and Clinic

#### e) Part Time Laborers/Casuals

The ZCS Nansanga Farm employs within the surrounding community about 100 Laborers to help in the harvesting period to help in bagging and picking soyabeans in the fields. The following were noted during the Audit regarding the part time workers:

- It was observed that the Farm management pays the laborers/casual workers either daily or weekly according to the amount of work within the Farm.
- It was noted during interviews with the farm staff that in an event of a dispute regarding payment of wages, a grievance regress system is in place where the labourer has to report to the farm supervisor and record their complaint in the complaint book. At the time of the audit no complaint was reported or recorded involving non-payment of their wages.
- The Farm Management were found **to be compliant** regarding payment of wages to the Labourers.

#### f) Compliances/Non-compliances/Partial Compliance

The ZCS Nansanga Farm audit was subjected to checklists that followed the Decision Letter conditions, Decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The checklists have been attached under appendix 1, below is the summary of the compliance levels for the ZCS Nansanga.



Table 8 shows the Compliance Levels of ZCS Nansanga Farm

Document	Compliant	Partial Compliant	Non-Compliant
Decision Letter Conditions	9	6	3
ESMP Commitment	15	3	3
World Bank World Bank Operational Policies	7	3	0
Pest Management Plan Commitment	15	4	3
World bank operational policy (OP 4.09 – pest management commitment)	4	0	2
<b>Total</b>	<b>50</b>	<b>16</b>	<b>11</b>

## 5. Zambia National Service- Mpika Farm in Mpika District (Land Irrigation Expansion project)

### a) Description of Key Characteristics of the site and Investments

The Zambia National Service Mpika Farm is located 7km from the junction of ZNS gravel Road and Great North Road. The farm has five (5) Centre Pivots and a Storage Shed, Clinic and Staff houses near the farm. The farm has grows Wheat, Maize and Soya Beans under Irrigation. The farm has a pump station at the Lukwita stream and the water is used in the irrigation of the crops. The vegetation around the farm has been cleared to pave-way for the cultivation of the farm.

### Investment

The Farm added investments from the IDSP support project includes 3 centre irrigation pivots. The table below shows the breakdown of the cost.

Table 9 shows the investment break down of the ZNS Mpika Farm

No.	Description of the Investment	Total Cost USD\$
1.	Three (3) Centre Pivots	3.87million
<b>Grand Total</b>		<b>\$3.87million</b>

### b) Review of relevant documentation

- A review of relevant documents was conducted and following were requested, Environmental Project Brief Reports, Decision Letters, Any Licences acquired from Relevant Authorities, Integrated Pesticide Management Plan and Detailed Implementation Pesticide Management Plan.
  - The Farm did not have any documentation showing that they have engaged any Company Licensed by ZEMA to handle



and Dispose off hazardous waste such as empty chemical container, Used Oil, Grease, Batteries.

- No Licenses have not been acquired from Zambia Environmental Management Agency for Storage of Pesticides and Chemicals or storage of hazardous waste.
- The farm has no documentation showing that Bi-annual report for ground water monitoring have been submitted to ZEMA.
- No permit has been obtained from Water Resources Management Authority for the abstraction of water from the stream.
- The site does not have the Integrated Pest Management Plan and a detailed Pesticide Implementation Plan.
- The farm did not have documents present at the farm such as Decision Letter, Integrated Pesticide Management Plan, and a detailed Implementation Pesticide Management Plan. It was mentioned that documentations about the farm are found at the ZNS headquarters in Lusaka.
- The Farm did not have Compensatory reforestation programs or implemented plans for Reforestation within the area.

c) **Audit Site Visit and Components:** The audit site visits were conducted at several strategic components of the farm project and the following are the summarized findings:

- The farm production capacity has increased due to the support of the IDSP support. Crops such as Soyabeans, Wheat and Maize are being grown.
- The three (3) pivots provided by the IDSP support were found to be operational at the time of the visit.
- The temporal fuel facility within the farm does not have a concrete surface. No hazardous signage were observed in the fuel facility and the storage area did not have a spill kit and a fire extinguisher.
- Chemical storage facility was found not to have proper hazardous signage on the entrance of the facility. The chemicals are kept under lock and key.
- The machinery at the workshop were not properly packed within the shop.
- Crop rotation is being implemented at the farm with Wheat/Maize and Soyabeans crops.
- It was found that the institutional processes relating to environmental management are handled by higher officers in Lusaka, hence depriving the staff at the Farm.





- The farm was found to be disposal empty chemical containers through burning and burying to prevent inmates not to reuse them. This is not an Environmentally and friendly way of disposal.
- The Environmental management practices within the farm are partially being followed at the farm as some of the required practices such as proper disposal of pesticide containers is not followed.
- The farm is not conducting regular monitoring of the soil, surface and underground water within the farm to check for any contamination levels.
- Vegetation clearance has been restricted to areas only meant for cultivating.
- Compensatory reforestation programs have not been identified or implemented at the Farm.
- Some workers in the farm were not in fully Proper Protective Proper Equipment.
- The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
- Dust suppression not conducted on all the roads within the farm.
- The Farm staff receive HIV/AIDS awareness through the Clinic within the farm.
- Waste management is not fully followed as some solid waste was dumped in some sections of the farm.



Figure 13 shows the solid waste disposed off within the farm and the water abstraction point

**d) Benefits acquired after IDSP support for ZNS Mpika Farm**

- The number of staff at the farm has increased from **80 to 120** due to the support from IDSP which has lead to the expansion of the farm.
- The crop production of Maize, Wheat and Soyabeans has increased due to the acquisition of the centre pivots.



- The farm employs about **60-80 casual workers** within the community to help during the harvesting of any crop because of the increase in the production levels. The acquisition of the pivots have increased the crop production of Soya Beans and Maize. During harvesting periods about **60-80 people, 47% male and 53% Female** are employed to help in picking of the soyabeans that normally shatters during the harvesting with a combined Harvester.
- The farm is also **encouraging skill transfer and development** to a number of staff in terms of machinery (Centre Pivots).
- The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is allowed to collect the left over wheat or Maize which is very useful for their Livestock.



Figure 14 shows the soyabeans harvest and one of Centre Pivot at the farm

#### e) Part Time Laborers/Casuals

The ZNS Mpika Farm employs within the surrounding community about 60-80 Laborers to help in the harvesting period to help in bagging and picking soyabeans in the fields. The following were noted during the Audit regarding the part time workers:

- It was observed that the Farm management pays the laborers/casual workers either daily or weekly according to the amount of work within the Farm.
- It was noted during interviews with the farm staff that in an event of a dispute regarding payment of wages, a grievance regress system is in place where the labourer has to report to the farm supervisor and record their complaint in the complaint book. At the time of the audit no complaint was reported or recorded involving non-payment of their wages.
- The Farm Management were found **to be compliant** regarding payment of wages to the Labourers.

**f) Compliances/Non-compliances/Partial Compliance**

The ZNS Mpika Farm audit was subjected to checklists that followed the Decision Letter conditions, Decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The checklists have been attached under appendix 1, below is the summary of the compliance levels for the ZNS farm.

*Table 10 shows the Compliance Levels of ZNS Mpika Farm*

Document	Compliant	Partial Compliant	Non-Compliant
<b>Decision Letter Conditions</b>	10	5	3
<b>ESMP Commitment</b>	19	4	0
<b>World Bank Operational Policies</b>	7	3	0
<b>Pest Management Plan Commitment</b>	15	3	4
<b>World Bank Operational Policy (OP 4.09 – Pest Management Commitment)</b>	4	2	0
<b>Total</b>	<b>55</b>	<b>17</b>	<b>7</b>

## **6. Zambia National Service- Mpika Shed in Mpika District (Storage Shed Development Project)**

### **a) Description of Key Characteristics of the site and Investments**

The Zambia National Service Mpika Farm is located 7km from the junction of ZNS gravel Road and Great North Road. ZNS Mpika farm has five (5) Centre Pivots and a Storage Shed, Clinic and Staff houses near the farm. The newly built storage shed is used for storage of the harvested crops within the farm. Crops grown on the farm include Wheat, Maize and Soya Beans under Irrigation. The farm has a pump station at the Lukwita stream and the water is used in the irrigation of the crops. The vegetation around the farm has been cleared to pave-way for the cultivation of the farm.

### **Investment**

The Farm added investments from the IDSP support project include a Storage Warehouse. The table below shows the breakdown of the cost.

*Table 11 shows the investment break down of the ZNS Mpika Shed Farm*

No.	Description of the Investment	Total Cost USD\$
1.	Nine (9) Centre Pivots	90,000
<b>Grand Total</b>		<b>\$90,000</b>





b) **Review of relevant documentation**

- A review of relevant documents was conducted and following were requested, Environmental Project Brief Reports, Decision Letters, Any Licences acquired from Relevant Authorities, Integrated Pesticide Management Plan and Detailed Implementation Pesticide Management Plan.
  - The Farm did not have any documentation showing that they have engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container.
  - No Licenses have not been acquired from Zambia Environmental Management Agency for Storage of Pesticides and Chemicals or storage of hazardous waste.
  - The site does not have the Integrated Pest Management Plan and a detailed Pesticide Implementation Plan.
  - The farm did not have documents present at the farm such as Decision Letter, Integrated Pesticide Management Plan, and a detailed Implementation Pesticide Management Plan. It was mentioned that documentations about the farm are found at the ZNS headquarters in Lusaka.
  - No training in Integrated Pest Management Plan has been conducted for the staff working at the shed.

c) **Audit Site Visit and Components:** The audit site visits were conducted at several strategic components of the farm project and the following are the summarized findings:

- The storage shed has been completed and is operational.
- The storage of field crops has increased due to the storage facility.
- The storage shed was found not to have proper hazardous signage on the entrance of the facility. The chemicals are kept under lock and key.
- The shed was found to have stocked wheat, Maize seed and soyabbeans.
- Waste management is not fully followed as some solid waste was dumped in some sections of the farm.
- No fire extinguishers were found within the storage facility.
- A fire assembly point has not been identified.
- The Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container.
- No signs for fumigation were observed in the storage shed and professional fumigators has not been engaged.
- It was found that the institutional processes relating to environmental management are handled by higher officers in Lusaka, hence depriving the staff at the Farm.



- The Environmental management practices within the farm are partially being followed at the farm as some of the required practices such as proper disposal of pesticide containers is not followed.
- Vegetation clearance has been restricted to areas only meant for storage shed.
- Some workers in the farm were not in fully Proper Protective Proper Equipment.
- The storage shed area has does not have a no smoking area.



Figure 15 shows the completed storage shed entrance and the inside of the shed without signage

**d) Benefits acquired after IDSP support for ZNS Storage Shed**

- The production of Maize, Wheat and Soyabeans has increased due to construction of the new shed which helps to store more quantities of the Wheat, Maize and Soyabeans.
- About **20 to 50 casuals** are employed during harvesting of any of the crops at the farm to help in packing of the harvested crops. The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is benefiting by having part time employment.





Figure 16 shows the completed shed facility and the soybeans stocked inside

#### e) Part Time Laborers/Casuals

The ZNS Mpika Shed employs within the surrounding community about 20 to 50 Laborers to help in the harvesting period to help in bagging and picking soyabeans in the fields. The following were noted during the Audit regarding the part time workers:

- It was observed that the Farm management pays the laborers/casual workers either daily or weekly according to the amount of work within the Farm.
- f) It was noted during interviews with the farm staff that in an event of a dispute regarding payment of wages, a grievance regress system is in place where the labourer has to report to the farm supervisor and record their complaint in the complaint book. At the time of the audit no complaint was reported or recorded involving non-payment of their wages.
- The Farm Management were found **to be compliant** regarding payment of wages to the Labourers.

#### g) Compliances/Non-compliances/Partial Compliance

The ZNS Storage Shed audit was subjected to checklists that followed the Decision Letter conditions, Decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The checklists have been attached under appendix 1, below is the summary of the compliance levels for the ZNS farm.

Table 12 shows the Compliance Levels of ZNS Storage Shed

Document	Compliant	Partial Compliant	Non-Compliant
Decision Letter Conditions	12	3	2
ESMP Commitment	5	2	4



<b>World Bank World Bank Operational Policies</b>	8	2	0
<b>Pest Management Plan Commitment</b>	8	2	4
<b>World Bank Operational Policy (OP 4.09 – Pest Management Commitment)</b>	4	2	0
<b>Total</b>	<b>37</b>	<b>11</b>	<b>10</b>

## 7. Zambia Correctional Services- Lubambala Farm in Mpika District (Irrigation Improvement Project).

### a) Description of Key Characteristics of the site and Investments

The Zambia Correction Service Lubambala Farm is located 5km away from the Mpika RDA weigh off Great North Road. Notable land marks include Madeco processing factory on the northern side 1.5km away and Mpika Police Camp on the eastern side 2km away. The farm is within the Lubambala Open Prison where the prisoners are taught farming skills. The farm produces wheat, soyabeans and maize by irrigation through 2 centre pivots. Water source is from the weir on the Lubambala River on the western side of the project area.

The vegetation around the farm has been cleared to pave-way for the cultivation of the farm. Currently, the farm has an open prison, offices, store room and guard room on site.

### Investment

The Farm added investments from the IDSP support project includes 2 centre irrigation pivots. The table below shows the breakdown of the cost.

Table 13 shows the investment break down of the Lubambala Farm

No.	Description of the Investment	Total Cost USD\$
1.	Two (2) Centre Pivots	175,000
<b>Grand Total</b>		<b>\$175,000</b>

### b) Review of relevant documentation

- A review of relevant documents was conducted and following were requested, Environmental Project Brief Reports, Decision Letters, Any Licences acquired from Relevant Authorities, Integrated Pesticide Management Plan and Detailed Implementation Pesticide Management Plan.

- The farm did not have documents present at the farm such as Decision Letter, Integrated Pesticide Management Plan, and a detailed Implementation Pesticide Management Plan.



It was mentioned that documentations about the farm are found at the ZCS headquarters in Lusaka.

- The Farm did not have any documentation showing that they have engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container.
- Bi-annual report for ground water monitoring have not been submitted to ZEMA.
- Licenses have not been acquired from Zambia Environmental Management Agency for Storage of Pesticides and Chemicals.
- The site does not have the Integrated Pest Management Plan and a detailed Pesticide Implementation Plan.
- The Farm did not have Compensatory reforestation programs or implemented plans for Reforestation within the area.
- Documentations of results for the evaluation, management and success of pest management were not provided.
- No training in Integrated Pest Management Plan has been conducted for the staff working at the shed.
- The farm has engaged Water Resources Management Authority for a permit for abstraction of water and storage but no license has been acquired.

c) **Audit Site Visit and Components:** The audit site visits were conducted at several strategic components of the farm project and the following are the summarized findings:

- The Farm one centre pivot provided by the IDSP support was found to be operational at the time of the visit.
- Crop rotation is being implemented at the farm with Wheat/Maize and Soyabeans crops.
- Vegetation clearance was found to be cleared only in areas where cultivation is being done.
- Buffer Zone within the farm for fire management have been created within the farm.
- The farm has proper access road that lead to the various field within the farm.
- Dust suppress is rarely done within the access because the Centre pivots during irrigation have excess water that is sprinkled within the access road.
- The Officers found at Lubambala farm have not been trained regarding the Integrated Pest Management Plan.



- The Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container.
- The farm was found to be disposing empty chemical containers through burning and burying to prevent inmates not to reuse them. This is not an Environmentally and friendly way of disposal.
- The farm has no workshop, hence servicing of the machinery is done in Mpika District.
- The Farm has a temporary Chemical storage facility. This facility did not have hazardous signage on the entrance and no fire extinguisher was observed within the facility.
- Chemicals in the storage facility were not placed on pallets and were mixed which can pose a danger incase of fire.
- It was found that the institutional processes relating to environmental management are handled by higher officers in Lusaka, hence depriving the staff at the Farm.
- The Environmental management practices within the farm are partially being followed at the farm as some of the required practices such as proper disposal of pesticide containers is not followed.
- The farm is not conducting regular monitoring of the soil, surface and underground water within the farm to check for any contamination levels.
- The farm does not have an Emergency Vehicle which is fully equipped with first aid to help in transferring staff to Mpika General Hospital.
- Compensatory reforestation programs have not been identified or implemented at the Farm.
- Some workers in the farm were not in fully Proper Protective Proper Equipment.
- The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
- The Farm staff receive HIV/AIDS awareness from the USAID staff that come one every month.
- The farm lacks an empty chemical container disposal site which should be approved by Zambia Environmental Management Agency.
- The farm has dam with a weir that collects water for irrigation. The dam was found to have environmental flows and was allowing water to continue flowing down stream. However, there is need to rehabilitate the dam weir.
- Vegetation was found to be growing along side of the dam.





Figure 17 shows the chemical storage facility and the weir with environmental flows observed

**d) Benefits acquired after IDSP support for Lubambala Farm**

- The Farm with IDSP support has increased the staff levels from **13 to 32** staff.
- Production Capacity has increased at the farm with wheat being cultivated from 53ha field and 60ha of soyabeans.
- The farm has benefited two centre pivot with the support of IDSP.
- The community around the Lubambala Farm has benefitted from the IDSP support through part time employment during the Harvest periods. The acquisition of the pivots have increased the crop production of Soya Beans and Maize. During harvesting periods about **75 people, 47% male and 53% Female** are employed to help in picking of the soyabeans that normally shatters during the harvesting.
- The Farm staff and inmates are now learning how to operate the machinery (Centre Pivots) at the farm. Hence, skill transfer has been increased at the farm.
- The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is allowed to collect the left over wheat or Maize which is very useful for their Livestock.



Figure 18 shows the Tipper Truck and Dam within the farm

#### e) Part Time Laborers/Casuals

The ZCS Lubambala Farm employs within the surrounding community about 75 Laborers to help in the harvesting period to help in bagging and picking soyabeans in the fields. The following were noted during the Audit regarding the part time workers:

- It was observed that the Farm management pays the laborers/casual workers either daily or weekly according to the amount of work within the Farm.
- It was noted during interviews with the farm staff that in an event of a dispute regarding payment of wages, a grievance regress system is in place where the labourer has to report to the farm supervisor and record their complaint in the complaint book. At the time of the audit no complaint was reported or recorded involving non-payment of their wages.
- The Farm Management were found **to be compliant** regarding payment of wages to the Labourers.

#### f) Compliances/Non-compliances/Partial Compliance

The ZCS Lubambala Farm audit was subjected to checklists that followed the Decision Letter conditions, Decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The checklists have been attached under appendix 1, below is the summary of the compliance levels for the ZCS Lubambala Farm.

Table 14 shows the Compliance Levels of ZCS Lubambala Farm

Document	Compliant	Partial Compliant	Non-Compliant
Decision Letter Conditions	9	6	3
ESMP Commitment	11	6	4



<b>World Bank World Bank Operational Policies</b>	7	3	0
<b>Pest Management Plan Commitment</b>	15	3	4
<b>World Bank Operational Policy (OP 4.09 – Pest Management Commitment)</b>	4	2	0
<b>Total</b>	<b>46</b>	<b>20</b>	<b>11</b>

## 8. Zambia National Service-Lumezi Farm in Lumezi District (Land Irrigation Expansion project)

### a) Description of Key Characteristics of the site and Investments

The Zambia National Service Lumezi Farm is located 8km away from the Lumezi town Business Centre on the eastern side part of Lumezi District and the notable land mark is Ngonga Primary School. The farm has two (2) Centre Pivots and a Generator that have been supported by the IDSP project. The farm has Wheat, Maize and Soya Beans under Irrigation. Water source is from the reservoir on the southern part of the farm.

The vegetation around the farm has been cleared to pave-way for the cultivation of the farm. Currently, the farm has offices, a workshop, a clinic, staff houses and guard room on site.

### Investment

The Farm added investments from the IDSP support project includes 2 centre irrigation pivots. The table below shows the breakdown of the cost.

*Table 15 shows the investment break down of the ZNS Lumezi Farm*

No.	Description of the Investment	Total Cost USD\$
1.	Two (2) Centre Pivots	2.58million
<b>Grand Total</b>		<b>\$2.58million</b>

### b) Review of relevant documentation

- A review of relevant documents was conducted and following were requested, Environmental Project Brief Reports, Decision Letters, Any Licences acquired from Relevant Authorities, Integrated Pesticide Management Plan and Detailed Implementation Pesticide Management Plan.
  - The farm did not have documents present at the farm such as Decision Letter, Integrated Pesticide Management Plan, and a detailed Implementation Pesticide Management Plan. It was mentioned that documentations about the farm are found at the ZNS headquarters in Lusaka.



- The Farm did not have any documentation showing that they have engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container, Used Oil, Grease, Batteries.
- The Farm does not have an Hazardous License from the Council for Storage of Fuel.
- No Licenses have not been acquired from Zambia Environmental Management Agency for Storage of Pesticides and Chemicals or storage of hazardous waste.
- The farm has no documentation showing that Bi-annual report for ground water monitoring have been submitted to ZEMA.
- No permit has been obtained from Water Resources Management Authority for the abstraction of water.
- The site does not have the Integrated Pest Management Plan and a detailed Pesticide Implementation Plan.
- The Farm did not have Compensatory reforestation programs or implemented plans for Reforestation within the area.
- No records were found for the Training in IPMP for the staff at the office, accept for some trainings being conducted by the supplier of the pesticides and chemicals.

c) **Audit Site Visit and Components:** The audit site visits were conducted at several strategic components of the farm project and the following are the summarized findings:

- The farm production capacity has increased due to the support of the IDSP support. Crops such as Soyabeans, Wheat and Maize are being grown.
- The farm is harvesting 2.5tons of soyabeans per hectare and 4-5 tons of wheat per hectares. This increase is due two installed centre pivots from the support of IDSP.
- The two (2) pivots provided by the IDSP support were found to be operational at the time of the visit and the combined harvester.
- The temporal fuel facility within the farm does not have a concrete surface. No hazardous signage were observed in the fuel facility and the storage area did not have a spill kit and a fire extinguisher.
- The workshop area of the farm was found to have used oil that was not properly secured or stored.
- Chemical storage facility was found not to have proper hazardous signage on the entrance of the facility. The chemicals are kept under lock and key.
- The dam at the farm does not have a permit for abstraction of water. A valve to allow environmental flows has been installed on the dam and a spillway.





- The community is benefitting from the dam from fishing within the dam and they use the water for gardening.
- It was observed at a proper access point should be made at the spillway for the community that lives near the dam for them to easily pass through the spillway during the rainy season.
- The farm employs casuals about 85 people from the community to help during the harvesting period.
- Crop rotation is being implemented at the farm with Wheat/Maize and Soybeans crops.
- It was found that the institutional processes relating to environmental management are handled by higher officers in Lusaka, hence depriving the staff at the Farm.
- The farm was found to be disposing empty chemical containers through burning and burying to prevent inmates not to reuse them. This is not an environmentally and friendly way of disposal.
- The Environmental management practices within the farm are partially being followed at the farm as some of the required practices such as proper disposal of pesticide containers is not followed.
- The farm is not conducting regular monitoring of the soil, surface and underground water within the farm to check for any contamination levels.
- Vegetation clearance has been restricted to areas only meant for cultivating.
- Compensatory reforestation programs have not been identified or implemented at the Farm.
- Some workers in the farm were not in fully Proper Protective Proper Equipment.
- The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
- Dust suppression not conducted on all the roads within the farm.
- The Farm staff receive HIV/AIDS awareness through the Clinic within the farm.



Figure 19 shows the locals employed to help during the harvesting period and the fuel storage facility within a concrete surface

**d) Benefits acquired after IDSP support for ZNS Lumezi Farm**

- The Farm with IDSP support has increased the staff levels from 35 to 50 staff.
- Production Capacity has increased at the farm with harvesting 2.5tons of soyabeans per hectare and 4-5 tons of wheat per hectares.
- The farm has benefited two centre pivots and a combined harvester with the support of IDSP.
- The community around the ZNS Lumezi Farm has benefitted from the IDSP support through part time employment during the Harvest periods. The acquisition of the pivots have increased the crop production of Soya Beans and Maize. During harvesting periods about **85 people, 47% male and 53% Female** are employed to help in picking of the soyabeans that normally shatters during the harvesting with a combined Harvester.
- The Farm staff are now learning how to operate the machinery (centre pivot) at the farm. Hence, skill transfer has been increased at the farm.
- The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is allowed to collect the left over wheat or Maize which is very useful for their Livestock.





*Figure 20 shows the community benefiting from the left over wheat during harvesting*



*Figure 21 shows the combined harvester in use at the farm*

#### **e) Part Time Laborers/Casuals**

The ZNS Lumezi Farm employs within the surrounding community about 85 Laborers to help in the harvesting period to help in bagging and picking soyabeans in the fields. The following were noted during the Audit regarding the part time workers:

- It was observed that the Farm management pays the laborers/casual workers either daily or weekly according to the amount of work within the Farm.



- It was noted during interviews with the farm staff that in an event of a dispute regarding payment of wages, a grievance regress system is in place where the labourer has to report to the farm supervisor and record their complaint in the complaint book. At the time of the audit no complaint was reported or recorded involving non-payment of their wages.
- The Farm Management were found **to be compliant** regarding payment of wages to the Labourers.

#### f) Compliances/Non-compliances/Partial Compliance

The ZNS Lumezi Farm audit was subjected to checklists that followed the Decision Letter conditions, Decision letters together with the EMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The checklists have been attached under appendix 1, below is the summary of the compliance levels for the ZNS Lumezi Farm.

*Table 16 shows the Compliance Levels of ZNS Lumezi Farm*

Document	Compliant	Partial Compliant	Non-Compliant
<b>Decision Letter Conditions</b>	10	5	3
<b>ESMP Commitment</b>	14	3	3
<b>World Bank Operational Policies</b>	7	3	0
<b>Pest Management Plan Commitment</b>	16	3	4
<b>World Bank Operational Policy (OP 4.09 – Pest Management Commitment)</b>	5	1	0
<b>Total</b>	<b>52</b>	<b>15</b>	<b>10</b>

### 7.1 Results and Discussion of the Audit Findings

This section will discuss the findings of the Audit conducted on the ISF sites. The section will highlight the Non-Compliances (Commitments/Conditions not triggered). Below are the common Non-Compliances that had affected all the sites during the audit visit.

#### 7.1.1 Non-Compliances (Commitments/Conditions not triggered)



- **Non-Compliance:** The Public Institutions (ISF sites) did not prepare any Compensatory reforestation programs to be implemented at the Farm.  
**Proposed Action:** The Public Institutions (ISF sites) must engage the Forestry Department in their respective Districts and come up with reforestation programs surrounding the Farm area and help plant trees in the area.
- **Non-Compliance:** The Public Institutions (ISF sites) burns used pesticide containers and bury them. This is against the Environmental Management Act and Regulations.  
**Proposed Actions:** The Public Institutions (ISF sites) must engage any Company Licensed by Zambia Environmental Management Agency to handle and Dispose off hazardous waste such as empty chemical container, Used Oil, Grease, Batteries from the farm.
- **Non-Compliance:** The Public Institutions (ISF sites) has not been monitoring surface and ground water for pollution.  
**Proposed Actions:** The Public Institutions (ISF sites) must be regularly testing and monitoring surface and underground water from the Boreholes and water reservoirs.
- **Non-Compliance:** The Decision Letter conditions states that a Bi-annual report for ground water monitoring has to be submitted to ZEMA, however no record of the report has been submitted to ZEMA.  
**Proposed Actions:** The Public Institutions (ISF sites) must be regularly testing and monitoring surface and underground water from the Boreholes and water reservoirs, then prepare the Bi-annual report to be submitted to ZEMA.
- **Non-Compliance:** The Public Institutions (ISF sites) has not engaged ZEMA on the types of permits required for the farm to be applied.  
**Proposed Actions:** The Public Institutions (ISF sites) **must immediately** engage ZEMA on the type of permits to be applied. It was observed that the farm requires a Pesticide and Toxic Substance License for storage and handling of Agriculture Chemicals.
- **Non-Compliance:** The Public Institutions (ISF sites) were found not to have a Pest Management Plan on site.  
**Proposed Actions:** The Public Institutions (ISF sites) must ensure that Pest Management Plan is always present at the farm for easy reference for Pest Management.
- **Non-Compliance:** The Public Institutions (ISF sites) does not have a detailed Implementation plan for the PMP.





- **Proposed Action:** A detailed Implementation Plan for Pesticide Management Plan must be prepared immediately to ensure that the staff at Farms follow the plan as they conduct the activities.
- **Non-Compliance:** It was observed that the staff at the farm have been trained in the Integrated Pesticide Management, however, only the high ranked officers based outside the farm were trained.
- **Proposed Action:** It is recommended that IDSP should be having training in Integrated Pesticide Management twice or atleast once in a year for the staff at the farm. This will equip the staff with knowledge in pest management.
- **Non-Compliance:** The chemical and fuel storage facilities at the Public Institutions (ISF sites) were found not to have proper signage showing hazardous materials or flammable materials, the facilities were not concreted to avoid pollution. Furthermore, Fire extinguishers were not found at these sites.



Figure 22 shows the fuel facility and chemical storage facilities

**Proposed Actions:** The Public Institutions (ISF sites) must ensure that that their fuel storage facilities are concreted, signage properly placed, spill kits must always be present within the facility incase of emergencies, a Fire extinguisher must always be present. The chemical facilities should have proper signage, chemicals must be placed on pallets.

- **Non-Compliance:** The facilities with Storage sheds have not engaged and certified professional fumigators.  
**Proposed Action:** The Storage sheds must engage certified professional fumigators to help fumigate the sheds from pest.



- **Non-Compliance:** The Storage sheds were observed not to have Fire assembly points and No smoking area.

**Proposed Action:** The Storage shed must have Fire assembly point installed, Fire Extinguishers and No smoking area to avoid fire.

### 7.1.2 Analysis of the Findings

This section of the report will analysis the levels of compliances for each of the ISF sites with regards to the decision letters conditions, Environmental Management Plan commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies.

#### ZCS Mukuyu Farm

*Table 17 shows the shows the Compliance percentage table ZCS Mukuyu Farm*

Aspect	% Compliance to Decision Letter Conditions	% Compliance to ESMP Commitments	% Compliance World Bank Operational Polices	% Compliance to Pest Management Plan Commitment	% Compliance to World bank operational policy (OP 4.09 – pest management commitment
<b>Total Conditions/ Commitments</b>	18	22	10	23	6
Compliance (x 1)	$11/18 \times 1 = 0.61$	$16/22 \times 1 = 0.73$	$7/10 \times 1 = 0.70$	$16/23 \times 1 = 0.70$	$5/6 \times 1 = 0.83$
Partial Compliance (x 0.5)	$4/18 \times 0.5 = 0.11$	$3/22 \times 0.5 = 0.07$	$3/10 \times 0.5 = 0.21$	$3/23 \times 0.5 = 0.07$	$1/6 \times 0.5 = 0.08$
Non-Compliance (x 0.0)	$3/18 \times 0.0 = 0$	$3/22 \times 0.0 = 0$	Nil	$4/23 \times 0.0 = 0$	Nil
<b>Total</b>	$(0.61+0.11)(100) = 72.0\%$	$(0.73+0.07)(100) = 80\%$	$(0.70+0.21)(100) = 91\%$	$(0.70+0.07)(100) = 77\%$	$(0.83+0.08)(100) = 91\%$

From the above table, the audit results for the ZCS Mukuyu Farm has shown that the farm is **72% Compliant** with Decision Letter Conditions, **80% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **77% compliant** with Pest Management Plan Commitment and **91% compliant** with World bank operational policy (OP 4.09 – pest management commitment).

In terms of quantitative figures Compliances were **55**, Partial Compliances were **14** and Non-Compliances **10**.





## **ZCS Chitwi Farm**

*Table 18 shows the shows the Compliance percentage table ZCS Chitwi Farm*

<b>Aspect</b>	<b>% Compliance to Decision Letter Conditions</b>	<b>% Compliance to ESMP Commitments</b>	<b>% Compliance World Bank Operational Policies</b>	<b>% Compliance to Pest Management Plan Commitment</b>	<b>% Compliance to World bank operational policy (OP 4.09 – pest management commitment)</b>
<b>Total Conditions/Commitments</b>	18	22	10	23	6
Compliance (x 1)	$10/18 \times 1 = 0.56$	$16/22 \times 1 = 0.73$	$7/10 \times 1 = 0.70$	$16/23 \times 1 = 0.70$	$5/6 \times 1 = 0.83$
Partial Compliance (x 0.5)	$5/18 \times 0.5 = 0.14$	$2/22 \times 0.5 = 0.05$	$3/10 \times 0.5 = 0.21$	$3/23 \times 0.5 = 0.07$	$1/6 \times 0.5 = 0.08$
Non-Compliance (x 0.0)	$3/18 \times 0.0 = 0$	$4/22 \times 0.0 = 0$	Nil	Nil	Nil
<b>Total</b>	$(0.56+0.14)(100) = \mathbf{70.0\%}$	$(0.73+0.05)(100) = \mathbf{78\%}$	$(0.70+0.21)(100) = \mathbf{91\%}$	$(0.70+0.07)(100) = \mathbf{77\%}$	$(0.83+0.08)(100) = \mathbf{91\%}$

From the above table, the audit results for the ZCS Chitwi Farm has shown that the farm is **70% Compliant** with Decision Letter Conditions, **78% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **77% compliant** with Pest Management Plan Commitment and **91% compliant** with World bank operational policy (OP 4.09 – pest management commitment).

In terms of quantitative figures Compliances were **54**, Partial Compliances were **14** and Non-Compliances **11**.



### **ZNS Musakamba Farm**

*Table 19 shows the shows the Compliance percentage table ZNS Musakamba Farm*

Aspect	% Compliance to Decision Letter Conditions	% Compliance to ESMP Commitments	% Compliance World Bank Operational Policies	% Compliance to Pest Management Plan Commitment	% Compliance to World bank operational policy (OP 4.09 – pest management commitment)
<b>Total Conditions/Commitments</b>	18	24	10	23	6
Compliance (x 1)	$10/18 \times 1 = 0.56$	$20/24 \times 1 = 0.83$	$7/10 \times 1 = 0.70$	$16/23 \times 1 = 0.70$	$5/6 \times 1 = 0.83$
Partial Compliance (x 0.5)	$5/18 \times 0.5 = 0.14$	$4/24 \times 0.5 = 0.08$	$3/10 \times 0.5 = 0.21$	$3/23 \times 0.5 = 0.07$	$1/6 \times 0.5 = 0.08$
Non-Compliance (x 0.0)	$3/18 \times 0.0 = 0$	Nil	Nil	$4/23 \times 0.0 = 0$	Nil
<b>Total</b>	$(0.56+0.14)(100) = \mathbf{70.0\%}$	$(0.83+0.08)(100) = \mathbf{91\%}$	$(0.70+0.21)(100) = \mathbf{91\%}$	$(0.70+0.07)(100) = \mathbf{77\%}$	$(0.83+0.08)(100) = \mathbf{91\%}$

From the above table, the audit results for the ZNS Musakamba Farm has shown that the farm is **70% Compliant** with Decision Letter Conditions, **91% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **77% compliant** with Pest Management Plan Commitment and **91% compliant** with World bank operational policy (OP 4.09 – pest management commitment).

In terms of quantitative figures Compliances were **54**, Partial Compliances were **14** and Non-Compliances **11**.



### **ZCS Nansanga Farm**

**Table 20 shows the Compliance percentage table ZCS Nansanga Farm**

Aspect	% Compliance to Decision Letter Conditions	% Compliance to ESMP Commitments	% Compliance World Bank Operational Policies	% Compliance to Pest Management Plan Commitment	% Compliance to World bank operational policy (OP 4.09 – pest management commitment)
<b>Total Conditions/Commitments</b>	18	21	10	22	6
Compliance (x 1)	$9/18 \times 1 = 0.50$	$15/21 \times 1 = 0.71$	$7/10 \times 1 = 0.70$	$15/21 \times 1 = 0.71$	$4/6 \times 1 = 0.67$
Partial Compliance (x 0.5)	$6/18 \times 0.5 = 0.17$	$3/21 \times 0.5 = 0.07$	$3/10 \times 0.5 = 0.21$	$4/21 \times 0.5 = 0.10$	$0/6 \times 0.5 = 0.0$
Non-Compliance (x 0.0)	$3/18 \times 0.0 = 0$	$3/21 \times 0.0 = 0$	Nil	$3/21 \times 0.0 = 0$	$2/6 \times 0.0 = 0$
<b>Total</b>	$(0.50+0.17)(100) = \mathbf{67.0\%}$	$(0.71+0.07)(100) = \mathbf{78\%}$	$(0.70+0.21)(100) = \mathbf{91\%}$	$(0.71+0.10)(100) = \mathbf{81\%}$	$(0.67+0.00)(100) = \mathbf{67\%}$

From the above table, the audit results for the ZCS Nansanga Farm has shown that the farm is **67% Compliant** with Decision Letter Conditions, **78% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **81% compliant** with Pest Management Plan Commitment and **67% compliant** with World bank operational policy (OP 4.09 – pest management commitment).

In terms of quantitative figures Compliances were **50**, Partial Compliances were **16** and Non-Compliances **11**.



## **ZNS Mpika Farm**

*Table 21 shows the shows the Compliance percentage table ZNS Mpika Farm*

<b>Aspect</b>	<b>% Compliance to Decision Letter Conditions</b>	<b>% Compliance to ESMP Commitments</b>	<b>% Compliance World Bank Operational Policies</b>	<b>% Compliance to Pest Management Plan Commitment</b>	<b>% Compliance to World bank operational policy (OP 4.09 – pest management commitment)</b>
<b>Total Conditions/Commitments</b>	18	23	10	22	6
Compliance (x 1)	$10/18 \times 1 = 0.56$	$19/23 \times 1 = 0.83$	$7/10 \times 1 = 0.70$	$15/22 \times 1 = 0.68$	$4/6 \times 1 = 0.67$
Partial Compliance (x 0.5)	$5/18 \times 0.5 = 0.14$	$4/23 \times 0.5 = 0.09$	$3/10 \times 0.5 = 0.21$	$3/22 \times 0.5 = 0.07$	$2/6 \times 0.5 = 0.17$
Non-Compliance (x 0.0)	$3/18 \times 0.0 = 0$	Nil	Nil	$4/22 \times 0.0 = 0$	Nil
<b>Total</b>	$(0.56+0.14)(100) = \mathbf{70.0\%}$	$(0.83+0.09)(100) = \mathbf{92\%}$	$(0.70+0.21)(100) = \mathbf{91\%}$	$(0.68+0.07)(100) = \mathbf{75\%}$	$(0.67+0.17)(100) = \mathbf{84\%}$

From the above table, the audit results for the ZNS Mpika Farm has shown that the farm is **70% Compliant** with Decision Letter Conditions, **92% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **75% compliant** with Pest Management Plan Commitment and **84% compliant** with World bank operational policy (OP 4.09 – pest management commitment).

In terms of quantitative figures Compliances were **55**, Partial Compliances were **17** and Non-Compliances **7**.



### **ZNS Mpika Storage Shed Farm**

*Table 22 shows the shows the Compliance percentage table ZNS Mpika Storage Shed*

Aspect	% Compliance to Decision Letter Conditions	% Compliance to ESMP Commitments	% Compliance World Bank Operational Policies	% Compliance to Pest Management Plan Commitment	% Compliance to World bank operational policy (OP 4.09 – pest management commitment)
<b>Total Conditions/Commitments</b>	17	11	10	14	6
Compliance (x 1)	$12/17 \times 1 = 0.71$	$5/11 \times 1 = 0.45$	$8/10 \times 1 = 0.80$	$8/14 \times 1 = 0.57$	$4/6 \times 1 = 0.67$
Partial Compliance (x 0.5)	$3/17 \times 0.5 = 0.09$	$2/11 \times 0.5 = 0.09$	$2/10 \times 0.5 = 0.10$	$2/14 \times 0.5 = 0.07$	$2/6 \times 0.5 = 0.17$
Non-Compliance (x 0.0)	$2/17 \times 0.0 = 0$	$4/11 \times 0.0 = 0$	Nil	$4/14 \times 0.0 = 0$	Nil
<b>Total</b>	$(0.71+0.09)(100) = \mathbf{80.0\%}$	$(0.45+0.09)(100) = \mathbf{54\%}$	$(0.80+0.1)(100) = \mathbf{90\%}$	$(0.57+0.07)(100) = \mathbf{64\%}$	$(0.67+0.17)(100) = \mathbf{84\%}$

From the above table, the audit results for the ZNS Mpika Storage Shed has shown that the farm is **80% Compliant** with Decision Letter Conditions, **54% Compliant** with Environmental and Social Management Plan, **90% compliant** with World Bank Operational Policies, **64% compliant** with Pest Management Plan Commitment and **84% compliant** with World bank operational policy (OP 4.09 – pest management commitment).

In terms of quantitative figures Compliances were **37**, Partial Compliances were **11** and Non-Compliances **10**.





### ZCS Lubambala Farm

*Table 23 shows the shows the Compliance percentage table ZCS Lubambala Farm*

Aspect	% Compliance to Decision Letter Conditions	% Compliance to ESMP Commitments	% Compliance World Bank Operational Policies	% Compliance to Pest Management Plan Commitment	% Compliance to World bank operational policy (OP 4.09 – pest management commitment)
<b>Total Conditions/ Commitments</b>	18	21	10	22	6
Compliance (x 1)	$9/18 \times 1 = 0.50$	$11/21 \times 1 = 0.52$	$7/10 \times 1 = 0.70$	$15/22 \times 1 = 0.68$	$4/6 \times 1 = 0.67$
Partial Compliance (x 0.5)	$6/18 \times 0.5 = 0.17$	$6/21 \times 0.5 = 0.14$	$3/10 \times 0.5 = 0.21$	$3/22 \times 0.5 = 0.07$	$2/6 \times 0.5 = 0.17$
Non-Compliance (x 0.0)	$3/18 \times 0.0 = 0$	$4/21 \times 0.0 = 0$	Nil	$4/22 \times 0.0 = 0$	Nil
<b>Total</b>	$(0.50+0.17)(100) = \mathbf{67.0\%}$	$(0.52+0.14)(100) = \mathbf{66\%}$	$(0.70+0.21)(100) = \mathbf{91\%}$	$(0.68+0.07)(100) = \mathbf{75\%}$	$(0.67+0.17)(100) = \mathbf{84\%}$

From the above table, the audit results for the ZCS Lubambala Farm has shown that the farm is **67% Compliant** with Decision Letter Conditions, **66% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **75% compliant** with Pest Management Plan Commitment and **84% compliant** with World bank operational policy (OP 4.09 – pest management commitment).

In terms of quantitative figures Compliances were **46**, Partial Compliances were **20** and Non-Compliances **11**.

**ZNS Lumezi Farm***Table 24 shows the Compliance percentage table ZNS Lumezi Farm*

Aspect	% Compliance to Decision Letter Conditions	% Compliance to ESMP Commitments	% Compliance World Bank Operational Policies	% Compliance to Pest Management Plan Commitment	% Compliance to World bank operational policy (OP 4.09 – pest management commitment)
<b>Total Conditions/Commitments</b>	18	20	10	23	6
Compliance (x 1)	$10/18 \times 1 = 0.56$	$14/20 \times 1 = 0.70$	$7/10 \times 1 = 0.70$	$16/23 \times 1 = 0.70$	$5/6 \times 1 = 0.83$
Partial Compliance (x 0.5)	$5/18 \times 0.5 = 0.14$	$3/20 \times 0.5 = 0.08$	$3/10 \times 0.5 = 0.21$	$3/23 \times 0.5 = 0.07$	$1/6 \times 0.5 = 0.08$
Non-Compliance (x 0.0)	$3/18 \times 0.0 = 0$	$3/20 \times 0.0 = 0$	Nil	$4/22 \times 0.0 = 0$	Nil
<b>Total</b>	$(0.56+0.14)(100) = 70.0\%$	$(0.70+0.08)(100) = 78\%$	$(0.70+0.21)(100) = 91\%$	$(0.70+0.07)(100) = 77\%$	$(0.83+0.08)(100) = 91\%$

From the above table, the audit results for the ZNS Lumezi Farm has shown that the farm is **70% Compliant** with Decision Letter Conditions, **78% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **77% compliant** with Pest Management Plan Commitment and **91% compliant** with World bank operational policy (OP 4.09 – pest management commitment).

In terms of quantitative figures Compliances were **52**, Partial Compliances were **15** and Non-Compliances **10**.

## 7.2 Action Plan Addressing Non-Compliances And Risks

This section will discuss Action plan addressing the non-compliances and risks the for the ISF sites. The table below highlights the non-compliances found on the sites and the actions to be taken to rectify the non-compliance.



Table 25 shows the Action plan for non-compliances

No.	Non-Compliance	Action to be taken	Evidence of Completion
1.	The Public Institutions (ISF sites) did not prepare any Compensatory reforestation programs to be implemented at the Farm.	The Public Institutions (ISF sites) must engage the Forestry Department in their respective Districts and come up with reforestation programs surrounding the Farm area and help plant trees in the area.	Preparation of Compensatory reforestation programs
2.	The Public Institutions (ISF sites) burns used pesticide containers and bury them. This is against the Environmental Management Act and Regulations.	The Public Institutions (ISF sites) must engage any Company Licensed by Zambia Environmental Management Agency to handle and Dispose off hazardous waste such as empty chemical container, Used Oil, Grease, Batteries from the farm.	Engagement of a ZEMA Licensed Hazardous Waste Disposal to be handling disposal of hazardous waste such as empty chemical container, Used Oil, Grease, Batteries from the farm.
3.	The Public Institutions (ISF sites) has not been monitoring surface and ground water for pollution.	The Public Institutions (ISF sites) must be regularly testing and monitoring surface and underground water from the Boreholes and water reservoirs.	Testing and Monitoring of underground and water reservoirs regularly
4.	The Decision Letter conditions states that a Bi-annual report for ground water monitoring has to be submitted to ZEMA, however no record of the report has been submitted to ZEMA.	The Public Institutions (ISF sites) must be regularly testing and monitoring surface and underground water from the Boreholes and water reservoirs, then prepare the Bi-annual report to be submitted to ZEMA.	Testing and Monitoring of underground and water reservoirs regularly.  Submission of Bi-Annually Reports to ZEMA.
5.	The Public Institutions (ISF sites) has not engaged ZEMA on the types of permits required for the farm to be applied.	The Public Institutions (ISF sites) <b>must immediately</b> engage ZEMA on the type of permits to be applied.	Engagement of ZEMA for the types of Licenses applicable for the sites.
6.	The Public Institutions (ISF sites) were found not to have a Pest Management Plan on site.	The Public Institutions (ISF sites) must ensure that Pest Management Plan is always present at	Availability of a Pest Management Plan at sites.



		the farm for easy reference for Pest Management.	
7.	The Public Institutions (ISF sites) does not have a detailed Implementation plan for the PMP.	A detailed Implementation Plan for Pesticide Management Plan must be prepared immediately to ensure that the staff at Farms follow the plan as they conduct the activities.	Availability of a detailed Implementation Plan for Pesticide Management Plan
8.	It was observed that the staff at the farm have been trained in the Integrated Pesticide Management, however, only the high ranked officers based outside the farm were trained.	It is recommended that IDSP should be having training in Integrated Pesticide Management twice or atleast once in a year for the staff at the farm. This will equip the staff with knowledge in pest management.	Training conducted once or twice in a year
9.	The chemical and fuel storage facilities at the Public Institutions (ISF sites) were found not to have proper signage showing hazardous materials or flammable materials, the facilities were not concreted to avoid pollution. Furthermore, Fire extinguishers were not found at these sites	The Public Institutions (ISF sites) must ensure that that their fuel storage facilities are concreted, signage properly placed, spill kits must always be present within the facility incase of emergencies, a Fire extinguisher must always be present. The chemical facilities should have proper signage, chemicals must be placed on pallets.	<p>Concreted Floors for Fuel storage facilities.</p> <p>Proper signage placed.</p> <p>Availability of spill kits.</p> <p>Availability of a Fire extinguisher.</p> <p>Chemicals properly stored.</p>
10.	The facilities with Storage sheds have not engaged and certified professional fumigators.	The Storage sheds must engage certified professional fumigators to help fumigate the sheds from pest.	Engagement of a certified fumigator.
11.	The Storage sheds were observed not to have Fire assembly points and No smoking area.	The Storage shed must have Fire assembly point installed, Fire Extinguishers and No smoking area to avoid fire.	Presence of Fire Assembly Points and installation of a smoking area



### 7.3 Implementation of the Action Plan

This section will discuss Implementation of the Action plan highlighting the person responsible, time frames to be followed and deliverable. The table below highlights the implementation plan for the action to be taken.

No.	Actionable Item	Persons Responsible for the Action	Key Performance Indicator/ Deliverable	Time Frame to Implement Actionable item
	Regular testing and monitoring surface and underground water from the Boreholes and water reservoirs.	The Officers In-Charge, Commanding Officers, the Heads of the Public Institutions and Environmental Technicians.	Bi-Annually Reports submitted to ZEMA. Testing and Monitoring of underground and water reservoirs regularly.	Monthly.
	Regular testing and monitoring surface and underground water from the Boreholes and water reservoirs, then prepare the Bi-annual report to be submitted to ZEMA.	The Officers In-Charge, Commanding Officers, the Heads of the Public Institutions and Environmental Technicians.	Bi-Annually Reports submitted to ZEMA. Testing and Monitoring of underground and water reservoirs regularly.	Monthly.  To be submitted Bi-Annually
	Engage ZEMA on the type of permits to be applied.	Officers In-Charge, Commanding Officers and the Heads of the Public Institutions	Presence of Permits	Immediately
	Undertake IPMP Training twice or at least once a year for farm staff. This will serve as a refresher training for old staff and fresh training for new staff considering there is staff turn-over at the ISF Sites.	IDSP/MoA; Officers In-Charge; Commanding Officers; and the Heads of the Public Institutions	Training Reports	Immediately





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No.	Actionable Item	Persons Responsible for the Action	Key Performance Indicator/ Deliverable	Time Frame to Implement Actionable item
	Ensure Pest Management Plans are readily available on site.	Officers In-Charge; Commanding Officer; Heads of the Public Institutions; and IDSP Officers	Presence and readily availability of IPMP's on sites.	Immediately
	Prepare a detailed IPMP Implementation Plan to ensure that the staff at Farms follow the plan as they conduct the activities.	The Officers In-Charge, Commanding Officer, the Heads of the Public Institutions and IDSP Officers	Availability of a detailed Implementation Plan for Pesticide Management Plan	Within 3 months of finalisation of this report
	Ensure that all fuel storage facilities are concreted lined; signage properly placed; spill kits always readily available within the facility in case of emergencies; a Fire extinguisher must always be present. The chemical facilities should have proper signage, chemicals must be placed on pallets.	The Officers In-Charge, Commanding Officers, the Heads of the Public Institutions and Environmental Technicians.	<ul style="list-style-type: none"> <li>• All Fuel storage facilities floors concrete lined.</li> <li>• Proper signage placed.</li> <li>• Spill kits available.</li> <li>• Presence of Fire extinguishers.</li> <li>• Chemicals stored on pallets.</li> </ul>	To be done immediately.
	Storage sheds to engage certified professional fumigators for all fumigation.	Officers In-Charge; Commanding Officers; Heads of the Public Institutions and Environmental Technicians.	Engagement of a certified fumigator.	To be done immediately.
	The Storage shed must have Fire assembly point installed, Fire Extinguishers and No smoking area to avoid fire.	The Officers In-charge, Commanding Officers, the Heads of the Public Institutions and Environmental Technicians.	Presence of Fire Assembly Points and installation of a smoking area	To be done immediately



## 8.0 CONCLUSION

The Audit was successful conducted from 28th August, 2023 to 6th September, 2023 for the ISF sites in Central, Muchinga, Eastern and Copperbelt Provinces. The audit was able to establish the compliance levels for the ISF sites with respect to Decision letters conditions, ESMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies.

The audit results for the ZCS Mukuyu Farm were found to be as follows, the farm is **72% Compliant** with Decision Letter Conditions, **80% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **77% compliant** with Pest Management Plan Commitment and **91% compliant** with World bank operational policy (OP 4.09 – pest management commitment. In terms of quantitative figures Compliances were **55**, Partial Compliances were **14** and Non-Compliances **10**.

The audit results for the ZCS Chitwi Farm were that the farm is **70% Compliant** with Decision Letter Conditions, **78% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **77% compliant** with Pest Management Plan Commitment and **91% compliant** with World bank operational policy (OP 4.09 – pest management commitment. In terms of quantitative figures Compliances were **54**, Partial Compliances were **14** and Non-Compliances **11**.

The audit results for the ZNS Musakamba Farm were that the farm is **70% Compliant** with Decision Letter Conditions, **91% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **77% compliant** with Pest Management Plan Commitment and **91% compliant** with World bank operational policy (OP 4.09 – pest management commitment. In terms of quantitative figures Compliances were **54**, Partial Compliances were **14** and Non-Compliances **11**.

The audit results for the ZCS Nansanga Farm were that the farm is **67% Compliant** with Decision Letter Conditions, **78% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **81% compliant** with Pest Management Plan Commitment and **67% compliant** with World bank operational policy (OP 4.09 – pest management commitment. In terms of quantitative figures Compliances were **50**, Partial Compliances were **16** and Non-Compliances **11**.

The audit results for the ZNS Mpika Farm were that the farm is **70% Compliant** with Decision Letter Conditions, **92% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **75% compliant** with Pest Management Plan Commitment and **84% compliant** with World bank operational policy (OP 4.09 – pest management commitment. In terms of



quantitative figures Compliances were **55**, Partial Compliances were **17** and Non-Compliances **7**.

The audit results for the ZNS Mpika Storage Shed were that the farm is **80% Compliant** with Decision Letter Conditions, **54% Compliant** with Environmental and Social Management Plan, **90% compliant** with World Bank Operational Policies, **64% compliant** with Pest Management Plan Commitment and **84% compliant** with World bank operational policy (OP 4.09 – pest management commitment. In terms of quantitative figures Compliances were **37**, Partial Compliances were **11** and Non-Compliances **10**.

The audit results for the ZCS Lubambala Farm were that the farm is **67% Compliant** with Decision Letter Conditions, **66% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **75% compliant** with Pest Management Plan Commitment and **84% compliant** with World bank operational policy (OP 4.09 – pest management commitment. In terms of quantitative figures Compliances were **46**, Partial Compliances were **20** and Non-Compliances **11**.

The audit results for the ZNS Lumezi Farm were that the farm is **70% Compliant** with Decision Letter Conditions, **78% Compliant** with Environmental and Social Management Plan, **91% compliant** with World Bank Operational Policies, **77% compliant** with Pest Management Plan Commitment and **91% compliant** with World bank operational policy (OP 4.09 – pest management commitment. In terms of quantitative figures Compliances were **52**, Partial Compliances were **15** and Non-Compliances **10**.

Therefore, it is inevitable that ISF sites adheres to the recommendations outlined under 8.0 as these recommendations are aimed at improving environmental performance of the activities being undertaken in these ISF sites at all phases of implementation.

### **8.1 Weak Points**

- Lack of monitoring and testing of soil, surface and underground water. This activity is very important because it help to monitor pollution levels in mentioned parameters.
- Lack of permits from Water Resources Management Authority for commercial boreholes and abstraction of water. The irrigation project are very important for sustainability of crops, however, water permits are equally important to monitoring and water resource preservation.
- Lack of Pesticide and Toxic Substance Licenses from Zambia Environmental Management Agency.
- Lack of follow up trainings of staff at the farms in pest management.



## **8.2 Strong Points and Positive Impacts of the IDSP support**

- The production capacities for crops have increased in the ISF sites due to the Infrastructure provided by the IDSP.
- The farms are able to rotate crops with each season hence enhance the production capacities.
- Communities around the ISF sites have benefitted through employment, Electricity, Health, Transport and Food.
- The community is benefitting from the dam from fishing within the dam and they use the water for gardening.
- Skill transfer and development has been brought to a number of staff in terms of machinery, this includes some inmates.
- The Livelihood in the surrounding the farm area has improved due to the expansion of the farm. The community is allowed to collect the left over wheat or Maize which is very useful for their Livestock.
- The community is benefiting from the Clinic services and over 1000 people are benefiting from the Clinic.

## **8.3 Information Gaps and Challenges**

The Audit had some information Gaps and challenges will undertaking this activity. The following are the issues;

- Out 12 sites only 8 ISF sites were visited. Zambia College of Agriculture (ZCA-Mpika), Zambia Center for Horticulture Training (ZCHT), Zambia Police Shimambala Farm and Zambia Police Buchetekelo due to the unavailability of the administrative staff.
- Documentations for ISF sites were very difficult to collect due the protocol that these institutions follow.



## 9.0 RECOMMENDATIONS

This section of the report will be looking at some of the recommendations that have been given to ensure that all the ISF sites are full compliant to the Decision letters conditions, ESMP commitments, Integrated Pesticide Management Plan and the World Bank Operational Policies. The below are the recommendations to be followed:

- i. The Public Institutions (ISF sites) must engage the Forestry Department in their respective Districts and come up with reforestation programs surrounding the Farm area and help plant trees in the area.
- ii. The Public Institutions (ISF sites) must engage any Company Licensed by Zambia Environmental Management Agency to handle and Dispose off hazardous waste such as empty chemical container, Used Oil, Grease, Batteries from the farm.
- iii. The Public Institutions (ISF sites) must be regularly testing and monitoring surface and underground water from the Boreholes and water reservoirs to ascertain pollution levels in the water. Bi-annual report must be submitted to ZEMA.
- iv. The Public Institutions (ISF sites) **must immediately** engage ZEMA on the type of permits to be applied. It was observed that the farm requires a Pesticide and Toxic Substance License for storage and handling of Agriculture Chemicals.
- v. The Public Institutions (ISF sites) must ensure that Pest Management Plan is always present at the farm for easy reference for Pest Management.
- vi. A detailed Implementation Plan for Pesticide Management Plan must be prepared immediately to ensure that the staff at Farms follow the plan as they conduct the activities.
- vii. It is recommended that IDSP should be having training in Integrated Pesticide Management twice or atleast once in a year for the staff at the farm. This will equip the staff with knowledge in pest management.
- viii. The Public Institutions (ISF sites) must ensure that that their fuel storage facilities are concreted, signage properly placed, spill kits must always be present within the facility incase of emergencies, a Fire extinguisher must always be present. The chemical facilities should have proper signage, chemicals must be placed on pallets.
- ix. The Storage sheds must engage certified professional fumigators to help fumigate the sheds from pest.
- x. The Storage shed must have Fire assembly point installed, Fire Extinguishers and No smoking area to avoid fire.





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## Appendix 1: Checklists

S/N	Decision letter conditions	Compliance Level			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	ZCS shall implement the project and all environmental management commitments as stated in the Environmental Project Brief (EPB) <b>with changes</b> as proposed by the Zambia Environmental Management Agency (ZEMA) in the decision letter and any other conditions that may be issued thereafter?			✓	3	The Environmental Management commitments have been partially followed.
2.	ZCS shall prior to project implementation, consult and comply in full with the conditions and specifications of the local authority, Ministry responsible for Lands, Ministry responsible for Agriculture, Water Resources Management Authority, Department of Forestry and other mandated authorities?			✓	3	ZCS Mukuyu farm does not have a permit for the Commercial Boreholes that are used for Irrigation.
3.	The projects and related activities shall be implemented in such a way that public and private property, health and livelihood shall not be affected negatively, endangered, damaged, harmed or lost. Where is it determined that the health of people, property or livelihood is endangered, harmed, affected negatively, damaged or lost as a result of the project	✓			5	The ZCS Mukuyu Farm has not damaged any public or private property. No report has been recorded on any livelihood being endangered.



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Audited Facility ZCS, Mukuyu Kabwe	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZCS Representative Dr. Phylis Mwilola (ZCS) Frank Maela (ZCS)	Audit Date (s): 28/08/2023		
	and/or related activities ZCS shall be liable for payments or settlement of appropriate compensation and other forms of relief or replacement?					
4.	ZCS shall put in place measures to protect water resources from damage or pollution, streams and their sources shall be protected?		✓		5	ZCS Mukuyu has put in place measures to protect the water resources. Chemicals applied are legal and according to the need of the farm. Streams and Rivers are 1km away from the farm.
5.	ZCS shall conduct compensatory reforestation programs in or other districts to offset the loss of vegetation from the project area?			✓	0	No Compensatory reforestation programs were identified or implemented at the Farm.
6.	ZCS shall not conduct indiscriminate clearing of vegetation clearing shall only be limited to areas where operation will be conduct or where project facilities will have to be conducted. In order to avert soil erosion, where possible, stumping as opposed to uprooting shall be used and trees shall be replanted in sensitive areas to facilitate ecological restoration?		✓		5	Vegetation clearance has been limited only in areas where farming activities are being conducted.
7.	ZCS shall put in place appropriate measures for management of pesticides and toxic substances?		✓		5	ZSC Mukuyu Farm is implementing the Pesticide and Toxic Substances management.
8.	ZCS shall ensure that sloid waste and any other unwanted materials as a result of preparation,					ZCS Mukuyu Farm has engaged the Kabwe Municipal Council to collect and Dispose off Solid waste.



Environmental Audit Report for ISF sites



Audited Facility ZCS, Mukuyu Kabwe	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZCS Representative Dr. Phylis Mwilola (ZCS) Frank Maela (ZCS)	Audit Date (s): 28/08/2023		
	construction and operations works are collected and disposed of at a license waste disposal site?	✓			5	
9.	ZCS should ensure all radioactive materials or materials containing radioactive substances shall be handled and/or disposed of appropriately?	✓			5	ZCS Mukuyu Farm has not handled any radioactive materials during its operational.
10.	ZCS hazardous and other types of waste shall be managed appropriately by persons or companies licenced by Zambia Environmental Management Agency		✓			ZCS Mukuyu Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as Used Oil, Grease, Batteries.
11.	ZCS shall integrate appropriate drainage and erosion control measures in the development and operation of the project. Measures shall be put in place to prevent and control siltation of water bodies?	✓			5	ZCS Mukuyu Farm has ensured that they prevent soil erosion by construction of drainages around the fields. Hence this helps in prevention of silting the water bodies.
12.	ZCS shall put in place measures or install and operate effective facilities for monitoring, preventing, controlling soil contamination, pollution of air and pollution of surface and ground water?			✓	3	ZCS Mukuyu Farm has not installed soil and air monitoring facilities at the Farm.
13.	Are levels of noise and vibrations monitored and maintained within the appropriate limits?	✓			5	The Noise levels within the farm are acceptable and within limit.



Environmental Audit Report for ISF sites



<b>Audited Facility</b> ZCS, Mukuyu Kabwe	<b>Auditor:</b> Dickson Kabwe	<b>IDSP</b> Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	<b>ZCS Representative</b> Dr. Phylis Mwilola (ZCS) Frank Maela (ZCS)			<b>Audit Date (s):</b> 28/08/2023
						Furthermore, cultivating activities area seasonal and not continuous.
14.	Is ZCS ensuring that all incidents with potential to pollute the environment and/or harm human beings are reported to ZEMA immediately?	✓			5	No Environmental Incident has occurred or being recorded at the farm.
15.	Is ZCS ensuring to preserve flora and fauna habitats in areas of the project site that will not be used for the project and related activities?	✓			5	Vegetation clearance has been conducted only in areas requiring farming.
16.	Is Dust suppression being carried out in areas where dust will be generated?	✓			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
17.	Is ZCS conducting open are burning without written permission from the Zambia Environmental Agency?		✓		0	Used pesticide containers are burnt at the farm and buried to prevent inmates not to use them.
18.	Has ZCS obtain appropriate permits and licences from the Zambia Environmental Management Agency and comply with the requirement of the Environment Act, 2011 and the Environmental Management (Licence) Regulations, 2013?			✓	3	The Farm requires needs to obtain a Pesticide and Toxic Substance for Storage and handling of Chemicals.
		<b>C=11</b>	<b>NC=3</b>	<b>PC=4</b>		

**Compliances=11**  
**Non-Compliances=3**  
**Partial Compliance=4**



Environmental Audit Report for ISF sites



S/N	ESMP Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Has ZCS implemented dust suppression measures to control any dust that may be generated during construction and operation phases?	✓			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
	Has ZCS been monitoring surface water for pollution levels?		✓		0	The Testing of Surface and Underground water is not being done.
	Has ZCS minimized the use of excess chemicals on the land that can contaminate the soils and ground water?	✓			5	The Farm only applies chemicals when it is necessary e.g. for pest control and weed control.
2.	Has ZCS implemented the noise suppression measures by ensuring earth moving and construction equipment are of high efficiency and well maintained including the checking and replacing of intake and exhaust silencers?	✓			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.





Environmental Audit Report for ISF sites



	Has ZCS continuously been monitoring noise levels to detect any changes of noise levels or easy detection of any abnormal noise level so as to implement mitigation measures?	✓			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
3.	Has ZCS been preventing any form of soil pollution that may lead to degradation?	✓			5	Application of chemicals has been minimized.
	Has ZCS been maintaining crop rotation on fields to enhance soil fertility?	✓			5	Crop rotation is being done at the farm.
4.	Has ZCS been submitting the bi annual ground water sample results to ZEMA?		✓		0	No Bi-annual report for ground water monitoring has been submitted to ZEMA.
6.	Has ZCS taken initiative to be employing local youths for manual labour?	✓			5	The locals have are being employed. During harvesting period about 20 people are employed as casuals.
7.	Has ZCS engaged the community throughout the project life?	✓			5	Community engagement is being done within the farm area.
8.	Has ZCS development a HIV/AIDs sensitization activities for its workforce and local community?	✓			5	The farm has engaged USAID in HIV/AIDS sensitization for its employees.
9.	Has ZCS liaised with ZEMA for the identification of any permits required for its				0	Engagement with ZEMA has not been done on the types of permits required for the farm.



Environmental Audit Report for ISF sites



	operation with regards to storage and use of diesel?		✓			
10.	Has ZCS implemented dust management measures to reduce dust along the roads and farming fields (during cultivation) as a continuous exercise?			✓	3	This is been partially done. Dust suppression not conducted on all the roads within the farm.
11.	Has ZCS put onsite an emergency vehicle equipped with first aid to facilitate immediate health requirements for its employee before evacuation to Kabwe District for further medical treatment?	✓			5	An Emergency Vehicle was observed within the farm.
12.	Has ZCS provided well equipped sanitary facilities for its employees?	✓			5	Facilities within the farm were clean.
13.	Has ZCS implemented the reduction risk of malaria by spraying offices and work stations on site and providing mosquito nets to employees?	✓			5	This program of spraying for Mosquitoes is being spearheaded by the Ministry of Health.
15.	Has ZCS put up active desk HIV/AIDs information desk which will be available to farm employees through the farm manager?	✓			5	There is a Clinic within the Farm area which provides for health care and HIV/AIDS related information.
16.	Has ZCS provided insulation and automatic fault sensors to all electrical and mechanical gadgets?	✓			5	Being done.



Environmental Audit Report for ISF sites



17.	Has ZCS created buffer zones around the farm with regards to woodland management?	✓			5	The farm has buffer zones within the fields and separates the fields with the woodlands.
18.	It is stated in the report that barren sites shall initially be planted with fast growing soil improvement plants such as nitrogen fixing tree species, has this been implemented?			✓	3	This is partially being done, just a few trees were observed being planted within the farm area.
19.	Has ZCS formulated and implemented the program to discourage farm employees against hunting wild animals for food?				N/A	
20.	Has ZCS provided a logbook of sightings on site record book of any animals seen during normal activities which has to be kept by the environmental officer to increase the awareness of farm employees about the fauna on farm?				N/A	
21.	Has the site clearance been restricted only to where it is necessary by ZCS?	✓			5	Clearance of vegetation has been restricted only in areas for cultivation of crops.
22.	Has the extraction of fresh water from streams and rivers been minimized, has WARMA been consulted on the irrigation water rights by ZCS?			✓	3	The farm has consulted WARMA on the permits required but however no permits have been granted for the commercial boreholes.
		<b>C=16</b>	<b>NC=3</b>	<b>PC=3</b>		



# Environmental Audit Report for ISF sites



S/N	World Bank Operational Policies	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	<b>Assessment and Management of Environmental and Social Impact risks-</b> Is the farm assessing, managing and monitoring environmental and social impacts and risks associated with the operations?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm.
2.	<b>Pollution prevention and Abatement</b> – Is the farm avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and if possible/compensation/remedying significant adverse effects of objects?	√			5	The farm is avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and compensation.
3.	<b>Biodiversity and Ecosystems-</b> is the farm through the use of available data and early scanning and scoping process, determined the biodiversity footprint of the project and whether there are no go areas?	√			5	This is being done.
4.	<b>EIB Climate-Related Standards-</b> Is the farm management identifying and applying the necessary physical or soft measures at planning, designing and implementation stage of reduce these risks as well as to establish appropriate monitoring system to ensure the sustainability of the project?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm.
5.	<b>Cultural Heritage</b> Is the farm protecting cultural heritage from adverse impacts of project activities by promoting the cultural heritage impact assessment and management?	√			5	The farm is protecting the cultural heritage from adverse impacts within the farm.



Environmental Audit Report for ISF sites



Audited Facility:	Auditor:	IDSP	ZCS Representative				Audit Date (s):
ZCS, Mukuyu Kabwe	Dickson Kabwe	Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	Dr. Phylis Mwilola Frank Maela				28/09/2023
6	<b>Involuntary Resettlement-</b> Is the farm avoiding or at least minimise, project induced resettlement whenever feasible be exploring alternative project design?		√			5	No resettlement was done within the farm because the farm is the property of the Zambia Correction Service.
7.	<b>Rights and Interests of Vulnerable Groups-</b> Is the farm affirming, respecting and protecting the rights and interests of vulnerable individuals and groups within the designated operational scope, throughout the project lifecycle?		√			5	The rights and interests of vulnerable groups are being protected by the farm.
8	<b>Labour Standards</b> Foster and realise non discriminating and fair and equal treatment and opportunity at work and ensure develop and maintain a sound worker management relationship?		√			5	A sound worker's management relationship was observed at the farm.
9	<b>Occupational and Public Health Safety and Security-</b> Is the farm promoting and protecting the health and safety of employees at work throughout the project life recycle by ensuring safe, health, hygienic and secure working and accommodation conditions and effective, a working environment that respects and safe guards the rights to privacy and when appropriate, to the enjoyment of the highest attainable standard of physical and mental health of workers and their families( e.g in workers accommodation				√	3	Some workers in the farm were not in fully Proper Protective Proper Equipment.
10.	<b>Stakeholders Engagement-</b> Is the farm engaging stakeholders are properly identified and engaged a dialogue between the promoter, the affected communities and other interested parties throughout the project life cycle?		√			5	This is a continuous progress which the ZCS Farm is doing with the community surrounding the farm.



# Environmental Audit Report for ISF sites



Audited Facility:	Auditor:	IDSP	ZCS Representative	Audit Date (s):
ZCS, Mukuyu Kabwe	Dickson Kabwe	Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	Dr. Phylis Mwilola Frank Maela	28/09/2023
		C=7	NC=0	PC=3

Audited Facility: ZCS Kabwe, Mukuyu	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZCS Representative Dr. Phylis Mwilola Frank Maela			Audit Date (s):  28/09/2023
S/N	Pest Management Plan Commitment	Level of Compliance			Performance	Comments or Observations
		C	NC	PC	Rating (1-5)	
1.	Is there a PMP at the site?		√		0	The Pest Management Plan was not found at the farm.
2.	Is there a detailed implementation of the PMP for farms under production?		√		0	No detailed Implementation plan for the PMP was found at site.
3.	Is the farm compliant to the Environmental management (licensing) Regulation?			√	3	No Pesticide and Toxic substance License has obtained. The storage facility for Pesticide is not labeled.
4	Are there areas that require compliance to aspects of the regulations?	√			5	
5	Are the Aspects identified compliant?			√	3	The storage facility for Pesticide is not labeled. Stocking of chemicals is not properly done.
6	Is the Farm managing pest? by combining biological, cultural and physical and chemical tools in a way that minimize economic health and environmental risks pest control that are selected and applied in a manner that minimizes risks to human health beneficial and nontarget organisms and the environment?	√			5	The farm uses Chemicals to control pests.





*Environmental Audit Report for ISF sites*



7.	Is the farm Eliminating of significant threats caused by pests to the health and safety of patients' staff and the public?	√			5	The applying of pesticides on the crops is regulated and only applied once the pests are identified.
8	Is the farm preventing the loss or damage to structures or property by pests?	√			5	There is no damaged observed or recorded to structures or property.
9	Is the farm ensuring protection of environmental quality inside and outside buildings?	√			5	Being done.
10	Is head of institution having the IPMP at site?		√		0	The IPMP not found at the farm.
11	Is the farm following the IPM principles e.g. prevention and suppression, monitoring, decision making nonchemical methods pesticide selection, reduced pesticide use anti-resistance strategies and evaluation?			√	3	This is partially being done. The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
12	Is the farm applying the IMP decision making process on pest management? E.g problem or pest identification, determine the severity of the problem and action thresholds, assess management options, select and options employed and documentation record results.	√			5	Pest Management being followed at the Farm.
13	Has the farm planned for IPM	√			5	The Integrated Pest Management is being followed at the farm.
14	Is there any expertise of various fields in charge of IMP system?	√			5	Water Engineers and Agriculture experts have been employed at the farm.
15	Has the farm employees had any training in IPM?		√		0	Non of the Employees have been trained in IPM.
16	Is the farm practicing good husbandry?	√			5	
17	Is the farm practicing crop rotation, inter- cropping and timing of planting/harvest?	√			5	Crop Rotation is being conducted at the farm. Wheat, Maize and Soya Beans.
18	Is the farm purchasing improved varieties of seed or plant material?	√			5	Seed Variety was observed.
19	Is the farm practicing good water management to promote crop growth while avoiding excessive watering and standing water?	√			5	The farm is using an Irrigation system hence water use is not excessive.



# Environmental Audit Report for ISF sites



20	Is the farm removing any diseased and infested plants, both in growing crop and after harvest?	√			5	Scouting of pests and weeds are done everyday by the employees at the far.
21	Is the farm removing weeds in the field?	√			5	Being done.
22	Is the farm using mechanical, biological chemical?	√			5	The farm uses Chemical to control pests.
23	Are the chemicals securely stored?	√			5	
		<b>C=16</b>	<b>NC=4</b>	<b>PC=3</b>		

<b>Audited Facility:</b> ZCS Kabwe Mukuyu	<b>Auditor:</b> Dickson Kabwe	<b>IDSP</b> Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	<b>ZCS Representative</b> Dr. Phylis Mwilola Frank Maela			<b>Audit Date (s):</b>  28/09/2023
<b>S/N</b>	<b>World bank operational policy (OP 4.09 – pest management commitment</b>	<b>Level of Compliance</b>			<b>Performance</b>	<b>Comments or Observations</b>
		<b>C</b>	<b>NC</b>	<b>PC</b>	<b>Rating</b> (1-5)	
1.	Are the pesticides used at the farm have negligible adverse human health effects?	√			5	The pesticide used are registered for use in Zambia.
2.	Are the pesticides used at the farm effective against the target species?	√			5	The pesticides being used target the pests identified.
3.	Are the pesticides applied on the farm aim to minimize damage to natural enemies?	√			5	Pesticides used are applied to minimize damage.
4.	Do the pesticide used at farm demonstrate to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them?	√			5	



Environmental Audit Report for ISF sites



5.	Are the pesticides taking into account the need to prevent the development of resistance in pests?	√			5	
6.	Are the pesticide manufactured package, labelled handled, stored, disposed of and applied according to world bank standards?			√	3	Partially, the chemicals being stored in the store room have not be properly stored and stacked. The used containers of the chemicals are not being properly disposed off.
		<b>C=5</b>	<b>NC=0</b>	<b>PC=1</b>		

<b>Audited Facility:</b> ZCS Chitwi Luanshya	<b>Auditor:</b> Dickson Kabwe	<b>IDSP</b> Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	<b>ZCS Representative</b> Frank Hachoombwa (O.I.C) Vincent Moombe (D.O.I.C) Innocent Kalwizhi			<b>Audit Date (s):</b> <b>28/09/2023</b>
S/N	Decision letter conditions	Level of Compliance			Performance	Comments or Observations
		C	NC	PC	Rating(1-5)	
1.	ZCS shall implement the project and all environmental management commitments as stated in the environmental project brief (EPB) <b>with changes</b> as proposed by the Zambia Environmental Management Agency (ZEMA) in the decision letter and any other conditions that may be issued thereafter?			√	3	The Environmental Management commitments have been partially followed. Some aspects of monitoring have not been done at the farm, such as soil and water monitoring.
2.	ZCS shall prior to project implementation, consult and comply in full with the conditions and specifications of the local authority, Ministry responsible for Lands, Ministry responsible for Agriculture, Water Resources Management Authority, Department of Forestry and other mandated authorities?			√	3	This has been partially done. Institutions such as Forestry Department have not fully consulted.



Environmental Audit Report for ISF sites



Audited Facility: ZCS Chitwi Luanshya	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZCS Representative Frank Hachoombwa (O.I.C) Vincent Moombe (D.O.I.C) Innocent Kalwizhi				Audit Date (s): 28/09/2023
3.	The projects and related activities shall be implemented in such a way that public and private property, health and livelihood shall not be affected negatively, endangered, damaged, harmed or lost. Where is it determined that the health of people, property or livelihood is endangered, harmed, affected negatively, damaged or lost as a result of the project and/or related activities ZCS shall be liable for payments or settlement of appropriate compensation and other forms of relief or replacement?		√			5	The ZCS Chitwi Farm has not damaged any public or private property. No report has been recorded on any livelihood being endangered.
4.	ZCS shall put in place measures to protect water resources from damage or pollution, streams and their sources shall be protected?		√			5	The Chitwi Farm has put in place measures to protect the water resources such as the ensuring the chemicals applied are according to the need of the farm. Streams and Rivers are 500m away from the farm.
5.	ZCS shall conduct compensatory reforestation programs in or other districts to offset the loss of vegetation from the project area?			√		0	No Compensatory reforestation programs were identified or implemented at the Farm.
6.	ZCS shall not conduct indiscriminate clearing of vegetation clearing shall only be limited to areas where operation will be conducted or where project facilities will have to be conducted. In order to avert soil erosion, where possible, stumping as		√			5	ZCS Chitwi Farm has only cleared vegetation where the fields are located.



Environmental Audit Report for ISF sites



<b>Audited Facility:</b> ZCS Chitwi Luanshya		<b>Auditor:</b> Dickson Kabwe	<b>IDSP</b> Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	<b>ZCS Representative</b> Frank Hachoombwa (O.I.C) Vincent Moombe (D.O.I.C) Innocent Kalwizhi			<b>Audit Date (s):</b> <b>28/09/2023</b>
	opposed to uprooting shall be used and trees shall be replanted in sensitive areas to facilitate ecological restoration?						
7.	ZCS shall put in place appropriate measures for management of pesticides and toxic substances?			√	3		This is being partially done. The chemical storage facility entrance is not labelled and Chemicals are not placed on pallets for ventilation purpose.
8.	ZCS shall ensure that solid waste and any other unwanted materials as a result of preparation, construction and operations works are collected and disposed of at a license waste disposal site?	√			5		ZCS Chitwi has engaged the Luanshya Council to collect and Dispose off Solid waste.
9.	ZCS should ensure all radioactive materials or materials containing radioactive substances shall be handled and/or disposed of appropriately?	√			5		ZCS Chitwi Farm has not handled any radioactive materials during its operational.
10.	ZCS hazardous and other types of waste shall be managed appropriately by persons or companies licenced by Zambia Environmental Management Agency		√		0		ZCS Chitwi Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as Used Oil, Grease, Batteries.
11.	ZCS shall integrate appropriate drainage and erosion control measures in the development and operation of the project. Measures shall be put in place to prevent and control siltation of water bodies?	√			5		ZCS Chitwi Farm has ensured that they prevent soil erosion by construction of drainages around the fields. Hence this helps in prevention of silting the water bodies.



Environmental Audit Report for ISF sites



<b>Audited Facility:</b> ZCS Chitwi Luanshya	<b>Auditor:</b> Dickson Kabwe	<b>IDSP</b> Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	<b>ZCS Representative</b> Frank Hachoombwa (O.I.C) Vincent Moombe (D.O.I.C) Innocent Kalwizhi				<b>Audit Date (s):</b> <b>28/09/2023</b>
12.	ZCS shall put in place measures or install and operate effective facilities for monitoring, preventing, controlling soil contamination, pollution of air and pollution of surface and ground water?				√	3	ZCS Chitwi Farm has not installed soil and air monitoring facilities at the Farm.
13.	Are levels of noise and vibrations monitored and maintained within the appropriate limits?		√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
14.	Is ZCS ensuring that all incidents with potential to pollute the environment and/or harm human beings are reported to ZEMA immediately?		√			5	No Environmental Incident has occurred or being recorded at the farm.
15.	Is ZCS ensuring to preserve flora and fauna habitats in areas of the project site that will not be used for the project and related activities?		√			5	Vegetation clearance has been conducted only in areas requiring farming.
16.	Is Dust suppression being carried out in areas where dust will be generated?		√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
17.	Is ZCS conducting open are burning without written permission from the Zambia Environmental Agency?			√		0	Used pesticide containers are burnt at the farm and buried to prevent inmates not to use them.





Environmental Audit Report for ISF sites



Audited Facility:ZCS Chitwi Luanshya	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZCS Representative Frank Hachombwa (O.I.C) Vincent Moombe (D.O.I.C) Innocent Kalwizhi				Audit Date (s): 28/09/2023
18.	Has ZCS obtain appropriate permits and licences from the Zambia Environmental Management Agency and comply with the requirement of the Environment Act, 2011 and the Environmental Management (Licence) Regulations, 2013?			√	3	The Farm requires needs to obtain a Pesticide and Toxic Substance for Storage and handling of Chemicals.	
		C=10	N=3	PC=5			

**Compliances=10**

**Non-Compliances=3**

**Partial Compliance=5**



Environmental Audit Report for ISF sites



S/N	ESMP Commitment	Level of Compliance			Performance	Comments or Observations
		C	NC	PC	Rating(1-5)	
1.	Has ZCS implemented dust suppression measures to control any dust that may be generated during construction and operation phases?	√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
	Has ZCS been monitoring surface water for pollution levels?		√		0	The Testing of Surface and Underground water is not being done.
	Has ZCS minimized the use of excess chemicals on the land that can contaminate the soils and ground water?	√			5	The Farm only applies chemicals when it is necessary e.g. for pest control and weed control.
2.	Has ZCS implemented the noise suppression measures by ensuring earth moving and construction equipment are of high efficiency and well maintained including the checking and replacing of intake and exhaust silencers?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
	Has ZCS continuously been monitoring noise levels to detect any changes of noise levels or easy detection of any abnormal noise level so as to implement mitigation measures?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
3.	Has ZCS been preventing any form of soil pollution that may lead to degradation?	√			5	Application of chemicals has been minimized.
	Has ZCS been maintaining crop rotation on fields to enhance soil fertility?	√			5	Crop rotation is being done at the farm.



*Environmental Audit Report for ISF sites*



4.	Has ZCS been submitting the bi annual ground water sample results to ZEMA?		√		0	No Bi-annual report for ground water monitoring has been submitted to ZEMA.
6.	Has ZCS taken initiative to be employing local youths for manual labor?	√			5	The locals have are being employed. During harvesting period about 20 people are employed as casuals.
7.	Has ZCS engaged the community throughout the project life?	√			5	Community engagement is being done within the farm area.
8.	Has ZCS development a HIV/AIDs sensitization activities for its workforce and local community?	√			5	The farm has engaged USAID in HIV/AIDS sensitization for its employees.
9.	Has ZCS liaised with ZEMA for the identification of any permits required for its operation with regards to storage and use of diesel?		√		0	Engagement with ZEMA has not been done on the types of permits required for the farm.
10.	Has ZCS implemented dust management measures to reduce dust along the roads and farming fields (during cultivation) as a continuous exercise?			√	3	This is been partially done. Dust suppression not conducted on all the roads within the farm.
11.	Has ZCS put onsite an emergency vehicle equipped with first aid to facilitate immediate health requirements for its employee before evacuation to Luanshya District for further medical treatment?			√	3	The Emergency Vehicle is present on site however, no first aid was observed within the vehicle.
12.	Has ZCS provided well equipped sanitary facilities for its employees?	√			5	Facilities within the farm were clean.
13.	Has ZCS implemented the reduction risk of malaria by spraying offices and work stations on site and providing mosquito nets to employees?	√			5	This program of spraying for Mosquitoes is being spearheaded by the Ministry of Health
15.	Has ZCS put up active desk HIV/AIDs information desk which will be available to					The farm has engaged USAID in HIV/AIDS sensitization for its employees.



*Environmental Audit Report for ISF sites*



	farm employees through the farm manager?	✓			5	
16.	Has ZCS provided insulation and automatic fault sensors to all electrical and mechanical gadgets?	✓			5	This is being done.
17.	Has ZCS created buffer zones around the farm with regards to woodland management?	✓			5	The farm has buffer zones within the fields and separates the fields with the woodlands.
18.	It is stated in the report that barren sites shall initially be planted with fast growing soil improvement plants such as nitrogen fixing tree species, has this been implemented?		✓		3	This is partially being done, just a few trees were observed being planted within the farm area.
19.	Has ZCS formulated and implemented the program to discourage farm employees against hunting wild animals for food?				N/A	
20.	Has ZCS provided a logbook of sightings on site record book of any animals seen during normal activities which has to be kept by the environmental officer to increase the awareness of farm employees about the fauna on farm?				N/A	
21.	Has the site clearance been restricted only to where it is necessary by ZCS?	✓			5	The clearance of vegetation is strictly done on the areas planned for cultivation.
22.	Has the extraction of fresh water from streams and rivers been minimized, has WARMA been consulted on the irrigation water rights by ZCS?	✓			4	The permit has been acquired and has been filed at the Headquarters. However, no documentation evidence was provided.
		<b>C=16</b>	<b>NC=4</b>	<b>PC=2</b>		

**Compliances=16**  
**Non-Compliances=4**  
**Partial Compliance=2**



Environmental Audit Report for ISF sites



S/N	World Bank Operational Policies	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	<b>Assessment and Management of Environmental and Social Impact risks</b> - Is the farm assessing, managing and monitoring environmental and social impacts and risks associated with the operations?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm. The farm lacks a disposal site for chemicals.
2.	<b>Pollution prevention and Abatement</b> – Is the farm avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and if possible/compensation/remediating significant adverse effects of objects?	√			5	The farm is avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and compensation.
3.	<b>Biodiversity and Ecosystems</b> - is the farm through the use of available data and early scanning and scoping process, determined the biodiversity footprint of the project and whether there are no go areas?	√			5	This has been done.
4.	<b>EIB Climate-Related Standards</b> -Is the farm management identifying and applying the necessary physical or soft measures at planning, designing and implementation stage of reduce these risks as well as to establish appropriate monitoring system to ensure the sustainability of the project?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm.
5.	<b>Cultural Heritage</b> Is the farm protecting cultural heritage from adverse impacts of project activities by promoting the cultural heritage impact assessment and management?	√			5	The farm is protecting the cultural heritage from adverse impacts within the farm.



Environmental Audit Report for ISF sites



Audited Facility: ZCS - Chitwi Luanshya		Auditor: IDSP Dickson Kabwe Moono Munkombwe Kanjelesha Michael Kabwe (IDSP)		ZCS Representative Frank Hachoombwa (O.I.C) Vincent Moombe (D.O.I.C) Innocent Kalwizhi		Audit Date (s): <b>28/09/2023</b>
6.	<b>Involuntary Resettlement-</b> Is the farm avoiding or at least minimise, project induced resettlement whenever feasible be exploring alternative project design?	√			5	No resettlement was done within the farm because the farm is the property of the Zambia Correction Service.
7.	<b>Rights and Interests of Vulnerable Groups-</b> Is the farm affirming, respecting and protecting the rights and interests of vulnerable individuals and groups within the designated operational scope, throughout the project lifecycle?	√			5	The rights and interests of vulnerable groups are being protected by the farm.
8.	<b>Labour Standards</b> Foster and realise non discriminating and fair and equal treatment and opportunity at work and ensure develop and maintain a sound worker management relationship?	√			5	A sound worker's management relationship was observed at the farm.
9.	<b>Occupational and Public Health Safety and Security-</b> Is the farm promoting and protecting the health and safety of employees at work throughout the project life recycle by ensuring safe, health, hygienic and secure working and accommodation conditions and effective, a working environment that respects and safe guards the rights to privacy and when appropriate, to the enjoyment of the highest attainable standard of physical and mental health of workers and their families( e.g in workers accommodation			√	3	Some workers in the farm were not in fully Proper Protective Proper Equipment.
10.	<b>Stakeholders Engagement-</b> Is the farm engaging stakeholders are properly identified and engaged a dialogue between the promoter, the affected communities and other interested parties throughout the project life cycle?	√			5	This is a continuous progress which the ZCS Farm is doing with the community surrounding the farm.
		<b>C=7</b>	<b>NC=0</b>	<b>PC=3</b>		





*Environmental Audit Report for ISF sites*



**Compliances=7**  
**Non-Compliances=0**  
**Partial Compliance=3**



# Environmental Audit Report for ISF sites



S/N	Pest Management Plan Commitment	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	Is there a PMP at the site?		√		0	The Pest Management Plan was not found at the farm.
2.	Is there a detailed implementation of the PMP for farms under production?		√		0	No detailed Implementation plan for the PMP was found at site.
3.	Is the farm compliant to the Environmental management (Licensing) Regulation?			√	3	No Pesticide and Toxic substance License has obtained. The storage facility for Pesticide is not labeled.
4.	Are areas that require compliance to aspects of the regulations	√			5	Yes.
5.	Are the Aspects identified compliance?			√	3	The storage facility for Pesticide is not labeled. Stocking of chemicals is not properly done.
6.	Is the Farm managing pest? by combining biological, cultural and physical and chemical tools in a way that minimize economic health and environmental risks pest control that are selected and applied in a manner that minimizes risks to human health beneficial and nontarget organisms and the environment?	√			5	The farm uses Chemicals to control pests.
7.	Is the farm Eliminating of significant threats caused by pests to the health and safety of patients' staff and the public?	√			5	The applying of pesticides on the crops is regulated and only applied once the pests are identified.
8.	Is the farm preventing the loss or damage to structures or property by pests?	√			5	There is no damaged observed or recorded to structures or property.
9.	Is the farm ensuring protection of environmental quality inside and outside buildings?	√			5	Being done.
10.	Is head of institution at having the IPMP at site?		√		0	The IPMP not found at the farm.



# Environmental Audit Report for ISF sites



11.	Is the farm following the IPM principles e.g prevention and suppression, monitoring, decision making nonchemical methods pesticide selection, reduced pesticide use anti-resistance strategies and evaluation?			√	3	This is partially being done. The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
12.	Is the farm applying the IMP decision making process on pest management? E.g problem or pest identification, determine the severity of the problem and action thresholds, assess management options, select and apply one more options, Evaluate result, measure the success of options employed and documentation record results.	√			4	Pest Management being followed at the Farm. Records are not documented for the measures taken and results.
13.	Has the farm planned for IMP	√			5	The IPMP is being followed at the farm.
14.	Is there any expert in charge of IPMP system?	√			5	Agriculture experts are employed at the farm.
15.	Has the farm employees had any training in IMP?		√		0	Non of the Employees have been trained in IPM.
16.	Is the farm practicing good husbandry?	√			5	
17.	Is the farm practicing crop rotation, inter- cropping and timing of planting/harvest?	√			5	Crop Rotation is being conducted at the farm. Wheat, Maize and Soya Beans.
18.	Is the farm purchasing improved varieties of seed or plant material?	√			5	Seed Variety was observed in the storage room.
19.	Is the farm practicing good water management to promote crop growth while avoiding excessive watering and standing water?	√			5	The farm is using an Irrigation system hence water use is not excessive.
20.	Is the farm removing any diseased and infested plants, both in growing crop and after harvest?	√			5	Scouting of pests and weeds are done everyday by the employees at the far.
21.	Is the farm removing weeds in the field?	√			5	Being done.
22.	Is the farm using mechanical, biological chemical?	√			5	The farm is using chemicals control for pests.
23.	Are the chemicals securely stored?	√			5	The Chemicals are kept under lock and Key.
		<b>C=16</b>	<b>NC=4</b>	<b>PC=3</b>		

**Compliances=16**  
**Non-Compliances=4**  
**Partial Compliance=3**



Environmental Audit Report for ISF sites



S/N	World bank operational policy (OP 4.09 – pest management commitment	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	Are the pesticides used at the farm have negligible adverse human health effects?	√			5	The pesticide used are registered for use in Zambia.
2.	Are the pesticides used at the farm effective against the target species?	√			5	The pesticides being used target the pests identified.
3.	Are the pesticides applied on the farm aim to minimize damage to natural enemies?	√			5	Pesticides used are applied to minimize damage
4.	Do the pesticide used at farm demonstrate to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them?	√			5	The Pesticide are classified as safe from the regulators.
5.	Are the pesticides taking into account the need to prevent the development of resistance in pests?	√			5	Yes. The pesticides are applied in the fields as and when the need is required.
6.	Are the pesticide manufactured package, labelled handled, stored, disposed of and applied according to world bank standards?			√	3	Partially, the chemicals being stored in the store room have not be properly stored and stacked. The used containers of the chemicals are not being properly disposed off.
		<b>C=5</b>	<b>NC=0</b>	<b>PC=1</b>		

**Compliances=5**

**Non-Compliances=0**

**Partial Compliance=1**



# Environmental Audit Report for ISF sites



S/N	Decision letter conditions	Level of Compliance			Performance	Comments or Observations
		C	NC	PC	Rating(1-5)	
1.	ZNS shall implement the project and all environmental management commitments as stated in the environmental project brief (EPB) <b>with changes</b> as proposed by the Zambia Environmental Management Agency (ZEMA) in the decision letter and any other conditions that may be issued thereafter?			√	3	The Environmental Management commitments have been partially followed. Some aspects of monitoring have not been done at the farm, such as soil and water monitoring.
2.	ZNS shall prior to project implementation, consult and comply in full with the conditions and specifications of the local authority, Ministry responsible for Lands, Ministry responsible for Agriculture, Water Resources Management Authority, Department of Forestry and other mandated authorities?			√	3	This has been partially done. Institutions such as Forestry Department have not fully consulted.
3.	The projects and related activities shall be implemented in such a way that public and private property, health and livelihood shall not be affected negatively, endangered, damaged, harmed or lost. Where is it determined that the health of people, property or livelihood is endangered, harmed, affected negatively, damaged or lost as a result of the project and/or related activities ZNS shall be liable for payments or settlement of appropriate compensation and other forms of relief or replacement?	√			5	The ZNS Musakamba Farm has not damaged any public or private property. No report has been recorded on any livelihood being endangered.



Environmental Audit Report for ISF sites



4.	ZNS shall put in place measures to protect water resources from damage or pollution, streams and their sources shall be protected?	√			5	The Musakamba Farm has put in place measures to protect the water resources such as the ensuring the chemicals applied are according to the need of the farm. Streams is 500m away from the farm.
5.	ZNS shall conduct compensatory reforestation programs in or other districts to offset the loss of vegetation from the project area?		√		0	No Compensatory reforestation programs were identified or implemented at the Farm.
6.	ZNS shall not conduct indiscriminate clearing of vegetation clearing shall only be limited to areas where operation will be conduct or where project facilities will have to be conducted. In order to avert soil erosion, where possible, stumping as opposed to uprooting shall be used and trees shall be replanted in sensitive areas to facilitate ecological restoration?	√			5	The Farm has only cleared vegetation where the fields are located.
7.	ZNS shall put in place appropriate measures for management of pesticides and toxic substances?			√	3	This has been partially done. The chemical facility has hazardous signage at the entrance and within the facility.
8.	ZNS shall ensure that solid waste and any other unwanted materials as a result of preparation, construction and operations works are collected and disposed of at a license waste disposal site?	√			5	ZNS Musakamba has engaged the Mkushi Council to collect and Dispose off Solid waste.
9.	ZNS should ensure all radioactive materials or materials containing radioactive substances shall be handled and/or disposed of appropriately?	√			5	Farm has not handled any radioactive materials during its operational.
10.	ZNS hazardous and other types of waste shall be managed appropriately by persons or companies licenced by Zambia Environmental Management Agency.		√		0	The Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container, Used Oil, Grease, Batteries.
11.	ZNS shall integrate appropriate drainage and erosion control measures in the development and operation					Farm has ensured that they prevent soil erosion by construction of drainages





# Environmental Audit Report for ISF sites



	of the project. Measures shall be put in place to prevent and control siltation of water bodies?	√			5	around the fields. Hence this helps in prevention of silting the water bodies.
12.	ZNS shall put in place measures or install and operate effective facilities for monitoring, preventing, controlling soil contamination, pollution of air and pollution of surface and ground water?			√	3	The Farm has not installed soil and air monitoring facilities at the Farm
13.	Are levels of noise and vibrations monitored and maintained within the appropriate limits?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
14.	Is ZNS ensuring that all incidents with potential to pollute the environment and/or harm human beings are reported to ZEMA immediately?	√			5	No Environmental Incident has occurred or being recorded at the farm.
15.	Is ZNS ensuring to preserve flora and fauna habitats in areas of the project site that will not be used for the project and related activities?	√			5	Vegetation clearance has been conducted only in areas requiring farming.
16.	Is Dust suppression being carried out in areas where dust will be generated?	√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
17.	Is ZNS conducting open are burning without written permission from the Zambia Environmental Agency?		√		0	Used pesticide containers are burnt at the farm and buried.
18.	Has ZNS obtain appropriate permits and licences from the Zambia Environmental Management Agency and comply with the requirement of the Environment Act, 2011 and the Environmental Management (Licence) Regulations, 2013?			√	3	The Farm requires needs to obtain a Pesticide and Toxic Substance for Storage and handling of Chemicals.
		<b>C=10</b>	<b>NC=3</b>	<b>PC=5</b>		

**Compliances=10**  
**Non-Compliances=3**  
**Partial Compliance=5**



# Environmental Audit Report for ISF sites



S/N	ESMP Commitment	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	Has ZNS the clearance of vegetation only to the designed area for irrigation?	√			5	Clearance of the vegetation has been restricted only in the area where cultivation of crops is being done.
	Has ZNS conducted awareness campaigns among staff and community on the need to conserve nature based on a well-developed overall awareness and sensitization institution program?	√			5	This is being done
	Has ZNS adopted strict good practices in conservation?			√	3	This is partially done. Tree planting has not been fully.
2.	Has ZNS been carrying out reforestation of the disturbed area designed places?			√	3	This is partially done. Tree planting has not been fully.
3.	Has ZNS movement of heavy machinery only to designed access routes and operational areas?	√			5	Access routes have been created for heavy machine.
	Has ZNS been ensuring that there is skill transfer through an elaborate programme?	√			5	Skill transfer has been observed, training on the operational of the machinery at the farm.
4.	Has ZNS categorised staff and each group to be supervised by dedicated skilled personnel to ensure on job training?	√			5	The Farm has supervisors in different sections of the farm.
5.	Has ZNS been encouraging job on training through observation and trial under supervision?	√			5	Skill transfer has been observed, training on the operational of the machinery at the farm.



Environmental Audit Report for ISF sites



Audited Facility:ZNS Mkushi-Musakamba	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZNS Representative Justin Muyoma (C.O) Joseph Kafuchilwa (Agric officer) Bernard Mwewa (Water Engineer)			Audit Date (s): 29/08/2023
6.	Has ZNS stuck to recommended dosage and frequency of application of Agro chemicals?	√			5	Application of Agro-chemicals is applied as and when it is necessary.
7.	Has ZNS ensured recommended types of Agro-chemicals are used?	√			5	The farm is being supplied by an accredited.
8.	Has ZNS been conducting awareness campaigns among the communities on dangers of Agro chemicals?	√			5	The community has been told on the dangers of Agro-chemicals from the suppliers of these chemicals.
9.	Has ZNS stuck to good practices of agricultural operational rules of minimizing water contamination?			√	3	This has been partially done. The farm is applying chemicals where necessary. However, surface and underground water is not being monitored or tested for contamination.
10.	Has ZNS ensured prior clearance of all deadwood/vegetation to designed areas, which might contaminate water especially during the rainy season?	√			5	Priority clearance of deadwood/vegetation is being conducted within the farm.
11.	Has ZNS employed disease vectors disruption techniques such as regulated reservoir operation to curb vectors for malaria and water borne diseases?	√			5	This program of spraying for Mosquitoes is being spearheaded by the Ministry of Health
12.	Has ZNS encouraged natural aquatic life that takes care of mosquito larva as part of the food chain?	√			5	Fish has been stocked in the dam to takes care of mosquito larva as part of the food chain.
13.	Has ZNS encouraged the community to have their own household latrines?	√			5	The community is aware of the construction of latrine.
14.	Has ZNS adopted a deliberate policy of giving employment priority to locals?	√			5	This is being done.
15.	Has ZNS designed on job training programmes?	√			5	The Farm has a job training programs for any new person.



Environmental Audit Report for ISF sites



Audited Facility:ZNS Mkushi-Musakamba	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZNS Representative Justin Muyoma (C.O) Joseph Kafuchilwa (Agric officer) Bernard Mwewa (Water Engineer)				Audit Date (s): 29/08/2023
16.	Has ZNS ensured skilled manpower is employed?	√				5	This has been done. Water Engineers, Agriculture Experts have been employed.
17.	Has ZNS ensured that waste is collected at selected points for proper disposal?			√		3	There are very few proper bins that were observed in the farm.
18.	Has ZNS ensured that some of the rubble will be used for compaction in the construction of the farm roads?					N/A	
19.	Has ZNS ensured that adequate facilities are provided for staff such as sanitation facilities?	√				5	The facilities are adequate for the staff.
20.	Has ZNS ensured that the irrigation scheme is operated in a professional manner?	√				5	This is being operated in a professional manner with expert staff engaged to run the farm.
21.	Has ZNS ensured that noise pollution is limited to project area to avoid noise pollution?	√				5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
22.	Has ZNS been undertaking the clearing just after the rain season before the soils are completely dry in order to reduce dust?	√				5	This is being done.
		C=20	NC=0	PC=4			

**Compliances=20**

**Non-Compliances=0**

**Partial Compliance=4**



# Environmental Audit Report for ISF sites



S/N	World bank Operational Policies	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	<b>Assessment and Management of Environmental and Social Impact risks-</b> Is the farm assessing, managing and monitoring environmental and social impacts and risks associated with the operations?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm. The farm lacks a disposal site for chemicals.
2.	<b>Pollution prevention and Abatement</b> – Is the farm avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and if possible/ compensation/remediating significant adverse effects of objects?	√			5	The farm is avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and compensation.
3.	<b>Biodiversity and Ecosystems-</b> is the farm through the use of available data and early scanning and scoping process, determined the biodiversity footprint of the project and whether there are no go areas?	√			5	This has been done.
4.	<b>EIB Climate-Related Standards-</b> Is the farm management identifying and applying the necessary physical or soft					



Environmental Audit Report for ISF sites



Audited Facility: ZNS- Mkushi Musakamba	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZNS Representative Justin Muyoma (C.O) Joseph Kafuchilwa (Agric officer) Bernard Mwewa (Water Engineer)				Audit Date (s): 29/08/2023
	measures at planning, designing and implementation stage of reduce these risks as well as to establish appropriate monitoring system to ensure the sustainability of the project?				√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm.
5.	<b>Cultural Heritage</b> Is the farm protecting cultural heritage from adverse impacts of project activities by promoting the cultural heritage impact assessment and management?		√			5	The farm is protecting the cultural heritage from adverse impacts within the farm.
6.	<b>Involuntary Resettlement-</b> Is the farm avoiding or at least minimise, project induced resettlement whenever feasible be exploring alternative project design?		√			5	No resettlement was done within the farm because the farm is the property of the Zambia National Service.
7.	<b>Rights and Interests of Vulnerable Groups-</b> Is the farm affirming, respecting and protecting the rights and interests of vulnerable individuals and groups within the designated operational scope, throughout the project lifecycle?		√				The rights and interests of vulnerable groups are being protected by the farm.
8.	<b>Labour Standards</b> Foster and realise non discriminating and fair and equal treatment and opportunity at work and ensure develop and maintain a sound worker management relationship?		√			5	A sound worker's management relationship was observed at the farm.
9.	<b>Occupational and Public Health Safety and Security-</b> Is the farm promoting and protecting the health						





Environmental Audit Report for ISF sites



Audited Facility: ZNS- Mkushi Musakamba	Auditor: Dickson Kabwe	IDSP Moono Munkombwe Kanjelesa Michael Kabwe (IDSP)	ZNS Representative Justin Muyoma (C.O) Joseph Kafuchilwa (Agric officer) Bernard Mwewa (Water Engineer)			Audit Date (s):  29/08/2023
	and safety of employees at work throughout the project life recycle by ensuring safe, health, hygienic and secure working and accommodation conditions and effective, a working environment that respects and safe guards the rights to privacy and when appropriate, to the enjoyment of the highest attainable standard of physical and mental health of workers and their families( e.g in workers accommodation.			√		Some workers in the farm were not in fully Proper Protective Proper Equipment.
10.	<b>Stakeholders Engagement-</b> Is the farm engaging stakeholders are properly identified and engaged a dialogue between the promoter, the affected communities and other interested parties throughout the project life cycle?	√			5	This is a continuous progress which the ZCS Farm is doing with the community surrounding the farm.
		<b>C=7</b>	<b>NC=0</b>	<b>PC=3</b>		

**Compliances=7**

**Non-Compliances=0**

**Partial Compliance=3**



Environmental Audit Report for ISF sites



S/N	Pest Management Plan Commitment	Level of Compliance			Performance Rating((1-5)	Comments or Observations
		C	NC	PC		
1.	Is there a PMP at the site?		√		0	The Pest Management Plan was not found at the farm.
2.	Is there a detailed implementation of the PMP for farms under production?		√		0	No detailed Implementation plan for the PMP was found at site.
3.	Is the farm compliant to the Environmental Management (Licensing) Regulation?			√	3	No Pesticide and Toxic substance License has obtained. The storage facility for Pesticide is not labeled.
4.	Are areas that require compliance to aspects of the regulations	√			5	Yes.
5.	Are the Aspects identified compliance?			√	3	The storage facility for Pesticide is not labeled. Stocking of chemicals is not properly done.
6.	Is the Farm managing pest? by combining biological, cultural and physical and chemical tools in a way that minimize economic health and environmental risks pest control that are selected and applied in a manner that minimizes risks to human health beneficial and nontarget organisms and the environment?	√			5	The farm uses Chemicals to control pests.
7.	Is the farm Eliminating of significant threats caused by	√			5	The applying of pesticides on the crops is regulated and only applied once the pests are identified.



Environmental Audit Report for ISF sites



Audited Facility:ZNS-Musakamba Farm	Auditor:		IDSP		ZNS Representative		Audit Date (s):
	Dickson Kabwe	Moono Munkombwe Kanjelesa	Justin Muyoma (C.O)		Joseph Kafuchilwa (Agric officer)		
			Michael Kabwe (IDSP)		Bernard Mwewa (Water Engineer)		29/08/2023
	pests to the health and safety of patients’ staff and the public?						
8.	Is the farm preventing the loss or damage to structures or property by pests?	√			5		There is no damaged observed or recorded to structures or property.
9.	Is the farm ensuring protection of environmental quality inside and outside buildings?	√			5		Being done.
10.	Is head of institution at having the IPMP at site?		√		0		The IPMP not found at the farm.
11.	Is the farm following the IPM principles e.g prevention and suppression, monitoring, decision making nonchemical methods pesticide selection, reduced pesticide use anti-resistance strategies and evaluation?			√	3		This is partially being done. The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
12.	Is the farm applying the IMP decision making process on pest management? E.g problem or pest identification, determine the severity of the problem and action thresholds, assess management options, select and apply one more options, Evaluate result, measure the success of options	√			4		Pest Management being followed at the Farm. Records are not documented for the measures taken and results.



Environmental Audit Report for ISF sites



Audited Facility:ZNS-Musakamba Farm	Auditor:		IDSP		ZNS Representative		Audit Date (s):
	Dickson Kabwe	Moono Munkombwe Kanjelesa	Justin Muyoma (C.O)		Joseph Kafuchilwa (Agric officer)		
	Michael Kabwe (IDSP)		Bernard Mwewa (Water Engineer)		29/08/2023		
	employed and documentation record results.						
13	Has the farm planned for IMP	√			5	The Integrated Pest Management is being followed at the farm.	
14	Is there any expertise of various fields in charge of IMP system?	√			5	Agriculture experts have been employed at the farm.	
15.	Has the farm employees had any training in IMP?		√		0	Non of the Employees have been trained in IPM.	
16.	Is the farm practicing good husbandry?	√			5		
17.	Is the farm practicing crop rotation, inter- cropping and timing of planting/harvest?	√			5	Crop Rotation is being conducted at the farm. Wheat, Maize and Soya Beans.	
18.	Is the farm purchasing improved varieties of seed or plant material?	√			5	Seed Variety was observed in the storage room.	
19.	Is the farm practicing good water management to promote crop growth while avoiding excessive watering and standing water?	√			5	The farm is using an Irrigation system hence water use is not excessive.	
20.	Is the farm removing any diseased and infested plants, both in growing crop and after harvest?	√			5	Scouting of pests and weeds are done everyday by the employees at the far.	
21.	Is the farm removing weeds in the field?	√			5	Being done.	
22.	Is the farm using mechanical, biological chemical?	√			5	The farm is using chemicals control for pests.	



*Environmental Audit Report for ISF sites*



Audited Facility: <b>ZNS-Musakamba Farm</b>	Auditor:		IDSP		ZNS Representative			Audit Date (s):
	Dickson Kabwe		Moono Munkombwe Kanjelesa		Justin Muyoma (C.O)			29/08/2023
			Michael Kabwe (IDSP)		Joseph Kafuchilwa (Agric officer)			
					Bernard Mwewa (Water Engineer)			
23.	Are the chemicals securely stored?		√				5	The Chemicals are kept under lock and Key.
			C=16	NC=4	PC=3			

**Compliances=16**  
**Non-Compliances=4**  
**Partial Compliance=3**



# Environmental Audit Report for ISF sites



S/N	World bank operational policy (OP 4.09 – pest management commitment)	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	Are the pesticides used at the farm have negligible adverse human health effects?	√			5	The pesticide used are registered for use in Zambia.
2.	Are the pesticides used at the farm effective against the target species?	√			5	The pesticides being used target the pests identified.
3.	Are the pesticides applied on the farm aim to minimize damage to natural enemies?	√			5	Pesticides used are applied to minimize damage
4.	Do the pesticide used at farm demonstrate to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them?	√			5	The Pesticide are classified as safe from the regulators.
5.	Are the pesticides taking into account the need to prevent the development of resistance in pests?	√			5	Yes. The pesticides are applied in the fields as and when the need is required.
6.	Are the pesticide manufactured package, labelled handled, stored, disposed of and applied according to world bank standards?			√	3	Partially, the chemicals being stored in the store room have not be properly stored and stacked. The used containers of the chemicals are not being properly disposed off.
		<b>C=5</b>	<b>NC=0</b>	<b>PC=1</b>		

**Compliances=5**

**Non-Compliances=0**

**Partial Compliance=1**





Environmental Audit Report for ISF sites



<b>Audited Facility:</b> ZCS Serenje Nansanga	<b>Auditor: IDSP</b> Dickson Kabwe Moono Munkombwe <b>ZCS Representative</b> Sylvester M. Kazembe (O.I.C) Michael Kabwe (IDSP) Gift Moono (D.O.I.C)					<b>Audit Date (s):</b> <b>30/09/2023</b>
S/N	Decision letter conditions	Level of Compliance			Performance	Comments or
		C	NC	PC	Rating(1-5)	Observations
1.	ZCS shall implement the project and all environmental management commitments as stated in the environmental project brief (EPB) <b>with changes</b> as proposed by the Zambia Environmental Management Agency (ZEMA) in the decision letter and any other conditions that may be issued thereafter?			√	3	The Environmental Management commitments have been partially followed. Some aspects of monitoring have not been done at the farm, such as soil and water monitoring.
2.	ZCS shall prior to project implementation, consult and comply in full with the conditions and specifications of the local authority, Ministry responsible for Lands, Ministry responsible for Agriculture, Water Resources Management Authority, Department of Forestry and other mandated authorities?			√	3	This has been partially done. Institutions such as Forestry Department have not fully consulted.
3.	The projects and related activities shall be implemented in such a way that public and private property, health and livelihood shall not be affected negatively, endangered, damaged, harmed or lost. Where is it determined that the health of people, property or livelihood is endangered, harmed, affected negatively, damaged or lost as a result of the project and/or related activities ZCS shall be liable for payments or settlement of appropriate compensation and other	√			5	The ZCS Musakamba Farm has not damaged any public or private property. No report has been recorded on any livelihood being endangered.



Audited Facility: ZCS Serenje Nansanga	Auditor: IDSP		ZCS Representative			Audit Date (s):
	Dickson Kabwe	Moono Munkombwe	Sylvester M. Kazembe (O.I.C)			30/09/2023
	forms of relief or replacement?					
4.	ZCS shall put in place measures to protect water resources from damage or pollution, streams and their sources shall be protected?	√			5	The Farm has put in place measures to protect the water resources such as the ensuring the chemicals applied are according to the need of the farm. Streams and Rivers are 2.5km away from the farm
5.	ZCS shall conduct compensatory reforestation programs in or other districts to offset the loss of vegetation from the project area?		√		0	No Compensatory reforestation programs were identified or implemented at the Farm.
6.	ZCS shall not conduct indiscriminate clearing of vegetation clearing shall only be limited to areas where operation will be conduct or where project facilities will have to be conducted. In order to avert soil erosion, where possible, stumping as opposed to uprooting shall be used and trees shall be replanted in sensitive areas to facilitate ecological restoration?	√			5	Farm has only cleared vegetation where the fields are located.
7.	ZCS shall put in place appropriate measures for management of pesticides and toxic substances?			√	3	This is being partially done. The chemical storage facility entrance is not labelled and Chemicals are not placed on pallets for ventilation purpose.
8.	ZCS shall ensure that solid waste and any other unwanted materials as a result of preparation, construction and operations works are collected and disposed of at a license waste disposal site?	√			5	The Farm has engaged the Serenje Council to collect and Dispose off Solid waste.
9.	ZCS should ensure all radioactive materials or materials containing radioactive substances	√			5	Farm has not handled any radioactive materials during its operational.



Environmental Audit Report for ISF sites



Audited Facility: ZCS Serenje Nansanga	Auditor: IDSP		ZCS Representative			Audit Date (s):
	Dickson Kabwe	Moono Munkombwe	Sylvester M. Kazembe (O.I.C) Michael Kabwe (IDSP) Gift Moono (D.O.I.C)			30/09/2023
	shall be handled and/or disposed of appropriately?					
10.	ZCS Hazardous and other types of waste shall be managed appropriately by persons or companies licenced by Zambia Environmental Management Agency.		√		0	The Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as Used Oil, Grease, Batteries.
11.	ZCS shall integrate appropriate drainage and erosion control measures in the development and operation of the project. Measures shall be put in place to prevent and control siltation of water bodies?			√	3	This has been partially done. Certain areas of the farm do not have drainages.
12.	ZCS shall put in place measures or install and operate effective facilities for monitoring, preventing, controlling soil contamination, pollution of air and pollution of surface and ground water?			√	3	ZCS Nansanga Farm has not installed soil and air monitoring facilities at the Farm.
13.	Are levels of noise and vibrations monitored and maintained within the appropriate limits?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
14.	Is ZCS ensuring that all incidents with potential to pollute the environment and/or harm human beings are reported to ZEMA immediately?	√			5	No Environmental Incident has occurred or being recorded at the farm.
15.	Is ZCS ensuring to preserve flora and fauna habitats in areas of the project site that will not be used for the project and related activities?	√			5	Vegetation clearance has been conducted only in areas requiring farming.
16.	Is Dust suppression being carried out in areas					Dust generation was not observed within the farm



Environmental Audit Report for ISF sites



<b>Audited Facility:</b> ZCS Serenje Nansanga		<b>Auditor:</b> IDSP Dickson Kabwe Moono Munkombwe Michael Kabwe (IDSP)		<b>ZCS Representative</b> Sylvester M. Kazembe (O.I.C) Gift Moono (D.O.I.C)		<b>Audit Date (s):</b> <b>30/09/2023</b>
	where dust will be generated?	√			5	because the farm currently has crops in the field.
17.	Is ZCS conducting open are burning without written permission from the Zambia Environmental Agency?		√		0	Used pesticide containers are burnt at the farm and buried.
18.	Has ZCS obtain appropriate permits and licences from the Zambia Environmental Management Agency and comply with the requirement of the Environment Act, 2011 and the Environmental Management (Licence) Regulations, 2013?			√	3	The Farm requires needs to obtain a Pesticide and Toxic Substance for Storage and handling of Chemicals.
		<b>C=9</b>	<b>NC=3</b>	<b>PC=6</b>		

**Compliances=9**

**Non-Compliances=3**

**Partial Compliance=6**



S/N	ESMP Commitment	Level of Compliance			Performance	Comments or Observations
		C	NC	PC	Rating(1-5)	
1.	Has ZCS implemented dust suppression measures to control any dust that may be generated during construction and operation phases?	√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
	Has ZCS been monitoring surface water for pollution levels?		√		0	The Testing of Surface and Underground water is not being done.
	Has ZCS minimized the use of excess chemicals on the land that can contaminate the soils and ground water?	√			5	The Farm only applies chemicals when it is necessary e.g. for pest control and weed control.
2.	Has ZCS implemented the noise suppression measures by ensuring earth moving and construction equipment are of high efficiency and well maintained including the checking and replacing of intake and exhaust silencers?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
3.	Has ZCS been preventing any form of soil pollution that may lead to degradation?	√			5	Application of chemicals has been minimized.
4.	Has ZCS been maintaining crop rotation on fields to enhance soil fertility?	√			5	Crop rotation is being exercised on the farm.
5.	Has ZCS been submitting the bi annual ground water sample results to ZEMA?		√		0	No Bi-annual report for ground water monitoring has been submitted to ZEMA.
6.	Has ZCS taken initiative to be employing local youths for manual labour?	√			5	The locals have are being employed. During harvesting period about 20 people are employed as casuals.
7.	Has ZCS engaged the community throughout the project life?	√			5	Community engaged is being done.



# Environmental Audit Report for ISF sites



8.	Has ZCS development a HIV/AIDs sensitization activities for its workforce and local community?	√			5	The sensitization activities is being done by Clinic staff within the farm.
9.	Has ZCS liaised with ZEMA for the identification of any permits required for its operation with regards to storage and use of diesel?		√		0	Engagement with ZEMA has not been done on the types of permits required for the farm
10.	Has ZCS implemented dust management measures to reduce dust along the roads and farming fields (during cultivation) as a continuous exercise?			√	3	This is been partially done. Dust suppression not conducted on all the roads within the farm.
11.	Has ZCS put onsite an emergency vehicle equipped with first aid to facilitate immediate health requirements for its employee before evacuation to Serenje District for further medical treatment?	√			5	The farm has an ambulance equipped with first aid to facilitate immediate health requirements for its employee.
12.	Has ZCS provided well equipped sanitary facilities for its employees?	√			5	
13.	Has ZCS implemented the reduction risk of malaria by spraying offices and work stations on site and providing mosquito nets to employees?	√			5	This is being conducted hand in hand with Ministry of Health.
15.	Has ZCS put up active desk HIV/AIDs information desk which will be available to farm employees through the farm manager?	√			5	This is being done by the Clinic staff within the farm.
16.	Has ZCS provided insulation and automatic fault sensors to all electrical and mechanical gadgets?	√			5	Insulation on all the electrical wires has been done nad automatic fault sensors installed.
17.	Has ZCS created buffer zones around the farm with regards to woodland management?	√			5	Buffer zones have been created for wood management.
18.	It is stated in the report that barren sites shall initially be planted with fast growing soil improvement plants such			√		This is partially being done, just a few trees were observed being





	as nitrogen fixing tree species, has this been implemented?					planted within the farm area.
19.	Has ZCS formulated and implemented the program to discourage farm employees against hunting wild animals for food?				N/A	
20.	Has ZCS provided a logbook of sightings on site record book of any animals seen during normal activities which has to be kept by the environmental officer to increase the awareness of farm employees about the fauna on farm?				N/A	
21.	Has the site clearance been restricted only to where it is necessary by ZCS?	√			5	The clearing of vegetation has on been done in areas where cultivation is being conducted.
22.	Has the extraction of fresh water from streams and rivers been minimized, has WARMA been consulted on the irrigation water rights by ZCS?			√	3	Consultation with WARMA has been done but permits have not been acquired.
		<b>C=15</b>	<b>NC=3</b>	<b>PC=3</b>		

**Compliances=15**

**Non-Compliances=3**

**Partial Compliance=3**



<b>Audited Facility: ZNS-Serenje Nansanga</b>	<b>Auditor: IDSP</b> Dickson Kabwe Moono Munkombwe Michael Kabwe (IDSP) <b>ZCS Representative</b> Sylvester M. Kazembe (O.I.C) Gift Moono (D.O.I.C)					<b>Audit Date (s):</b> <b>30/09/2023</b>
<b>S/N</b>	<b>World Bank Operational Policies</b>	<b>Level of Compliance</b>			<b>Performance</b>	<b>Comments or Observations</b>
		<b>C</b>	<b>NC</b>	<b>PC</b>	<b>Rating(1-5)</b>	
1.	<b>Assessment and Management of Environmental and Social Impact risks-</b> Is the farm assessing, managing and monitoring environmental and social impacts and risks associated with the operations?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm. The farm lacks a disposal site for chemicals.
2.	<b>Pollution prevention and Abatement</b> – Is the farm avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and if possible/compensation/remediating significant adverse effects of objects?	√			5	The farm is avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and compensation.
3.	<b>Biodiversity and Ecosystems-</b> is the farm through the use of available data and early scanning and scoping process, determined the biodiversity footprint of the project and whether there are no go areas?	√			5	This is being done.
4.	<b>EIB Climate-Related Standards-</b> Is the farm management identifying and applying the necessary physical or soft measures at planning, designing and implementation stage of reduce these risks as well as to establish appropriate monitoring system to ensure the sustainability of the project?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm.
5.	<b>Cultural Heritage</b> Is the farm protecting cultural heritage from adverse impacts of project activities by promoting the cultural heritage impact assessment and management?	√			5	The farm is protecting the cultural heritage from adverse impacts within the farm.
6	<b>Involuntary Resettlement-</b> Is the farm avoiding or at least minimise, project induced resettlement whenever feasible	√			5	The farm did not have any Involuntary Resettlement.



	be exploring alternative project design?					
7.	<b>Rights and Interests of Vulnerable Groups-</b> Is the farm affirming, respecting and protecting the rights and interests of vulnerable individuals and groups within the designated operational scope, throughout the project lifecycle?	√			5	The rights and interests of vulnerable groups are being protected by the farm.
8	<b>Labour Standards</b> Foster and realise non discriminating and fair and equal treatment and opportunity at work and ensure develop and maintain a sound worker management relationship?	√			5	A sound worker's management relationship was observed at the farm.
9	<b>Occupational and Public Health Safety and Security-</b> Is the farm promoting and protecting the health and safety of employees at work throughout the project life cycle by ensuring safe, health, hygienic and secure working and accommodation conditions and effective, a working environment that respects and safe guards the rights to privacy and when appropriate, to the enjoyment of the highest attainable standard of physical and mental health of workers and their families( e.g in workers accommodation			√	3	Some workers in the farm were not in fully Proper Protective Proper Equipment.
10.	<b>Stakeholders Engagement-</b> Is the farm engaging stakeholders are properly identified and engaged a dialogue between the promoter, the affected communities and other interested parties throughout the project life cycle?	√			5	This is a continuous progress which the ZCS Farm is doing with the community surrounding the farm.
		<b>C=7</b>	<b>NC=0</b>	<b>PC=3</b>		

**Compliances=7**

**Non-Compliances=0**

**Partial Compliance=3**



Environmental Audit Report for ISF sites



S/N	Pest Management Plan Commitment	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	Is there a PMP at the site?		√		0	The Pest Management Plan was not found at the farm.
2.	Is there a detailed implementation of the PMP for farms under production?		√		0	No detailed Implementation plan for the PMP was found at site.
3.	Is the farm compliant to the Environmental management (licensing) Regulation?			√	3	No Pesticide and Toxic substance License has obtained. The storage facility for Pesticide is not labeled.
4	Are areas that require compliance to aspects of the regulations.	√			5	Yes.
5	Are the Aspects identified compliance?			√	3	The storage facility for Pesticide is not labeled. Stocking of chemicals is not properly done.
6	Is the Farm managing pest? by combining biological, cultural and physical and chemical tools in a way that minimize economic health and environmental risks pest control that are selected and applied in a manner that minimizes risks to human health beneficial and nontarget organisms and the environment?	√			5	The farm uses Chemicals to control pests.
7.	Is the farm Eliminating of significant threats caused by pests to the health and safety of patients' staff and the public?	√			5	The applying of pesticides on the crops is regulated and only applied once the pests are identified.
8	Is the farm preventing the loss or damage to structures or property by pests?	√			5	There is no damaged observed or recorded to structures or property.



9	Is the farm ensuring protection of environmental quality inside and outside buildings?	√			5	This is being done.
10	Is head of institution at having the IPMP at site?		√		0	The IPMP not found at the farm.
11	Is the farm following the IPM principles e.g prevention and suppression, monitoring, decision making nonchemical methods pesticide selection, reduced pesticide use anti-resistance strategies and evaluation?			√	3	This is partially being done. The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
12	Is the farm applying the IMP decision making process on pest management? E.g problem or pest identification, determine the severity of the problem and action thresholds, assess management options, select and options employed and documentation record results.	√				Pest Management being followed at the Farm. Records are not documented for the measures taken and results.
13	Has the farm planned for IMP	√			5	The Integrated Pest Management is being followed at the farm.
14	Is there any expertise of various fields in charge of IMP system?	√			5	Agriculture experts have been employed at the farm.
15	Has the farm employees had any training in IMP?		√		0	Non of the Employees have been trained in IPM.
16	Is the farm practicing good husbandry?				N/A	
17	Is the farm practicing crop rotation, inter- cropping and timing of planting/harvest?	√			5	Crop rotation is being done in the fields.
18	Is the farm purchasing improved varieties of seed or plant material?	√			5	Seed Variety was observed in the storage room.
19	Is the farm practicing good water management to promote crop growth while avoiding excessive watering and standing water?	√			5	The farm is using an Irrigation system hence water use is not excessive.



*Environmental Audit Report for ISF sites*



20	Is the farm removing any diseased and infested plants, both in growing crop and after harvest?	√			5	Scouting of pests and weeds are done everyday by the employees at the farm.
21	Is the farm removing weeds in the field?	√			5	This is being done.
22	Is the farm using mechanical, biological, chemical?	√			5	The farm is using chemicals control for pests.
23	Are the chemicals securely stored?	√			5	The Chemicals are kept under lock and Key.
		<b>C=15</b>	<b>NC=4</b>	<b>PC=3</b>		

**Compliances=15**

**Non-Compliances=4**

**Partial Compliance=3**





S/N	World bank operational policy (OP 4.09 – Pest Management Commitment)	Level of Compliance			Performance Rating(1-5)	Comments or Observations
		C	NC	PC		
1.	Are the pesticides used at the farm have negligible adverse human health effects?	✓			5	The pesticide used are registered for use in Zambia.
2.	Are the pesticides used at the farm effective against the target species?	✓			5	The pesticides being used target the pests identified.
3.	Are the pesticides applied on the farm aim to minimize damage to natural enemies?	✓			5	Pesticides used are applied to minimize damage.
4.	Do the pesticide used at farm demonstrate to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them?	✓			5	The Pesticide are classified as safe from the regulators.
5.	Are the pesticides taking into account the need to prevent the development of resistance in pests?			✓	3	Yes. The pesticides are applied in the fields as and when the need is required.
6.	Are the pesticide manufactured package, labelled handled, stored, disposed of and applied according to world bank standards?			✓	3	Partially, the chemicals being stored in the store room have not be properly stored and stacked. The used containers of the chemicals are not being properly disposed off.
		<b>C=4</b>	<b>NC=0</b>	<b>PC=2</b>		

**Compliances=4**

**Non-Compliances=0**

**Partial Compliance=2**



<b>Audited Facility:</b> ZNS <b>Mpika Irrigation</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Charles Chinyimba Captain</li><li>• M. Mukwela Crops Officer</li><li>• J. Mpashi wing Agric</li><li>• S. Chimbini Wing Irrigation</li></ul>					<b>Audit Date (s):</b>  <b>31/09/2023</b>
S/N	Decision letter conditions	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	ZNS shall implement the project and all environmental management commitments as stated in the environmental project brief (EPB) <b>with changes</b> as proposed by the Zambia Environmental Management Agency (ZEMA) in the decision letter and any other conditions that may be issued thereafter?			√	3	The Environmental Management commitments have been partially followed. Some aspects of monitoring have not been done at the farm, such as soil and water monitoring.
2.	ZNS shall prior to project implementation, consult and comply in full with the conditions and specifications of the local authority, Ministry responsible for Lands, Ministry responsible for Agriculture, Water Resources Management Authority, Department of Forestry and other mandated authorities?			√	3	This has been partially done. Institutions such as Forestry Department and WARMA have not fully consulted.
3.	The projects and related activities shall be implemented in such a way that public and private property, health and livelihood shall not be affected negatively, endangered, damaged, harmed or lost. Where is it determined that the health of people, property or livelihood is	√			5	The ZNS Farm has not damaged any public or private property. No report has been recorded on any livelihood being endangered.



<b>Audited Facility:</b> ZNS <b>Mpika Irrigation</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"> <li>• Moono Munkombwe Kanjelesa (IDSP)</li> <li>• Michael Kabwe (IDSP)</li> <li>• Charles Chinyimba Captain</li> <li>• M. Mukwela Crops Officer</li> <li>• J. Mpashi wing Agric</li> </ul> S. Chimbini Wing Irrigation					<b>Audit Date (s):</b>  <b>31/09/2023</b>
	endangered, harmed, affected negatively, damaged or lost as a result of the project and/or related activities ZNS shall be liable for payments or settlement of appropriate compensation and other forms of relief or replacement?					
4.	ZNS shall put in place measures to protect water resources from damage or pollution, streams and their sources shall be protected?	√			5	The Farm has put in place measures to protect the water resources such as the ensuring the chemicals applied are according to the need of the farm. Streams is 1km away from the farm.
5.	ZNS shall conduct compensatory reforestation programs in or other districts to offset the loss of vegetation from the project area?		√		0	No Compensatory reforestation programs were identified or implemented at the Farm.
6.	ZNS shall not conduct indiscriminate clearing of vegetation clearing shall only be limited to areas where operation will be conducted or where project facilities will have to be conducted. In order to avert soil erosion, where possible, stumping as opposed to uprooting shall be used and trees shall be replanted in sensitive areas to facilitate ecological restoration?	√			5	The Farm has only cleared vegetation where the fields are located.
7.	ZNS shall put in place appropriate measures for management of pesticides and toxic substances?			√	3	This has been partially done. The chemical facility has hazardous signage at the entrance and within the facility.



Audited Facility: ZNS Mpika Irrigation	Auditor: Dickson Kabwe					Audit Date (s):  31/09/2023
	IDSP and ZNS Representative <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Charles Chinyimba Captain</li><li>• M. Mukwela Crops Officer</li><li>• J. Mpashi wing Agric</li></ul> S. Chimbini Wing Irrigation					
8.	ZNS shall ensure that solid waste and any other unwanted materials as a result of preparation, construction and operations works are collected and disposed of at a license waste disposal site?	√			5	ZNS Mpika has engaged the Mpika Council to collect and Dispose off Solid waste.
9.	ZNS should ensure all radioactive materials or materials containing radioactive substances shall be handled and/or disposed of appropriately?	√			5	Farm has not handled any radioactive materials during its operational.
10.	ZNS hazardous and other types of waste shall be managed appropriately by persons or companies licenced by Zambia Environmental Management Agency		√		0	The Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container, Used Oil, Grease, Batteries.
11.	ZNS shall integrate appropriate drainage and erosion control measures in the development and operation of the project. Measures shall be put in place to prevent and control siltation of water bodies?	√			5	Farm has ensured that they prevent soil erosion by construction of drainages around the fields. Hence this helps in prevention of silting the water bodies.
12.	ZNS shall put in place measures or install and operate effective facilities for monitoring, preventing, controlling soil contamination, pollution of air and pollution of surface and ground water?			√	3	The Farm has not installed soil and air monitoring facilities at the Farm.
13.	Are levels of noise and vibrations monitored and maintained within the appropriate limits?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating



Audited Facility: ZNS Mpika Irrigation	Auditor: Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"> <li>• Moono Munkombwe Kanjelesa (IDSP)</li> <li>• Michael Kabwe (IDSP)</li> <li>• Charles Chinyimba Captain</li> <li>• M. Mukwela Crops Officer</li> <li>• J. Mpashi wing Agric</li> <li>S. Chimbini Wing Irrigation</li> </ul>	Audit Date (s):  <b>31/09/2023</b>				
						activities area seasonal and not continuous.
14.	Is ZNS ensuring that all incidents with potential to pollute the environment and/or harm human beings are reported to ZEMA immediately?	√			5	No Environmental Incident has occurred or being recorded at the farm.
15.	Is ZNS ensuring to preserve flora and fauna habitats in areas of the project site that will not be used for the project and related activities?	√			5	Vegetation clearance has been conducted only in areas requiring farming.
16.	Is Dust suppression being carried out in areas where dust will be generated?	√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
17.	Is ZNS conducting open are burning without written permission from the Zambia Environmental Agency?		√		0	Used pesticide containers are burnt at the farm and buried.
18.	Has ZNS obtain appropriate permits and licences from the Zambia Environmental Management Agency and comply with the requirement of the Environment Act, 2011 and the Environmental Management (Licence) Regulations, 2013?			√	3	The Farm requires needs to obtain a Pesticide and Toxic Substance for Storage and handling of Chemicals.
		<b>C=10</b>	<b>NC=3</b>	<b>PC=5</b>		

**Compliances=10**  
**Non-Compliances=3**  
**Partial Compliance=5**



<b>Audited Facility:</b>  ZNS-Mpika  Irrigation	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Charles Chinyimba Captain</li><li>• M. Mukwela Crops Officer</li><li>• J. Mpashi wing Agric</li><li>• S. Chimbini Wing Irrigation</li></ul>					<b>Audit Date (s):</b>  31/08/2023
S/N	ESMP Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
23.	Has ZNS the clearance of vegetation only to the designed area for irrigation?	√			5	Clearance of the vegetation has been restricted only in the area where cultivation of crops is being done.
	Has ZNS conducted awareness campaigns among staff and community on the need to conserve nature based on a well-developed overall awareness and sensitization institution program?	√			5	This is being done
	Has ZNS adopted strict good practices in conservation?			√	3	This is partially done. Tree planting has not been fully.
24.	Has ZNS been carrying out reforestation of the disturbed area designed places?			√	3	This is partially done. Tree planting has not been fully.
25.	Has ZNS movement of heavy machinery only to designed access routes and operational areas?	√			5	Access routes have been created for heavy machine.
	Has ZNS been ensuring that there is skill transfer through an elaborate programme?	√			5	Skill transfer has been observed, training on the operational of the machinery at the farm.
26.	Has ZNS categorised staff and each group to be supervised by dedicated skilled personnel to ensure on job training?	√			5	The Farm has supervisors in different sections of the farm.
27.	Has ZNS been encouraging job on training through observation and trial under supervision?	√			5	Skill transfer has been observed, training on the operational of the machinery at the farm.
28.	Has ZNS stuck to recommended dosage and	√			5	Application of Agro-chemicals is applied as





	frequency of application of Agro chemicals?					and when it is necessary.
29.	Has ZNS ensured recommended types of Agro-chemicals are used?	√			5	The farm is being supplied by an accredited.
30.	Has ZNS been conducting awareness campaigns among the communities on dangers of Agro chemicals?	√			5	The community has been told on the dangers of Agro-chemicals from the suppliers of these chemicals.
31.	Has ZNS stuck to good practices of agricultural operational rules of minimizing water contamination?			√	3	This has been partially done. The farm is applying chemicals where necessary. However, surface and underground water is not being monitored or tested for contamination.
32.	Has ZNS ensured prior clearance of all deadwood/vegetation to designed areas, which might contaminate water especially during the rainy season?	√			5	Priority clearance of deadwood/vegetation is being conducted within the farm.
33.	Has ZNS employed disease vectors disruption techniques such as regulated reservoir operation to curb vectors for malaria and water borne diseases?	√			5	This program of spraying for Mosquitoes is being spearheaded by the Ministry of Health
34.	Has ZNS encouraged natural aquatic life that takes care of mosquito larva as part of the food chain?	√			5	Fish has been stocked in the dam to takes care of mosquito larva as part of the food chain.
35.	Has ZNS encouraged the community to have their own household latrines?	√			5	The community is aware of the construction of latrine.
36.	Has ZNS adopted a deliberate policy of giving employment priority to locals?	√			5	This is being done.
37.	Has ZNS designed on job training programmes?	√			5	The Farm has a job training programs for any new person.
38.	Has ZNS ensured skilled manpower is employed?	√			5	This has been done. Water Engineers, Agriculture Experts have been employed.
39.	Has ZNS ensured that waste is collected at selected points for proper disposal?			√	3	There are very few proper bins that were observed in the farm.



40.	Has ZNS ensured that some of the rubble will be used for compaction in the construction of the farm roads?				N/A	
41.	Has ZNS ensured that adequate facilities are provided for staff such as sanitation facilities?	√			5	The facilities are adequate for the staff.
42.	Has ZNS ensured that the irrigation scheme is operated in a professional manner?	√			5	This is being operated in a professional manner with expert staff engaged to run the farm.
43.	Has ZNS ensured that noise pollution is limited to project area to avoid noise pollution?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
44.	Has the extraction of fresh water from streams and rivers been minimized, has WARMA been consulted on the irrigation water rights by ZNS?			√	3	Consultation with WARMA has been done but permits have not been acquired.
		<b>C=19</b>	<b>NC=0</b>	<b>PC=5</b>		

**Compliances=19**

**Non-Compliances=0**

**Partial Compliance=4**



<b>Audited Facility:</b>  ZNS-Mpika Irrigation	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"> <li>• Moono Munkombwe Kanjelesa (IDSP)</li> <li>• Michael Kabwe (IDSP)</li> <li>• Charles Chinyimba Captain</li> <li>• M. Mukwela Crops Officer</li> <li>• J. Mpashi wing Agric</li> <li>• S. Chimbini Wing Irrigation</li> </ul>				<b>Audit Date (s):</b>  <b>31/08/2023</b>
S/N	World Bank Operational Policies	Level of Compliance		Performance Rating(1-5)	Comments or Observations
		C	NC		
1.	<b>Assessment and Management of Environmental and Social Impact risks-</b> Is the farm assessing, managing and monitoring environmental and social impacts and risks associated with the operations?			<div>√</div> 3	Monitoring of the soil, surface and underground water is not being conducted at the farm. The farm lacks a disposal site for chemicals.
2.	<b>Pollution prevention and Abatement</b> – Is the farm avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and if possible/compensation/remedying significant adverse effects of objects?	<div>√</div>		5	The farm is avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and compensation.
3.	<b>Biodiversity and Ecosystems-</b> is the farm through the use of available data and early scanning and scoping process, determined the biodiversity footprint of the project and whether there are no go areas?	<div>√</div>		5	This has been done.
4.	<b>EIB Climate-Related Standards-</b> Is the farm management identifying and				Monitoring of the soil, surface and



	applying the necessary physical or soft measures at planning, designing and implementation stage of reduce these risks as well as to establish appropriate monitoring system to ensure the sustainability of the project?			√	3	underground water is not being conducted at the farm.
5.	<b>Cultural Heritage</b> Is the farm protecting cultural heritage from adverse impacts of project activities by promoting the cultural heritage impact assessment and management?	√			5	The farm is protecting the cultural heritage from adverse impacts within the farm.
6.	<b>Involuntary Resettlement-</b> Is the farm avoiding or at least minimise, project induced resettlement whenever feasible be exploring alternative project design?	√			5	No resettlement was done within the farm because the farm is the property of the Zambia National Service.
7.	<b>Rights and Interests of Vulnerable Groups-</b> Is the farm affirming, respecting and protecting the rights and interests of vulnerable individuals and groups within the designated operational scope, throughout the project lifecycle?	√			5	The rights and interests of vulnerable groups are being protected by the farm.
8.	<b>Labour Standards</b> Foster and realise non discriminating and fair and equal treatment and opportunity at work and ensure develop and maintain a sound worker management relationship?	√			5	A sound worker's management relationship was observed at the farm.



9.	<b>Occupational and Public Health Safety and Security-</b> Is the farm promoting and protecting the health and safety of employees at work throughout the project life cycle by ensuring safe, health, hygienic and secure working and accommodation conditions and effective, a working environment that respects and safe guards the rights to privacy and when appropriate, to the enjoyment of the highest attainable standard of physical and mental health of workers and their families( e.g in workers accommodation.			√	3	Some workers in the farm were not in fully Proper Protective Proper Equipment.
10.	<b>Stakeholders Engagement-</b> Is the farm engaging stakeholders are properly identified and engaged a dialogue between the promoter, the affected communities and other interested parties throughout the project life cycle?	√			5	This is a continuous progress which the ZNS Farm is doing with the community surrounding the farm.
		<b>C=7</b>	<b>NC=0</b>	<b>PC=3</b>		

**Compliances=7**

**Non-Compliances=0**

**Partial Compliance=3**



<b>Audited Facility:</b>  <b>ZNS-Mpika Irrigation</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Charles Chinyimba Captain</li><li>• M. Mukwela Crops Officer</li><li>• J. Mpashi wing Agric</li><li>• S. Chimbini Wing Irrigation</li></ul>		<b>Audit Date (s):</b>  31/08/2023			
S/N	Pest Management Plan Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Is there a PMP at the site?		✓		0	The Pest Management Plan was not found at the farm.
2.	Is there a detailed implementation of the PMP for farms under production?		✓		0	No detailed Implementation plan for the PMP was found at site.
3.	Is the farm compliant to the Environmental Management (Licensing) Regulation?			✓	3	No Pesticide and Toxic substance License has obtained. The storage facility for Pesticide is not labeled.
4.	Are areas that require compliance to aspects of the regulations	✓			5	Yes.
5.	Are the Aspects identified compliance?			✓	3	The storage facility for Pesticide is not labeled. Stocking of chemicals is not properly done.
6.	Is the Farm managing pest? by combining biological, cultural and physical and chemical tools in a way that minimize economic health and environmental risks pest control that are selected and applied in a manner that minimizes risks to human health beneficial and	✓			5	The farm uses Chemicals to control pests.





	nontarget organisms and the environment?					
7.	Is the farm Eliminating of significant threats caused by pests to the health and safety of patients' staff and the public?	✓			5	The applying of pesticides on the crops is regulated and only applied once the pests are identified.
8.	Is the farm preventing the loss or damage to structures or property by pests?	✓			5	There is no damaged observed or recorded to structures or property.
9.	Is the farm ensuring protection of environmental quality inside and outside buildings?	✓			5	Being done.
10.	Is head of institution at having the IPMP at site?		✓		0	The IPMP not found at the farm.
11.	Is the farm following the IPM principles e.g prevention and suppression, monitoring, decision making nonchemical methods pesticide selection, reduced pesticide use anti-resistance strategies and evaluation?			✓	3	This is partially being done. The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
12.	Is the farm applying the IMP decision making process on pest management? E.g problem or pest identification, determine the severity of the problem and action thresholds, assess management options, select and apply one more options, Evaluate result, measure the success of options employed and documentation record results.	✓			4	Pest Management being followed at the Farm. Records are not documented for the measures taken and results.



13	Has the farm planned for IMP	✓			5	The Integrated Pest Management is being followed at the farm.
14	Is there any expertise of various fields in charge of IMP system?	✓			5	Agriculture experts have been employed at the farm.
15.	Has the farm employees had any training in IMP?		✓		0	Non of the Employees have been trained in IPM.
16.	Is the farm practicing good husbandry?				N/A	
17.	Is the farm practicing crop rotation, inter-cropping and timing of planting/harvest?	✓			5	Crop Rotation is being conducted at the farm. Wheat, Maize and Soya Beans.
18.	Is the farm purchasing improved varieties of seed or plant material?	✓			5	Seed Variety was observed in the storage room.
19.	Is the farm practicing good water management to promote crop growth while avoiding excessive watering and standing water?	✓			5	The farm is using an Irrigation system hence water use is not excessive.
20.	Is the farm removing any diseased and infested plants, both in growing crop and after harvest?	✓			5	Scouting of pests and weeds are done everyday by the employees at the far.
21.	Is the farm removing weeds in the field?	✓			5	Being done.
22.	Is the farm using mechanical, biological chemical?	✓			5	The farm is using chemicals control for pests.
23.	Are the chemicals securely stored?	✓			5	The Chemicals are kept under lock and Key.
		<b>C=15</b>	<b>NC=4</b>	<b>PC=3</b>		

**Compliances=15**

**Non-Compliances=4**

**Partial Compliance=3**



<b>Audited Facility:</b> <b>ZNS-Mpika Irrigation</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Charles Chinyimba Captain</li><li>• M. Mukwela Crops Officer</li><li>• J. Mpashi wing Agric</li></ul> S. Chimbini Wing Irrigation					<b>Audit Date (s):</b>  <b>31/08/2023</b>
S/N	World bank operational policy (OP 4.09 – pest management commitment	Level of Compliance			Performance	Comments or Observations
		C	NC	PC	Rating(1-5)	
1.	Are the pesticides used at the farm have negligible adverse human health effects?			✓	3	The pesticide used are have minimal adverse human health effects.
2.	Are the pesticides used at the farm effective against the target species?	✓			5	The pesticides being used target the pests identified.
3.	Are the pesticides applied on the farm aim to minimize damage to natural enemies?	✓			5	Pesticides used are applied to minimize damage
4.	Do the pesticide used at farm demonstrate to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them?	✓			5	The Pesticide are classified as safe from the regulators.
5.	Are the pesticides taking into account the need to prevent the development of resistance in pests?	✓			5	Yes. The pesticides are applied in the fields as and when the need is required.
6.	Are the pesticide manufactured package, labelled handled, stored, disposed of and applied according to world bank standards?			✓	3	Partially, the chemicals being stored in the store room have not be properly stored and stacked. The used containers of the chemicals are not being properly disposed off.
		C=4	NC=0	PC=2		

**Compliances=4**

**Non-Compliances=0**

**Partial Compliance=2**



<b>Audited Facility:</b> ZNS <b>Mpika Shed</b>	<b>Auditor:</b> Dickson Kabwe <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Charles Chinyimba Captain</li><li>• M. Mukwela Crops Officer</li><li>• J. Mpashi wing Agric</li><li>• S. Chimbini Wing Irrigation</li></ul>					<b>Audit Date (s):</b> <b>31/08/2023</b>
S/N	Decision letter conditions	Level of Compliance			Performance	Comments or
		C	NC	PC	Rating(1-5)	Observations
1.	ZNS shall implement the project and all environmental management commitments as stated in the environmental project brief (EPB) <b>with changes</b> as proposed by the Zambia Environmental Management Agency (ZEMA) in the decision letter and any other conditions that may be issued thereafter?	√			5	The storage shed has been implemented as provided in the Environmental Project Brief.
2.	ZNS shall prior to project implementation, consult and comply in full with the conditions and specifications of the local authority, Ministry responsible for Lands, Ministry responsible for Agriculture, Water Resources Management Authority, Department of Forestry and other mandated authorities?	√			5	The applicable institution have been consulted.
3.	The projects and related activities shall be implemented in such a way that public and private property, health and livelihood shall not be affected negatively, endangered, damaged, harmed or lost. Where is it determined that the health of people, property or livelihood is endangered, harmed, affected negatively, damaged or lost as a result of the project and/or related activities ZCS shall be lied for payments or settlement of appropriate compensation and other forms of relief or replacement?	√			5	The ZNS Farm has not damaged any public or private property. No report has been recorded on any livelihood being endangered.



4.	ZNS shall put in place measures to protect water resources from damage or pollution, streams and their sources shall be protected?	✓			5	The Farm has put in place measures to protect the water resources such as the ensuring the storage shed is 1km away from the stream.
5.	ZNS shall conduct compensatory reforestation programs in or other districts to offset the loss of vegetation from the project area?			✓	3	The storage shed was constructed on a minimal size of land about 50m x 30m. Hence the impact on the vegetation is minimal.
6.	ZNS shall not conduct indiscriminate clearing of vegetation clearing shall only be limited to areas where operation will be conduct or where project facilities will have to be conducted. In order to avert soil erosion, where possible, stumping as opposed to uprooting shall be used and trees shall be replanted in sensitive areas to facilitate ecological restoration?	✓			5	The Vegetation clearance was only restricted in the area of interest where the shed was built.
7.	ZNS shall put in place appropriate measures for management of pesticides and toxic substances?	✓			5	Currently, the shed is only storing wheat and soyabeans.
8.	ZNS shall ensure that solid waste and any other unwanted materials as a result of preparation, construction and operations works are collected and disposed of at a license waste disposal site?			✓	3	This has been partially done because of the some waste that was not collected.
9.	ZNS should ensure all radioactive materials or materials containing radioactive substances shall be handled and/or disposed of appropriately?	✓			5	Farm has not handled any radioactive materials during its operational.
10.	ZNS hazardous and other types of waste shall be managed appropriately by persons or companies licenced by Zambia Environmental Management Agency		✓		0	The Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container.



11.	ZNS shall integrate appropriate drainage and erosion control measures in the development and operation of the project. Measures shall be put in place to prevent and control siltation of water bodies?	✓			5	Farm has ensured that they prevent soil erosion by construction of drainages around the fields. Hence this helps in prevention of silting the water bodies.
12.	ZNS shall put in place measures or install and operate effective facilities for monitoring, preventing, controlling soil contamination, pollution of air and pollution of surface and ground water?				N/A	
13	Are levels of noise and vibrations monitored and maintained within the appropriate limits?	✓			5	The Noise levels within the farm are acceptable and within limit
14	Is ZNS ensuring that all incidents with potential to pollute the environment and/or harm human beings are reported to ZEMA immediately?	✓			5	No Environmental Incident has occurred or being recorded at the farm.
15	Is ZNS ensuring to preserve flora and fauna habitats in areas of the project site that will not be used for the project and related activities?	✓			5	Vegetation clearance has been conducted only in areas requiring farming.
16	Is Dust suppression being carried out in areas where dust will be generated?	✓			5	This is being done.
17	Is ZNS conducting open are burning without written permission from the Zambia Environmental Agency?		✓		0	Used pesticide containers are burnt at the farm and buried.
18	Has ZNS obtain appropriate permits and licences from the Zambia Environmental Management Agency and comply with the requirement of the Environment Act, 2011 and the Environmental Management (Licence) Regulations, 2013?			✓		The Farm requires needs to obtain a Pesticide and Toxic Substance for Storage and handling of Chemicals.
		<b>C=12</b>	<b>NC=2</b>	<b>PC=3</b>		

**Compliances=12**

**Non-Compliances=2**

**Partial Compliance=3**





S/N	ESMP Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Has ZNS been wetting the land before cultivation commences to avoid dust coming from farm operations?				N/A	
	Has ZNS been warning signs after fumigators?		✓		0	No signs for fumigation were observed in the storage shed.
	Has ZNS engaged professional fumigators?		✓		0	No professional fumigators have been engaged.
2.	Has ZNS been conducting comprehensive health awareness campaign among the local community and project workers on the dangers of malaria and HIV AIDS pandemic in consultation with health department?	✓			5	This is being done through the clinic staff within the farm.
	Has ZNS been providing condoms to all project workers at all times?	✓			5	These are distributed by the clinic within the farm.
3.	Has ZNS been providing workers with PPEs especially during operations?			✓	3	Some workers in the farm were not in fully Proper Protective Equipment
4.	Has ZNS installed fire fighting equipment and all personnel trained in the firefighting skills?			✓	3	No fire extinguishers were observed in the shed. However training in fire fighting is being done.
5.	Has ZNS designed and clearly displayed the fire response?		✓		0	This has not been done. No Fire assembly point was observed.



Audited Facility:	Auditor: Dickson Kabwe IDSP and ZNS Representative					Audit Date (s):
ZNS Mpika Shed	<ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Charles Chinyimba Captain</li><li>• M. Mukwela Crops Officer</li><li>• J. Mpashi wing Agric</li><li>S. Chimbini Wing Irrigation</li></ul>					
6.	Has ZNS provided warning signs such as NO SMOKING AREA?		✓		0	No smoking area observed near the storage shed.
7.	Has ZNS put up fire guards, clearing around the farm land to avoid fire outbreak?	✓			5	Fire guards have been put in place at the farm.
8.	Has ZNS landscape the farmland and applied agriculture liming to avoid degradation?				N/A	
9.	Has ZNS been planting trees around the boundaries of the farm land to avoid deforestation?	✓			5	This has been done
10.	Is the storage capacity for the shed 6,600m	✓			5	The storage facility has been constructed.
		C=5	NC=4	PC=2		

**Compliances=5**

**Non-Compliances=4**

**Partial Compliance=2**



<b>Audited Facility:</b> ZNS Mpika Shed		<b>Auditor:</b> Dickson Kabwe <b>IDSP and ZNS Representative</b> • Moono Munkombwe Kanjelesa (IDSP) • Michael Kabwe (IDSP)				<b>Audit Date (s):</b> <b>31/08/2023</b>
<b>S/N</b>	<b>World bank Operational Policies</b>	<b>Level of Compliance</b>			<b>Performance</b>	<b>Comments or Observations</b>
		<b>C</b>	<b>NC</b>	<b>PC</b>	<b>Rating(1-5)</b>	
1.	<b>Assessment and Management of Environmental and Social Impact risks-</b> Is the farm assessing, managing and monitoring environmental and social impacts and risks associated with the operations?			✓	3	The farm lacks a disposal site for chemicals.
2.	<b>Pollution prevention and Abatement</b> – Is the farm avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and if possible/compensation/remedying significant adverse effects of objects?	✓			5	The farm is avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and compensation.
3.	<b>Biodiversity and Ecosystems-</b> is the farm through the use of available data and early scanning and scoping process, determined the biodiversity footprint of the project and whether there are no go areas?	✓			5	This has been done.
4.	<b>EIB Climate-Related Standards-</b> Is the farm management identifying and applying the					This standard has been followed.



	necessary physical or soft measures at planning, designing and implementation stage of reduce these risks as well as to establish appropriate monitoring system to ensure the sustainability of the project?	✓			5	
5.	<b>Cultural Heritage</b> Is the farm protecting cultural heritage from adverse impacts of project activities by promoting the cultural heritage impact assessment and management?	✓			5	The farm is protecting the cultural heritage from adverse impacts within the farm.
6.	<b>Involuntary Resettlement-</b> Is the farm avoiding or at least minimise, project induced resettlement whenever feasible be exploring alternative project design?	✓			5	No resettlement was done within the farm because the farm is the property of the Zambia National Service.
7.	<b>Rights and Interests of Vulnerable Groups-</b> Is the farm affirming, respecting and protecting the rights and interests of vulnerable individuals and groups within the designated operational scope, throughout the project lifecycle?	✓			5	The rights and interests of vulnerable groups are being protected by the farm.
8.	<b>Labour Standards</b> Foster and realise non discriminating and fair and equal treatment and opportunity at work and ensure develop and maintain a sound worker management relationship?	✓			5	A sound worker's management relationship was observed at the farm.



9.	<b>Occupational and Public Health Safety and Security-</b> Is the farm promoting and protecting the health and safety of employees at work throughout the project life cycle by ensuring safe, health, hygienic and secure working and accommodation conditions and effective, a working environment that respects and safe guards the rights to privacy and when appropriate, to the enjoyment of the highest attainable standard of physical and mental health of workers and their families( e.g in workers accommodation.			✓	3	Some workers in the farm were not in fully Proper Protective Proper Equipment.
10.	<b>Stakeholders Engagement-</b> Is the farm engaging stakeholders are properly identified and engaged a dialogue between the promoter, the affected communities and other interested parties throughout the project life cycle?	✓			5	This is a continuous progress which the ZNS Farm is doing with the community surrounding the farm.
		<b>C=8</b>	<b>NC=0</b>	<b>PC=2</b>		

**Compliances=8**

**Non-Compliances=0**

**Partial Compliance=2**



<b>Audited Facility:</b>  ZNS Mpika Shed	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>•</li></ul>					<b>Audit Date (s):</b>  31/08/2023
S/N	Pest Management Plan Commitment	Level of Compliance			Performan ce Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Is there a PMP at the site?		✓		0	The Pest Management Plan was not found at the farm.
2.	Is there a detailed implementation of the PMP for farms under production?		✓		0	No detailed Implementation plan for the PMP was found at site.
3.	Is the farm compliant to the Environmental Management (Licensing) Regulation?			✓	3	No Pesticide and Toxic substance License has obtained. The storage facility for Pesticide is not labeled.
4.	Are areas that require compliance to aspects of the regulations	✓			5	Yes.
5.	Are the Aspects identified compliance?			✓	3	The storage facility for Pesticide is not labeled. Stocking of chemicals is not properly done.
6.	Is the Farm managing pest? by combining biological, cultural and physical and chemical tools in a way that minimize economic health and environmental risks pest control that are selected and applied in a manner that minimizes risks to human health beneficial and nontarget organisms and the environment?				N/A	
7.	Is the farm Eliminating of significant threats					





	caused by pests to the health and safety of patients' staff and the public?				N/A	
8.	Is the farm preventing the loss or damage to structures or property by pests?	✓			5	There is no damaged observed or recorded to structures or property.
9.	Is the farm ensuring protection of environmental quality inside and outside buildings?	✓			5	Being done.
10.	Is head of institution at having the IPMP at site?		✓		0	The IPMP not found at the farm.
11.	Is the farm following the IPM principles e.g prevention and suppression, monitoring, decision making nonchemical methods pesticide selection, reduced pesticide use anti-resistance strategies and evaluation?				N/A	
12.	Is the farm applying the IMP decision making process on pest management? E.g problem or pest identification, determine the severity of the problem and action thresholds, assess management options, select and apply one more options, Evaluate result, measure the success of options employed and documentation record results.				N/A	
13	Has the farm planned for IMP	✓			5	The Integrated Pest Management is being followed at the farm.
14	Is there any expertise of various fields in charge of IMP system?	✓			5	Agriculture experts have been employed at the farm.



15.	Has the farm employees had any training in IMP?		✓		0	Non of the Employees have been trained in IPM.
16.	Is the farm practicing good husbandry?				N/A	
17.	Is the farm practicing crop rotation, inter-cropping and timing of planting/harvest?				N/A	
18.	Is the farm purchasing improved varieties of seed or plant material?	✓			5	Seed Variety was observed in the storage room.
19.	Is the farm practicing good water management to promote crop growth while avoiding excessive watering and standing water?				N/A	
20.	Is the farm removing any diseased and infested plants, both in growing crop and after harvest?				N/A	
21.	Is the farm removing weeds in the field?				N/A	
22.	Is the farm using mechanical, biological chemical?	✓			5	The farm is using chemicals control for pests.
23.	Are the chemicals securely stored?	✓			5	The Chemicals are kept under lock and Key.
		<b>C=8</b>	<b>NC=4</b>	<b>PC=2</b>		

**Compliances=8**

**Non-Compliances=4**

**Partial Compliance=2**



<b>Audited Facility : ZNS-Storage Shed</b>	<b>Auditor:</b> Dickson Kabwe					<b>Audit Date (s): 31/08/2023</b>
	<b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>•</li><li>•</li></ul>					
<b>S/N</b>	<b>World bank operational policy (OP 4.09 – pest management commitment</b>	<b>Level of Compliance</b>			<b>Performan</b>	<b>Comments or</b>
		<b>C</b>	<b>NC</b>	<b>PC</b>	<b>ce</b>	<b>Observations</b>
					<b>Rating(1-5)</b>	
1.	Are the pesticides used at the farm have negligible adverse human health effects?			✓	3	The pesticide used are have minimal adverse human health effects.
2.	Are the pesticides used at the farm effective against the target species?	✓			5	The pesticides being used target the pests identified.
3.	Are the pesticides applied on the farm aim to minimize damage to natural enemies?	✓			5	Pesticides used are applied to minimize damage
4.	Do the pesticide used at farm demonstrate to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them?	✓			5	The Pesticide are classified as safe from the regulators.
5.	Are the pesticides taking into account the need to prevent the development of resistance in pests?	✓			5	Yes. The pesticides are applied in the fields as and when the need is required.
6.	Are the pesticide manufactured package, labelled handled, stored, disposed of and applied according to world bank standards?			✓	3	Partially, the chemicals being stored in the store room have not be properly stored and stacked. The used containers of the chemicals are not being properly disposed off.
		<b>C=4</b>	<b>NC=0</b>	<b>PC=2</b>		

**Compliances=4**

**Non-Compliances=0**

**Partial Compliance=2**



<b>Audited Facility:</b> <b>ZCS</b> <b>Lubambala</b>	<b>Auditor:</b> Dickson Kabwe <b>IDSP and ZCS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Kelvin Nkwaindi Officer In-Charge</li><li>• Chewe Repai Registry Clerk</li><li>• Annie Daka Stores Officer</li></ul> Jimmy Silwamba Operator					<b>Audit Date (s):</b>  <b>31/09/2023</b>
S/N	Decision letter conditions	Level of Compliance			Performance	Comments or Observations
		C	NC	PC	Rating(1-5)	
1.	ZCS shall implement the project and all environmental management commitments as stated in the environmental project brief (EPB) <b>with changes</b> as proposed by the Zambia Environmental Management Agency (ZEMA) in the decision letter and any other conditions that may be issued thereafter?			√	3	The Environmental Management commitments have been partially followed. Some aspects of monitoring have not been done at the farm, such as soil and water monitoring.
2.	ZCS shall prior to project implementation, consult and comply in full with the conditions and specifications of the local authority, Ministry responsible for Lands, Ministry responsible for Agriculture, Water Resources Management Authority, Department of Forestry and other mandated authorities?			√	3	This has been partially done. Institutions such as Forestry Department and WARMA have not fully consulted.
3.	The projects and related activities shall be implemented in such a way that public and private property, health and livelihood shall not be affected negatively, endangered, damaged, harmed or lost. Where is it determined that the health of people, property or livelihood is endangered, harmed, affected negatively, damaged or lost as a result of the project and/or related activities ZCS shall be held for	√			5	The ZCS Lubambala Farm has not damaged any public or private property. No report has been recorded on any livelihood being endangered.



	payments or settlement of appropriate compensation and other forms of relief or replacement?					
4.	ZCS shall put in place measures to protect water resources from damage or pollution, streams and their sources shall be protected?	√			5	The Farm has put in place measures to protect the water resources such as the ensuring the chemicals applied are according to the need of the farm. Streams and Rivers are 500m away from the farm.
5.	ZCS shall conduct compensatory reforestation programs in or other districts to offset the loss of vegetation from the project area?		√		0	No Compensatory reforestation programs were identified or implemented at the Farm.
6.	ZCS shall not conduct indiscriminate clearing of vegetation clearing shall only be limited to areas where operation will be conducted or where project facilities will have to be conducted. In order to avert soil erosion, where possible, stumping as opposed to uprooting shall be used and trees shall be replanted in sensitive areas to facilitate ecological restoration?	√			5	Farm has only cleared vegetation where the fields are located.
7.	ZCS shall put in place appropriate measures for management of pesticides and toxic substances?			√	3	This is being partially done. The chemical storage facility entrance is not labelled and Chemicals are not placed on pallets for ventilation purpose.
8.	ZCS shall ensure that solid waste and any other unwanted materials as a result of preparation, construction and operations works are collected and disposed of at a license waste disposal site?	√			5	The Farm has engaged the Mpika Council to collect and Dispose off Solid waste.
9.	ZCS should ensure all radioactive materials or materials containing	√			5	Farm has not handled any radioactive



	radioactive substances shall be handled and/or disposed of appropriately?					materials during its operational.
10.	ZCS Hazardous and other types of waste shall be managed appropriately by persons or companies licenced by Zambia Environmental Management Agency.	√			0	The Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as Used Oil, Grease, Batteries.
11.	ZCS shall integrate appropriate drainage and erosion control measures in the development and operation of the project. Measures shall be put in place to prevent and control siltation of water bodies?			√	3	This has been partially done. Certain areas of the farm do not have drainages.
12.	ZCS shall put in place measures or install and operate effective facilities for monitoring, preventing, controlling soil contamination, pollution of air and pollution of surface and ground water?			√	3	ZCS Lubambala Farm has not installed soil and air monitoring facilities at the Farm.
13.	Are levels of noise and vibrations monitored and maintained within the appropriate limits?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
14.	Is ZCS ensuring that all incidents with potential to pollute the environment and/or harm human beings are reported to ZEMA immediately?	√			5	No Environmental Incident has occurred or being recorded at the farm.
15.	Is ZCS ensuring to preserve flora and fauna habitats in areas of the project site that will not be used for the project and related activities?	√			5	Vegetation clearance has been conducted only in areas requiring farming.
16.	Is Dust suppression being carried out in areas where dust will be generated?	√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.



17.	Is ZCS conducting open are burning without written permission from the Zambia Environmental Agency?		√		0	Used pesticide containers are burnt at the farm and buried.
18.	Has ZCS obtain appropriate permits and licences from the Zambia Environmental Management Agency and comply with the requirement of the Environment Act, 2011 and the Environmental Management (Licence) Regulations, 2013?			√	3	The Farm requires needs to obtain a Pesticide and Toxic Substance for Storage and handling of Chemicals.
		<b>C=9</b>	<b>NC=3</b>	<b>PC=6</b>		

**Compliances=9**

**Non-Compliances=3**

**Partial Compliance=6**





<b>Audited Facility:</b>  ZCS- <b>Lubambala</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZCS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Kelvin Nkwaindi Officer In-Charge</li><li>• Chewe Repai Registry Clerk</li><li>• Annie Daka Stores Officer</li></ul> Jimmy Silwamba Operator					<b>Audit Date (s):</b>  <b>31/09/2023</b>
S/N	ESMP Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Has ZCS implemented dust suppression measures to control any dust that may be generated during construction and operation phases?	√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
	Has ZCS been monitoring surface water for pollution levels?		√		0	The Testing of Surface and Underground water is not being done.
	Has ZCS minimized the use of excess chemicals on the land that can contaminate the soils and ground water?	√			5	The Farm only applies chemicals when it is necessary e.g. for pest control and weed control.
2.	Has ZCS implemented the noise suppression measures by ensuring earth moving and construction equipment are of high efficiency and well maintained including the checking and replacing of intake and exhaust silencers?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
3.	Has ZCS been preventing any form of soil pollution that may lead to degradation?			√	3	Application of chemicals has been minimized and however, the soil monitoring has not been done.
4.	Has ZCS been maintaining crop rotation on fields to enhance soil fertility?	√			5	Crop rotation is being exercised on the farm.



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5.	Has ZCS been submitting the bi annual ground water sample results to ZEMA?		√		0	No Bi-annual report for ground water monitoring has been submitted to ZEMA.
6.	Has ZCS taken initiative to be employing local youths for manual labour?	√			5	The locals have are being employed. During harvesting period about 10 people are employed as casuals.
7.	Has ZCS engaged the community throughout the project life?	√			5	Community engaged is being done.
8.	Has ZCS development a HIV/AIDs sensitization activities for its workforce and local community?			√	3	This is partially done. The USAID sometimes provide awareness to the inmates.
9.	Has ZCS liaised with ZEMA for the identification of any permits required for its operation with regards to storage and use of diesel?		√		0	Engagement with ZEMA has not been done on the types of permits required for the farm.
10.	Has ZCS implemented dust management measures to reduce dust along the roads and farming fields (during cultivation) as a continuous exercise?			√	3	This is been partially done. Dust suppression not conducted on all the roads within the farm.
11.	Has ZCS put onsite an emergency vehicle equipped with first aid to facilitate immediate health requirements for its employee before evacuation to Mpika District for further medical treatment?		√		0	The farm does not have an emergency vehicle equipped with first aid to facilitate immediate health requirements for its employee.
12.	Has ZCS provided well equipped sanitary facilities for its employees?	√			5	The has been done.
13.	Has ZCS implemented the reduction risk of malaria by spraying offices and work stations on site and providing mosquito nets to employees?	√			5	This is being conducted hand in hand with Ministry of Health.
15.	Has ZCS put up active desk HIV/AIDs information desk which will be available to farm employees through the farm manager?			√	3	This is partially done. The USAID sometimes provide awareness to the inmates.



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16.	Has ZCS provided insulation and automatic fault sensors to all electrical and mechanical gadgets?	√			5	Insulation on all the electrical wires has been done and automatic fault sensors installed.
17.	Has ZCS created buffer zones around the farm with regards to woodland management?	√			5	Buffer zones have been created for wood management.
18.	It is stated in the report that barren sites shall initially be planted with fast growing soil improvement plants such as nitrogen fixing tree species, has this been implemented?			√		This is partially being done, just a few trees were observed being planted within the farm area.
19.	Has ZCS formulated and implemented the program to discourage farm employees against hunting wild animals for food?				N/A	
20.	Has ZCS provided a logbook of sightings on site record book of any animals seen during normal activities which has to be kept by the environmental officer to increase the awareness of farm employees about the fauna on farm?				N/A	
21.	Has the site clearance been restricted only to where it is necessary by ZCS?	√			5	The clearing of vegetation has on been done in areas where cultivation is being conducted.
22.	Has the extraction of fresh water from streams and rivers been minimized, has WARMA been consulted on the irrigation water rights by ZCS?			√	3	Consultation with WARMA has been done but permits have not been acquired.
		<b>C=11</b>	<b>NC=4</b>	<b>PC=6</b>		

**Compliances=11**

**Non-Compliances=4**

**Partial Compliance=6**



<b>Audited Facility:</b>  <b>ZNS-Lubambala</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZCS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Kelvin Nkwaindi Officer In-Charge</li><li>• Chewe Repai Registry Clerk</li><li>• Annie Daka Stores Officer</li><li>• Jimmy Silwamba Operator</li></ul>					<b>Audit Date (s):</b>  <b>31/09/2023</b>
S/N	World Bank Operational Policies	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	<b>Assessment and Management of Environmental and Social Impact risks-</b> Is the farm assessing, managing and monitoring environmental and social impacts and risks associated with the operations?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm. The farm lacks a disposal site for chemicals.
2.	<b>Pollution prevention and Abatement</b> – Is the farm avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and if possible/compensation/remediating significant adverse effects of objects?	√			5	The farm is avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and compensation.
3.	<b>Biodiversity and Ecosystems-</b> is the farm through the use of available data and early scanning and scoping process, determined the biodiversity footprint of the project and whether there are no go areas?	√			5	This is being done.
4.	<b>EIB Climate-Related Standards-</b> Is the farm management identifying and applying the necessary physical or soft measures at planning, designing and implementation stage of reduce these risks as well as to establish appropriate monitoring system to ensure the sustainability of the project?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm.



5.	<b>Cultural Heritage</b> Is the farm protecting cultural heritage from adverse impacts of project activities by promoting the cultural heritage impact assessment and management?	√			5	The farm is protecting the cultural heritage from adverse impacts within the farm.
6	<b>Involuntary Resettlement-</b> Is the farm avoiding or at least minimise, project induced resettlement whenever feasible be exploring alternative project design?	√			5	The farm did not have any Involuntary Resettlement.
7.	<b>Rights and Interests of Vulnerable Groups-</b> Is the farm affirming, respecting and protecting the rights and interests of vulnerable individuals and groups within the designated operational scope, throughout the project lifecycle?	√			5	The rights and interests of vulnerable groups are being protected by the farm.
8	<b>Labour Standards</b> Foster and realise non discriminating and fair and equal treatment and opportunity at work and ensure develop and maintain a sound worker management relationship?	√			5	A sound worker's management relationship was observed at the farm.
9	<b>Occupational and Public Health Safety and Security-</b> Is the farm promoting and protecting the health and safety of employees at work throughout the project life cycle by ensuring safe, health, hygienic and secure working and accommodation conditions and effective, a working environment that respects and safe guards the rights to privacy and when appropriate, to the enjoyment of the highest attainable standard of physical and mental health of workers and their families( e.g in workers accommodation			√	3	Some workers in the farm were not in fully Proper Protective Proper Equipment.
10.	<b>Stakeholders Engagement-</b> Is the farm engaging stakeholders are					This is a continuous progress which the ZCS



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	properly identified and engaged a dialogue between the promoter, the affected communities and other interested parties throughout the project life cycle?	√			5	Farm is doing with the community surrounding the farm.
		<b>C=7</b>	<b>NC=0</b>	<b>PC=3</b>		

**Compliances=7**

**Non-Compliances=0**

**Partial Compliance=3**



<b>Audited Facility:</b>  <b>ZCS-</b> Serenje Nansanga	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZCS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Kelvin Nkwaindi Officer In-Charge</li><li>• Chewe Repai Registry Clerk</li><li>• Annie Daka Stores Officer</li><li>• Jimmy Silwamba Operator</li></ul>		<b>Audit Date (s):</b>  <b>31/09/2023</b>			
S/N	Pest Management Plan Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Is there a PMP at the site?		√		0	The Pest Management Plan was not found at the farm.
2.	Is there a detailed implementation of the PMP for farms under production?		√		0	No detailed Implementation plan for the PMP was found at site.
3.	Is the farm compliant to the Environmental management (licensing) Regulation?			√	3	No Pesticide and Toxic substance License has obtained. The storage facility for Pesticide is not labeled.
4	Are areas that require compliance to aspects of the regulations.	√			5	Yes.
5	Are the Aspects identified compliance?			√	3	The storage facility for Pesticide is not labeled. Stocking of chemicals is not properly done.
6	Is the Farm managing pest? by combining biological, cultural and physical and chemical tools in a way that minimize economic health and environmental risks pest control that are selected and applied in a manner that minimizes risks to human health beneficial and nontarget organisms and the environment?	√			5	The farm uses Chemicals to control pests.
7.	Is the farm Eliminating of significant threats caused by pests to the health and safety of patients’ staff and the public?	√			5	The applying of pesticides on the crops is regulated and only applied once the pests are identified.





Environmental Audit Report for ISF sites



8	Is the farm preventing the loss or damage to structures or property by pests?	√			5	There is no damaged observed or recorded to structures or property.
9	Is the farm ensuring protection of environmental quality inside and outside buildings?	√			5	This is being done.
10	Is head of institution at having the IPMP at site?		√		0	The IPMP not found at the farm.
11	Is the farm following the IPM principles e.g prevention and suppression, monitoring, decision making nonchemical methods pesticide selection, reduced pesticide use anti-resistance strategies and evaluation?			√	3	This is partially being done. The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
12	Is the farm applying the IMP decision making process on pest management? E.g problem or pest identification, determine the severity of the problem and action thresholds, assess management options, select and options employed and documentation record results.	√			5	Pest Management being followed at the Farm. Records are not documented for the measures taken and results.
13	Has the farm planned for IMP	√			5	The Integrated Pest Management is being followed at the farm.
14	Is there any expertise of various fields in charge of IMP system?	√			5	Agriculture experts have been employed at the farm.
15	Has the farm employees had any training in IMP?		√		0	Non of the Employees have been trained in IPM.
16	Is the farm practicing good husbandry?				N/A	
17	Is the farm practicing crop rotation, inter- cropping and timing of planting/harvest?	√			5	Crop rotation is being done in the fields.
18	Is the farm purchasing improved varieties of seed or plant material?	√			5	Seed Variety was observed in the storage room.
19	Is the farm practicing good water management to promote crop growth while	√				The farm is using an Irrigation system hence



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	avoiding excessive watering and standing water?				5	water use is not excessive.
20	Is the farm removing any diseased and infested plants, both in growing crop and after harvest?	√			5	Scouting of pests and weeds are done everyday by the employees at the farm.
21	Is the farm removing weeds in the field?	√			5	This is being done.
22	Is the farm using mechanical, biological, chemical?	√			5	The farm is using chemicals control for pests.
23	Are the chemicals securely stored?	√			5	The Chemicals are kept under lock and Key.
		<b>C=15</b>	<b>NC=4</b>	<b>PC=3</b>		

**Compliances=15**

**Non-Compliances=4**

**Partial Compliance=3**



<b>Audited Facility: ZCS- Lubambala</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZCS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Kelvin Nkwaindi Officer In-Charge</li><li>• Chewe Repai Registry Clerk</li><li>• Annie Daka Stores Officer</li><li>• Jimmy Silwamba Operator</li></ul>					<b>Audit Date (s):</b>  <b>31/09/2023</b>
S/N	World Bank Operational Policy (OP 4.09 – Pest Management Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Are the pesticides used at the farm have negligible adverse human health effects?	√			5	The pesticide used are registered for use in Zambia.
2.	Are the pesticides used at the farm effective against the target species?	√			5	The pesticides being used target the pests identified.
3.	Are the pesticides applied on the farm aim to minimize damage to natural enemies?	√			5	Pesticides used are applied to minimize damage.
4.	Do the pesticide used at farm demonstrate to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them?	√			5	The Pesticide are classified as safe from the regulators.
5.	Are the pesticides taking into account the need to prevent the development of resistance in pests?			√	3	Yes. The pesticides are applied in the fields as and when the need is required.
6.	Are the pesticide manufactured package, labelled handled, stored, disposed of and applied according to world bank standards?			√	3	Partially, the chemicals being stored in the store room have not be properly stored and stacked. The used containers of the chemicals are not being properly disposed off.
		C=4	NC=0	PC=2		

**Compliances=4**  
**Non-Compliances=0**  
**Partial Compliance=2**



<b>Audited Facility:</b> ZNS Lumezi	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Lt. Col. M. Nalufu Commanding Officer</li><li>• 2Lt. C. Mwila Provost Officer</li><li>• 2Lt. A Mununga Agric Officer</li><li>• 2Lt. JJ. Mbawa Assistant</li><li>• WO1 D. Banda R.S.M</li><li>• WO1 J.Chimfwembe</li><li>• WO2 Mullinga M.</li><li>• S/SGT Mulinda A</li></ul>					Audit Date (s):  1/09/2023
S/N	Decision letter conditions	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	ZNS shall implement the project and all environmental management commitments as stated in the environmental project brief (EPB) <b>with changes</b> as proposed by the Zambia Environmental Management Agency (ZEMA) in the decision letter and any other conditions that may be issued thereafter?			√	3	The Environmental Management commitments have been partially followed. Some aspects of monitoring have not been done at the farm, such as soil and water monitoring.
2.	ZNS shall prior to project implementation, consult and comply in full with the conditions and specifications of the local authority, Ministry responsible for Lands, Ministry responsible for Agriculture, Water Resources Management Authority, Department of Forestry and other mandated authorities?			√	3	This has been partially done. Institutions such as Forestry Department and Water Resources Management Authority, Department have not fully consulted.
3.	The projects and related activities shall be implemented in such a way that public					



	and private property, health and livelihood shall not be affected negatively, endangered, damaged, harmed or lost. Where is it determined that the health of people, property or livelihood is endangered, harmed, affected negatively, damaged or lost as a result of the project and/or related activities ZNS shall be liable for payments or settlement of appropriate compensation and other forms of relief or replacement?	✓			5	The ZNS Lumezi Farm has not damaged any public or private property. No report has been recorded on any livelihood being endangered.
4.	ZNS shall put in place measures to protect water resources from damage or pollution, streams and their sources shall be protected?	✓			5	The Lumezi Farm has put in place measures to protect the water resources such as the ensuring the chemicals applied are according to the need of the farm. Streams is 500m away from the farm
5.	ZNS shall conduct compensatory reforestation programs in or other districts to offset the loss of vegetation from the project area?		✓		0	No Compensatory reforestation programs were identified or implemented at the Farm.
6.	ZNS shall not conduct indiscriminate clearing of vegetation clearing shall only be limited to areas where operation will be conducted or where project facilities will have to be conducted. In order to avert soil erosion, where possible, stumping as opposed to uprooting shall be used and trees shall be replanted in sensitive areas to facilitate ecological restoration?	✓			5	The Farm has only cleared vegetation where the fields are located.
7.	ZNS shall put in place appropriate measures					This has been partially done. The chemical



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	for management of pesticides and toxic substances?			√	3	facility has hazardous signage at the entrance and within the facility.
8.	ZNS shall ensure that solid waste and any other unwanted materials as a result of preparation, construction and operations works are collected and disposed of at a license waste disposal site?	√			5	ZNS Lumezi has engaged the Lumezi Council to collect and Dispose off Solid waste.
9.	ZNS should ensure all radioactive materials or materials containing radioactive substances shall be handled and/or disposed of appropriately?	√			5	Farm has not handled any radioactive materials during its operational.
10.	ZNS hazardous and other types of waste shall be managed appropriately by persons or companies licenced by Zambia Environmental Management Agency.		√		0	The Farm has not engaged any Company Licensed by ZEMA to handle and Dispose off hazardous waste such as empty chemical container, Used Oil, Grease, Batteries.
11.	ZNS shall integrate appropriate drainage and erosion control measures in the development and operation of the project. Measures shall be put in place to prevent and control siltation of water bodies?	√			5	Farm has ensured that they prevent soil erosion by construction of drainages around the fields. Hence this helps in prevention of silting the water bodies.
12.	ZNS shall put in place measures or install and operate effective facilities for monitoring, preventing, controlling soil contamination, pollution of air and pollution of surface and ground water?			√	3	The Farm has not installed soil and air monitoring facilities at the Farm
13.	Are levels of noise and vibrations monitored and maintained within the appropriate limits?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities



						area seasonal and not continuous.
14.	Is ZNS ensuring that all incidents with potential to pollute the environment and/or harm human beings are reported to ZEMA immediately?	√			5	No Environmental Incident has occurred or being recorded at the farm.
15.	Is ZNS ensuring to preserve flora and fauna habitats in areas of the project site that will not be used for the project and related activities?	√			5	Vegetation clearance has been conducted only in areas requiring farming.
16.	Is Dust suppression being carried out in areas where dust will be generated?	√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
17.	Is ZNS conducting open are burning without written permission from the Zambia Environmental Agency?		√		0	Used pesticide containers are burnt at the farm and buried.
18.	Has ZNS obtain appropriate permits and licences from the Zambia Environmental Management Agency and comply with the requirement of the Environment Act, 2011 and the Environmental Management (Licence) Regulations, 2013?			√	3	The Farm requires needs to obtain a Pesticide and Toxic Substance for Storage and handling of Chemicals.
		<b>C=10</b>	<b>NC=3</b>	<b>PC=5</b>		

**Compliances=10**

**Non-Compliances=3**

**Partial Compliance=5**





<b>Audited Facility:</b>  ZNS- <b>Lumezi Farm</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Lt. Col. M. Nalufu Commanding Officer</li><li>• 2Lt. C. Mwila Provost Officer</li><li>• 2Lt. A Mununga Agric Officer</li><li>• 2Lt. JJ. Mbawa Assistant</li><li>• WO1 D. Banda R.S.M</li><li>• WO1 J.Chimfwembe</li><li>• WO2 Mullinga M.</li><li>• S/SGT Mulinda A</li></ul>					<b>Audit Date (s):</b>  <b>01/09/2023</b>
S/N	ESMP Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Has ZNS implemented dust suppression measures to control any dust that may be generated during construction and operation phases?	√			5	Dust generation was not observed within the farm because the farm currently has crops in the field.
	Has ZNS been monitoring surface water for pollution levels?		√		0	The Testing of Surface and Underground water is not being done.
	Has ZNS minimized the use of excess chemicals on the land that can contaminate the soils and ground water?	√			5	The Farm only applies chemicals when it is necessary e.g. for pest control and weed control.
2.	Has ZNS implemented the noise suppression measures by ensuring earth moving and construction equipment are of high efficiency and well maintained including the checking and replacing of intake and exhaust silencers?	√			5	The Noise levels within the farm are acceptable and within limit. Furthermore, cultivating activities area seasonal and not continuous.
3.	Has ZNS been preventing any form of soil pollution that may lead to degradation?	√			5	Application of chemicals has been minimized.



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4.	Has ZNS been maintaining crop rotation on fields to enhance soil fertility?	√			5	Crop rotation is being exercised on the farm.
5.	Has ZNS been submitting the bi annual ground water sample results to ZEMA?		√		0	No Bi-annual report for ground water monitoring has been submitted to ZEMA.
6.	Has ZNS taken initiative to be employing local youths for manual labour?	√			5	The locals have are being employed. During harvesting period about 50 people are employed as casuals.
7.	Has ZNS engaged the community throughout the project life?	√			5	Community engaged is being done.
8.	Has ZNS development a HIV/AIDs sensitization activities for its workforce and local community?	√			5	The sensitization activities is being done by Clinic staff within the farm.
9.	Has ZNS liaised with ZEMA for the identification of any permits required for its operation with regards to storage and use of diesel?		√		0	Engagement with ZEMA has not been done on the types of permits required for the farm.
10.	Has ZNS implemented dust management measures to reduce dust along the roads and farming fields (during cultivation) as a continuous exercise?			√	3	This is been partially done. Dust suppression not conducted on all the roads within the farm.
11.	Has ZNS put onsite an emergency vehicle equipped with first aid to facilitate immediate health requirements for its employee before evacuation to Lumezi District for further medical treatment?			√	3	The farm has a vehicle but however, its not equipped with first aid to facilitate immediate health requirements for its employee.
12.	Has ZNS provided well equipped sanitary facilities for its employees?	√			5	
13.	Has ZNS implemented the reduction risk of malaria by spraying offices and work stations on site and providing mosquito nets to employees?	√			5	This is being conducted hand in hand with Ministry of Health.
15.	Has ZNS put up active desk HIV/AIDs information desk which	√			5	This is being done by the Clinic staff within the farm.



*Environmental Audit Report for ISF sites*



	will be available to farm employees through the farm manager?					
16.	Has ZNS provided insulation and automatic fault sensors to all electrical and mechanical gadgets?	√			5	Insulation on all the electrical wires has been done and automatic fault sensors installed.
17.	Has ZNS created buffer zones around the farm with regards to woodland management?	√			5	Buffer zones have been created for wood management.
18.	It is stated in the report that barren sites shall initially be planted with fast growing soil improvement plants such as nitrogen fixing tree species, has this been implemented?			√		This is partially being done, just a few trees were observed being planted within the farm area.
19.	Has ZNS formulated and implemented the program to discourage farm employees against hunting wild animals for food?				N/A	
20.	Has ZNS provided a logbook of sightings on site record book of any animals seen during normal activities which has to be kept by the environmental officer to increase the awareness of farm employees about the fauna on farm?				N/A	
21.	Has the site clearance been restricted only to where it is necessary by ZNS?	√			5	The clearing of vegetation has on been done in areas where cultivation is being conducted.
22.	Has the extraction of fresh water from streams and rivers been minimized, has WARMA been consulted on the irrigation water rights by ZNS?			√	3	Consultation with WARMA has been done but permits have not been acquired.
		<b>C=14</b>	<b>NC=3</b>	<b>PC=3</b>		

**Compliances=14**

**Non-Compliances=3**

**Partial Compliance=3**



<b>Audited Facility:</b>  ZNS-  <b>Lumezi Farm</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Lt. Col. M. Nalufu Commanding Officer</li><li>• 2Lt. C. Mwila Provost Officer</li><li>• 2Lt. A Mununga Agric Officer</li><li>• 2Lt. JJ. Mbawa Assistant</li><li>• WO1 D. Banda R.S.M</li><li>• WO1 J.Chimfwembe</li><li>• WO2 Mullinga M.</li><li>• S/SGT Mulinda A</li></ul>		<b>Audit Date (s):</b>  <b>01/09/2023</b>			
<b>S/N</b>	<b>World bank Operational Policies</b>	<b>Level of Compliance</b>			<b>Performance Rating</b> (1-5)	<b>Comments or Observations</b>
		<b>C</b>	<b>NC</b>	<b>PC</b>		
1.	<b>Assessment and Management of Environmental and Social Impact risks-</b> Is the farm assessing, managing and monitoring environmental and social impacts and risks associated with the operations?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm. The farm lacks a disposal site for chemicals.
2.	<b>Pollution prevention and Abatement</b> – Is the farm avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and if possible/compensation/remedy ing significant adverse effects of objects?	√			5	The farm is avoiding any deterioration in the quality of human health or the environment and any loss of biodiversity, by avoiding, reducing and compensation.
3.	<b>Biodiversity and Ecosystems-</b> is the farm through the use of available data and early scanning and scoping process, determined the biodiversity footprint of the project and whether there are no go areas?	√			5	This has been done.



4.	<b>EIB Climate-Related Standards-</b> Is the farm management identifying and applying the necessary physical or soft measures at planning, designing and implementation stage of reduce these risks as well as to establish appropriate monitoring system to ensure the sustainability of the project?			√	3	Monitoring of the soil, surface and underground water is not being conducted at the farm.
5.	<b>Cultural Heritage</b> Is the farm protecting cultural heritage from adverse impacts of project activities by promoting the cultural heritage impact assessment and management?	√			5	The farm is protecting the cultural heritage from adverse impacts within the farm.
6.	<b>Involuntary Resettlement-</b> Is the farm avoiding or at least minimise, project induced resettlement whenever feasible be exploring alternative project design?	√			5	No resettlement was done within the farm because the farm is the property of the Zambia National Service.
7.	<b>Rights and Interests of Vulnerable Groups-</b> Is the farm affirming, respecting and protecting the rights and interests of vulnerable individuals and groups within the designated operational scope, throughout the project lifecycle?	√				The rights and interests of vulnerable groups are being protected by the farm.
8.	<b>Labour Standards</b> Foster and realise non discriminating and fair and equal treatment and opportunity at work and ensure develop and maintain a sound worker management relationship?	√			5	A sound worker's management relationship was observed at the farm.
9.	<b>Occupational and Public Health Safety</b>					



	<b>and Security-</b> Is the farm promoting and protecting the health and safety of employees at work throughout the project life cycle by ensuring safe, health, hygienic and secure working and accommodation conditions and effective, a working environment that respects and safe guards the rights to privacy and when appropriate, to the enjoyment of the highest attainable standard of physical and mental health of workers and their families( e.g in workers accommodation.			√	5	Some workers in the farm were not in fully Proper Protective Proper Equipment.
10.	<b>Stakeholders Engagement-</b> Is the farm engaging stakeholders are properly identified and engaged a dialogue between the promoter, the affected communities and other interested parties throughout the project life cycle?	√			5	This is a continuous progress which the ZNS Farm is doing with the community surrounding the farm.
		<b>C=7</b>	<b>NC=0</b>	<b>PC=3</b>		

**Compliances=7**

**Non-Compliances=0**

**Partial Compliance=3**



<b>Audited Facility:</b>  <b>ZNS-Lumezi Farm</b>	<b>Auditor:</b> Dickson Kabwe  <b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"> <li>• Moono Munkombwe Kanjelesa (IDSP)</li> <li>• Michael Kabwe (IDSP)</li> <li>• Moono Munkombwe Kanjelesa (IDSP)</li> <li>• Michael Kabwe (IDSP)</li> <li>• Lt. Col. M. Nalufu Commanding Officer</li> <li>• 2Lt. C. Mwila Provost Officer</li> <li>• 2Lt. A Mununga Agric Officer</li> <li>• 2Lt. JJ. Mbawa Assistant</li> <li>• WO1 D. Banda R.S.M</li> <li>• WO1 J.Chimfwembe</li> <li>• WO2 Mullinga M.</li> <li>• S/SGT Mulinda A</li> </ul>					<b>Audit Date (s):</b>  <b>01/09/2023</b>
S/N	Pest Management Plan Commitment	Level of Compliance			Performance Rating (1-5)	Comments or Observations
		C	NC	PC		
1.	Is there a PMP at the site?		✓		0	The Pest Management Plan was not found at the farm.
2.	Is there a detailed implementation of the PMP for farms under production?		✓		0	No detailed Implementation plan for the PMP was found at site.
3.	Is the farm compliant to the Environmental Management (Licensing) Regulation?			✓	3	No Pesticide and Toxic substance License has obtained. The storage facility for Pesticide is not labeled.
4.	Are areas that require compliance to aspects of the regulations	✓			5	Yes.
5.	Are the Aspects identified compliance?			✓	3	The storage facility for Pesticide is not labeled. Stocking of chemicals is not properly done.
6.	Is the Farm managing pest? by combining biological, cultural and physical and chemical tools in a way that minimize economic health and environmental risks pest control that are	✓			5	The farm uses Chemicals to control pests.





	selected and applied in a manner that minimizes risks to human health beneficial and nontarget organisms and the environment?					
7.	Is the farm Eliminating of significant threats caused by pests to the health and safety of patients' staff and the public?	✓			5	The applying of pesticides on the crops is regulated and only applied once the pests are identified.
8.	Is the farm preventing the loss or damage to structures or property by pests?	✓			5	There is no damaged observed or recorded to structures or property.
9.	Is the farm ensuring protection of environmental quality inside and outside buildings?	✓			5	Being done.
10.	Is head of institution at having the IPMP at site?		✓		0	The IPMP not found at the farm.
11.	Is the farm following the IPM principles e.g prevention and suppression, monitoring, decision making nonchemical methods pesticide selection, reduced pesticide use anti-resistance strategies and evaluation?			✓	3	This is partially being done. The monitoring, decision making, pesticide selection is being used. However, use of biological control of pest is not being done.
12.	Is the farm applying the IMP decision making process on pest management? E.g problem or pest identification, determine the severity of the problem and action thresholds, assess management options, select and apply one more options, Evaluate result, measure the success of options employed and	✓			4	Pest Management being followed at the Farm. Records are not documented for the measures taken and results.



	documentation record results.					
13	Has the farm planned for IMP	✓			5	The Integrated Pest Management is being followed at the farm.
14	Is there any expertise of various fields in charge of IMP system?	✓			5	Agriculture experts have been employed at the farm.
15.	Has the farm employees had any training in IMP?		✓		0	Non of the Employees have been trained in IPM.
16.	Is the farm practicing good husbandry?	✓			5	
17.	Is the farm practicing crop rotation, inter-cropping and timing of planting/harvest?	✓			5	Crop Rotation is being conducted at the farm. Wheat, Maize and Soya Beans.
18.	Is the farm purchasing improved varieties of seed or plant material?	✓			5	Seed Variety was observed in the storage room.
19.	Is the farm practicing good water management to promote crop growth while avoiding excessive watering and standing water?	✓			5	The farm is using an Irrigation system hence water use is not excessive.
20.	Is the farm removing any diseased and infested plants, both in growing crop and after harvest?	✓			5	Scouting of pests and weeds are done everyday by the employees at the far.
21.	Is the farm removing weeds in the field?	✓			5	Being done.
22.	Is the farm using mechanical, biological chemical?	✓			5	The farm is using chemicals control for pests.
23.	Are the chemicals securely stored?	✓			5	The Chemicals are kept under lock and Key.
		<b>C=16</b>	<b>NC=4</b>	<b>PC=3</b>		

**Compliances=16**

**Non-Compliances=4**

**Partial Compliance=3**



<b>Audited Facility:</b> <b>ZNS-Lumezi</b>	<b>Auditor:</b> Dickson Kabwe					<b>Audit Date (s):</b>  <b>01/09/2023</b>
	<b>IDSP and ZNS Representative</b> <ul style="list-style-type: none"><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Moono Munkombwe Kanjelesa (IDSP)</li><li>• Michael Kabwe (IDSP)</li><li>• Lt. Col. M. Nalufu Commanding Officer</li><li>• 2Lt. C. Mwila Provost Officer</li><li>• 2Lt. A Mununga Agric Officer</li><li>• 2Lt. JJ. Mbawa Assistant</li><li>• WO1 D. Banda R.S.M</li><li>• WO1 J.Chimfwembe</li><li>• WO2 Mullinga M.</li><li>• S/SGT Mulinda A</li></ul>					
<b>S/N</b>	<b>World bank operational policy (OP 4.09 - pest management commitment</b>	<b>Level of Compliance</b>			<b>Performanc</b>	<b>Comments or Observations</b>
		<b>C</b>	<b>NC</b>	<b>PC</b>	<b>Rating(1-5)</b>	
1.	Are the pesticides used at the farm have negligible adverse human health effects?	√			5	The pesticide used are registered for use in Zambia.
2.	Are the pesticides used at the farm effective against the target species?	√			5	The pesticides being used target the pests identified.
3.	Are the pesticides applied on the farm aim to minimize damage to natural enemies?	√			5	Pesticides used are applied to minimize damage
4.	Do the pesticide used at farm demonstrate to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them?	√			5	The Pesticide are classified as safe from the regulators.
5.	Are the pesticides taking into account the need to prevent the development of resistance in pests?	√			5	Yes. The pesticides are applied in the fields as and when the need is required.
6.	Are the pesticide manufactured package, labelled handled, stored, disposed of and applied according to world bank standards?			√	3	Partially, the chemicals being stored in the store room have not be properly stored and stacked. The used containers of the chemicals are not being properly disposed off.
		<b>C=5</b>	<b>NC=0</b>	<b>PC=1</b>		

**Compliances=5**

**Non-Compliances=0**

**Partial Compliance=1**

## Appendix 2: Attendance Sheets

**ENVIRONMENTAL AUDIT FOR THE IRRIGATION DEVELOPMENT SUPPORT PROJECT FUND**  
**(ISF) SITES**

## ZAMBIA NATIONAL SERVICE MPIKA STORAGE SHED (MPIKA DISTRICT) ATTENDANCE SHEET

[illegible]



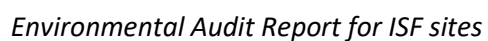


**ENVIRONMENTAL AUDIT FOR THE IRRIGATION DEVELOPMENT SUPPORT PROJECT FUND**  
**(ISF) SITES**

## ZAMBIA CORRECTIONAL SERVICE- MPIKA LUBAMBALA ATTENDANCE SHEET

[illegible]





ENVIRONMENTAL AUDIT FOR THE IRRIGATION DEVELOPMENT SUPPORT PROJECT FUND  
(ISF) SITES

[illegible]





**ENVIRONMENTAL AUDIT FOR THE IRRIGATION DEVELOPMENT SUPPORT PROJECT FUND**  
**(ISF) SITES**

## ZAMBIA NATIONAL SERVICE MUNSAKAMBA FARM (MKUSHI DISTRICT) ATTENDANCE SHEET

[illegible]





## ENVIRONMENTAL AUDIT FOR THE IRRIGATION DEVELOPMENT SUPPORT PROJECT FUND (ISF) SITES

## ZAMBIA CORRECTIONAL SERVICE- KABWE MUKUYU ATTENDANCE SHEET

[illegible]



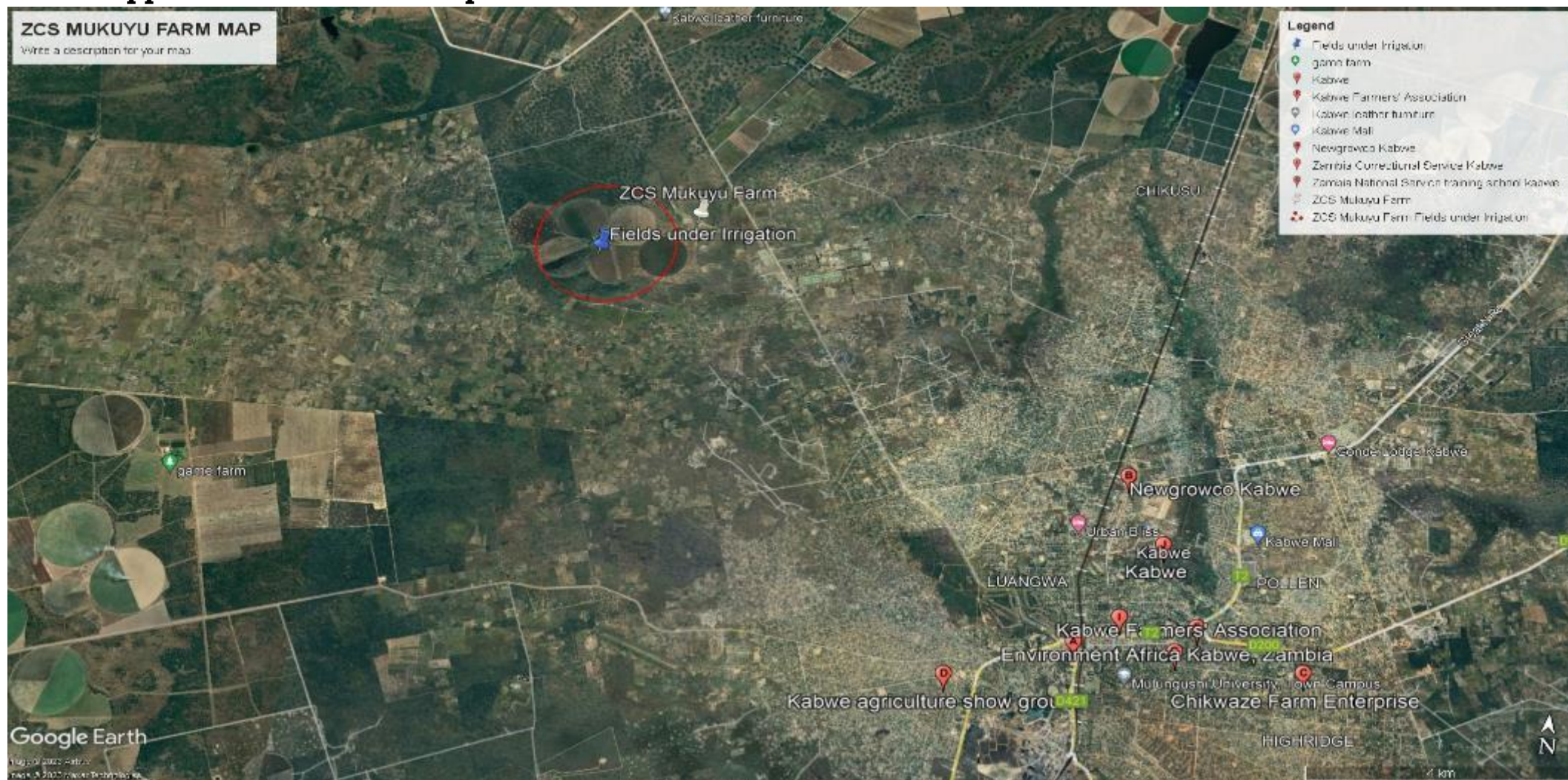
**ENVIRONMENTAL AUDIT FOR THE IRRIGATION DEVELOPMENT SUPPORT PROJECT FUND**  
**(ISF) SITES**

**ZAMBIA NATIONAL SERVICE MPIKA FARM (MPIKA DISTRICT) ATTENDANCE SHEET**[illegible]

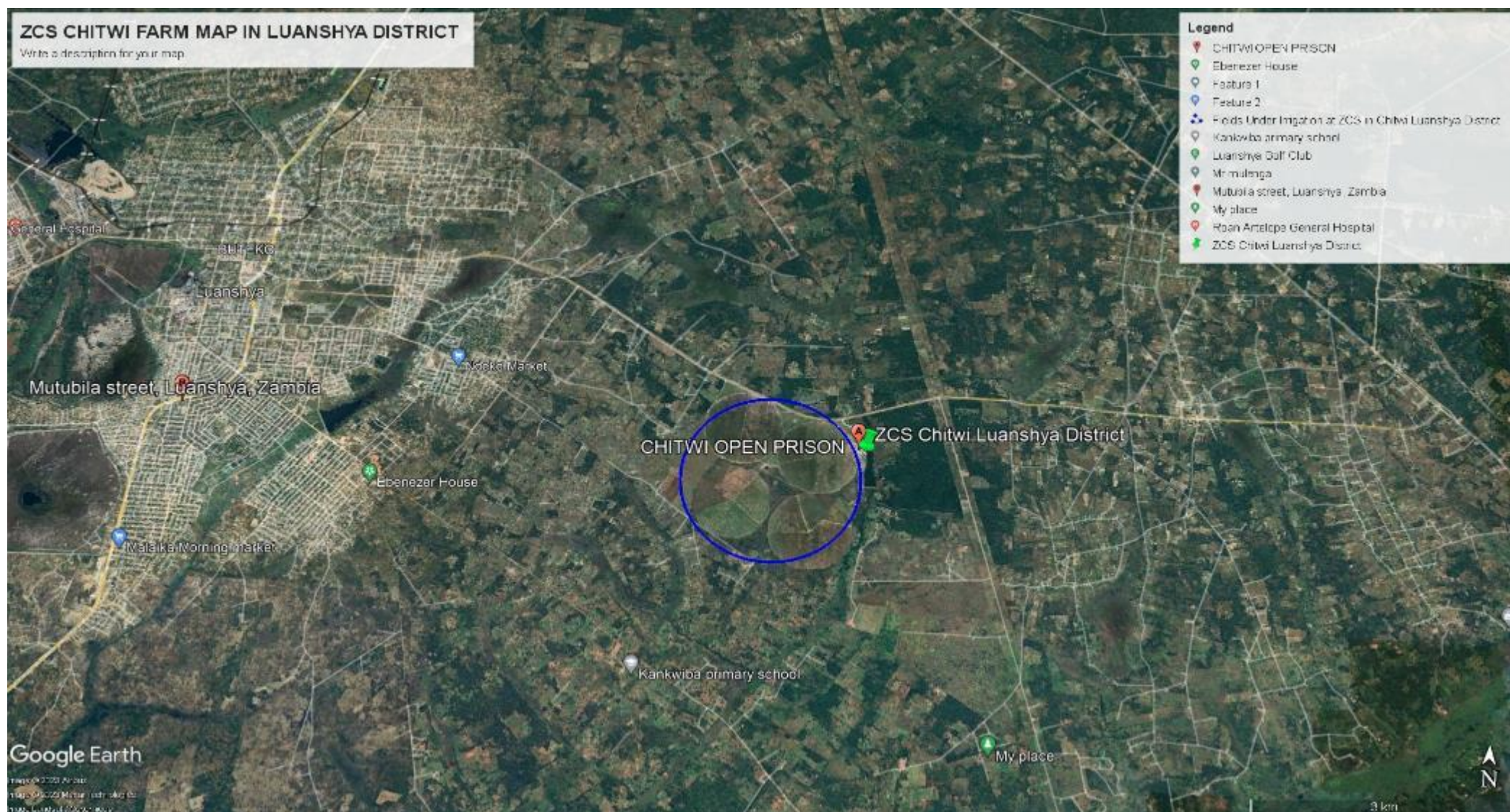




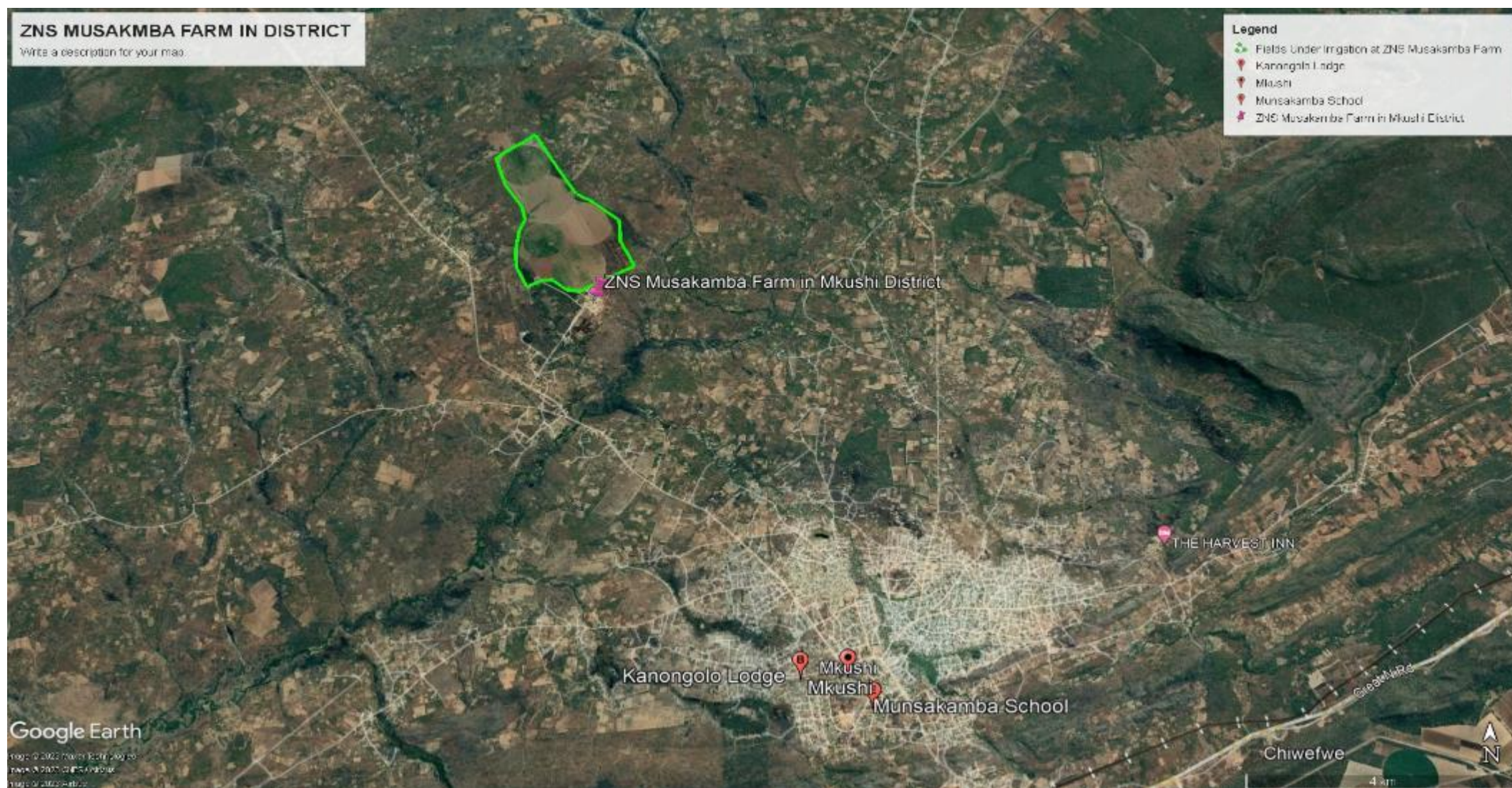
### Appendix 3: Location Maps for the Audited Facilities







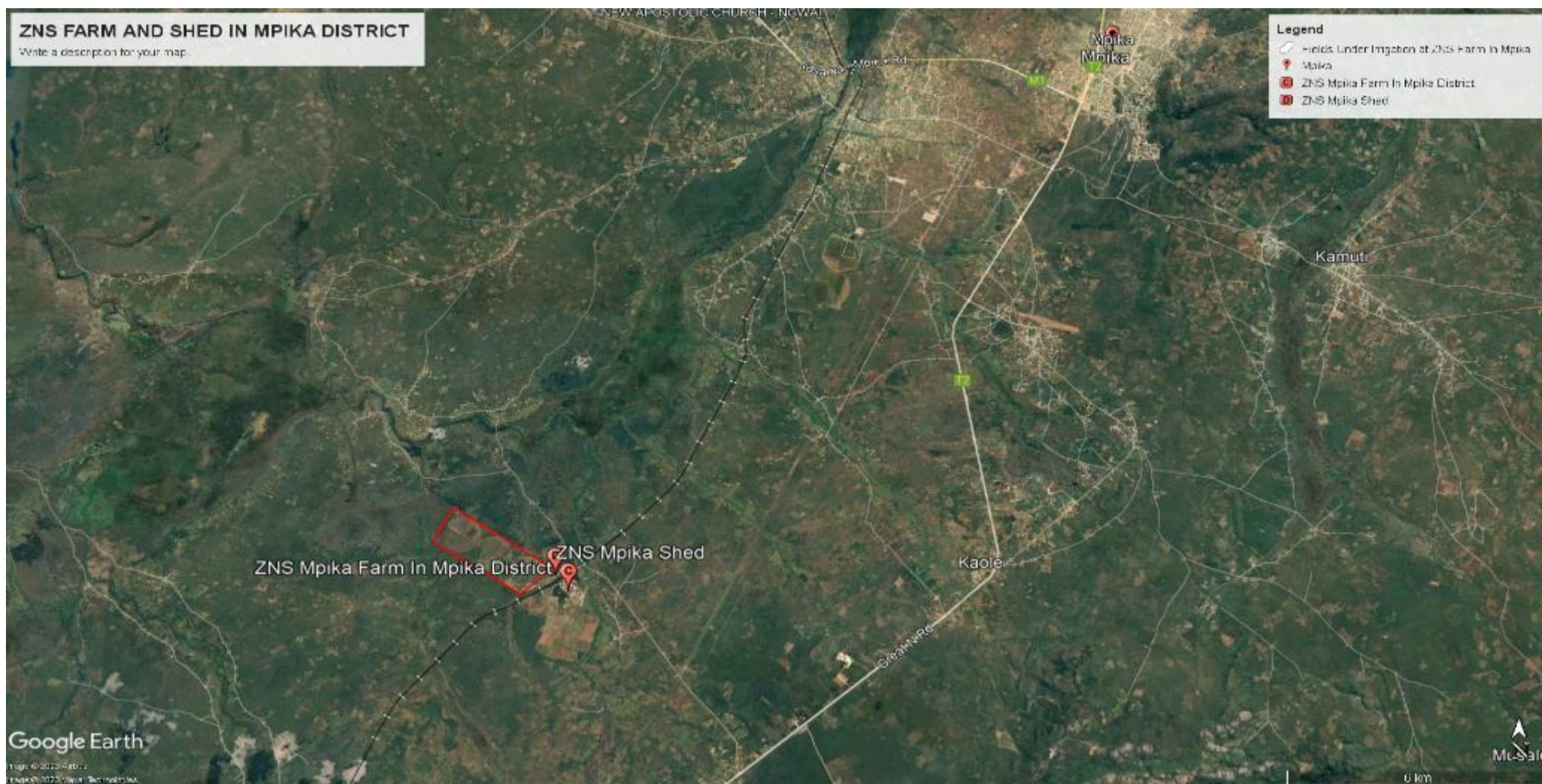








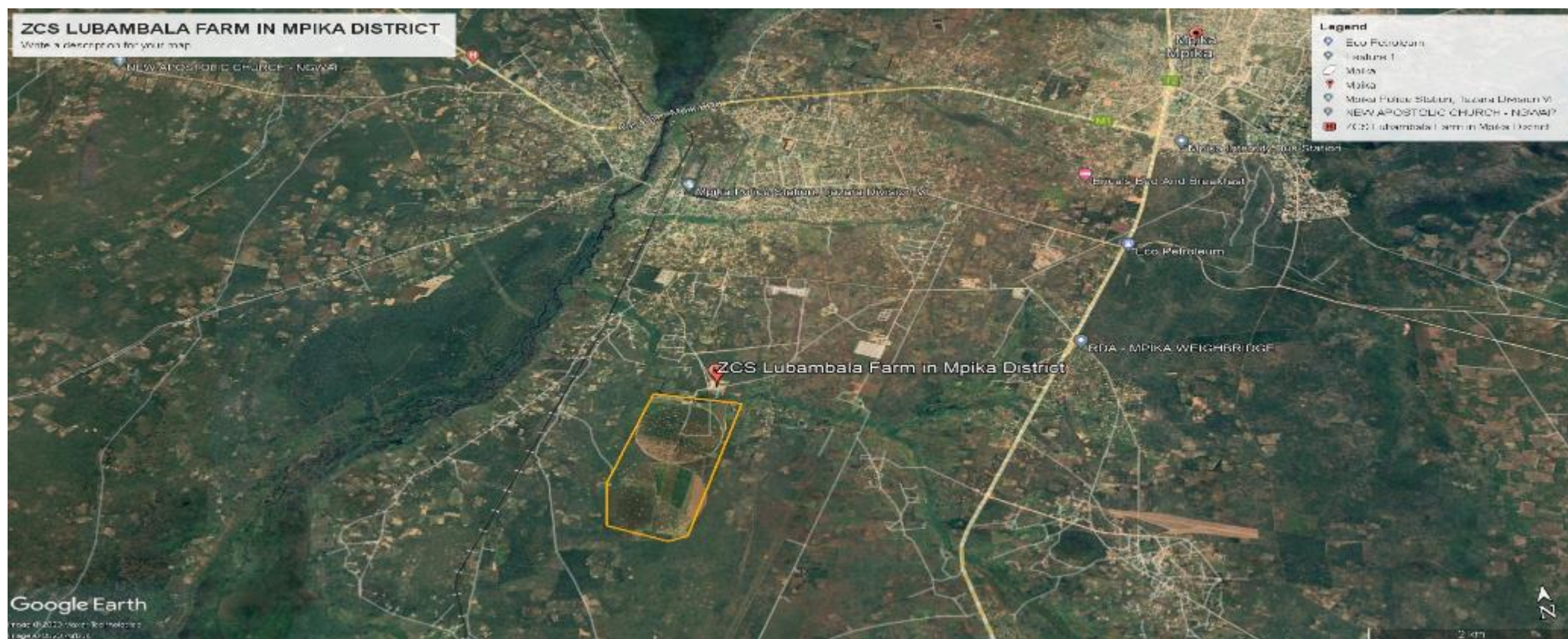














*Environmental Audit Report for ISF sites*

