

# ENVIRONMENTAL MANAGEMENT PLAN (EMP) FOR THE PROPOSED INTEGRATED FARMING ACTIVITIES ON FARM AUAS SUD #7, HELMERINGHAUSSEN AREA, //KARAS REGION



## Prepared for

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## List of Acronyms

DWAF	Department of Water Affairs and Forestry
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
GAP	Good Agriculture Practices
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
POPs	Persistent Organic Pollutants
PPE	Personal Protective Clothing
WHO	World Health Organization

## **1. INTRODUCTION**

The proponent (Mr. Simbarashe Chanduru) intends to subdivide Farm Auas Sud #7 which measures approximately 14 000 ha and utilize about 983 ha for integrated farming activities. These farming activities will interact in a symbiotic and synergetic manner whereby optimizing the use of resources on the farm. The overall objective is to practice soil and water conservation on the farm. The proposed farming activities will be established on the farm in phases over a period of five years. The activities will be integrated to ensure that waste from each activity will be used in other facilities. Conservation agriculture will be practiced with the main emphasis on taking care of the soil and managing water resources. Composting of waste from poultry as well as grass, shrubs and other material will be utilized to produce organic fertilizer for crops.

This Environmental Management Plan (EMP) was prepared in line with Section 8 (j) of the EIA Regulations (GN 30 of February 2012), and the proponent's terms of reference. The EMP contains aspects of the proposed management and mitigation measures to be taken to address the negative environmental impacts and enhancement measures for the positive environmental impacts identified in the environmental scoping report. It also addresses the need for compliance monitoring of identified significant environmental impacts.

The EMP is therefore important in ensuring that the management actions arising from the EIA processes are clearly defined and implemented through all phases of the project life cycle. The EMP is not a standalone document; thus, it must be read in conjunction with the Scoping report. All personnel taking part in the planning, construction, operation, maintenance and decommissioning of the proposed Aroab Scheme extension and upgrading should be made aware of the contents of this EMP. The EMP is also a dynamic document that allows for the evaluation of the success or failure of management actions and to carry out reorientation of the relevant actions if deemed necessary. It should be noted that the EIA and EMP is a legally binding document between the proponent and Ministry of Environment, Forestry and Tourism (MEFT) and implementation of the recommended management actions is mandatory.

## **1.2 Objectives of the EMP**

The EMP has the following objectives:

- To provide information on the potential negative impacts associated with the project and present mitigations measures for these impacts
- To provide guidelines for the management and monitoring of the identified environmental issues.
- To provide guidelines to the responsible persons to follow appropriate contingency plans in the case of various possible impacts

## **2. IMPLEMENTING THE EMP**

### **2.1 Role Players and Responsibility**

The overall implementation of this EMP, remains the core responsibility of the project proponent. However different stakeholders will also have roles to play in order to ensure proper project management.

#### **a. Proponent or Site Manager**

Appoint a Site Manager and/or Farm Manager during the construction and operation phase. The Site/Farm Manager will;

- Ensure that the employees and the Contractor are aware of all specifications, legal constraints as well as procedures pertaining to the project specifically with regards to the environment.
- Ensure that all stipulations within the EMP are communicated and adhered to by employees, contractor(s) and sub-contractors.
- Monitor the implementation of the EMP throughout the project by means of site inspections and meetings. This will be documented as part of the site meeting minutes.
- Be fully conversant with the Environmental Impact Assessment for the project, and all relevant environmental legislation

#### **b. Contractor and sub-contractors**

The Contractor(s) Managers will be contractually required to comply with the various commitments in this EMP. In the event of nonconformance, the contractor will be required to take corrective action according to the requirements of the EMP. Clean up may be done on their behalf, and if so, the contractor will be back-charged accordingly.

#### **c. Ministry of Agriculture Water and Land Reform**

The MAWLR will play a supervisory role to ensure that the project adhere to the conditions of the Water Resource Management Act, 2004 as well as to monitor water utilizations at the site in accordance with the contractual agreement. This can be done by means of regular site inspections and assessments.

#### **d. Ministry of Environment, Forestry and Tourism**

MEFT, through the office of Environmental Commission are the regulating authority and thus responsible for the approval/disapproval of this EMP. Moreover, MEFT are responsible to issue the Environmental Clearance Certificate and impose conditions that need to be complied with.

### **3. PROJECT DESCRIPTION**

#### **3.1 Nature of the proposed activities**

Several farming activities as listed below and as depicted below in Figure 3 are proposed to be established on the farm in a phased approach over a period of five years. The activities will be integrated to ensure that waste from each activity will be used up in other facilities. The overall objective is to practice soil and water conservation on the farm. Conservation agriculture will be practiced with the main emphasis on taking care of the soil and managing water resources. Composting of litter from poultry as well as grass, shrubs and other material will be composted to produce organic fertilizer for the crops.

- 20 ha orchard for drought tolerant fruits (mainly prickly pears, aloe vera and nut trees) and these will be incorporated into the existing natural camelthorn trees to create a food forest.
- 0.28 ha greenhouses for vegetables in an intensive aquaponic setup that will use composted plant and animal waste for fertigation.
- 3 ha will be used for growing vegetables under irrigation 1 400 m<sup>2</sup> composting facility.
- 5 000 m<sup>2</sup> for Poultry with unlimited free-range space within the 983 ha.

#### 4. LEGAL REQUIREMENTS (Policy, Act and Legislations)

Regulatory Instrument	Provision	Project Implications
<b>The Constitution of the Republic of Namibia (1990)</b>	The articles 91(c) and 95(i) commits the state to actively promote and sustain environmental welfare of the nation by formulating and institutionalising policies to accomplish the sustainable objectives which include: <ul style="list-style-type: none"> <li>- Guarding against overutilization of biological natural resources,</li> <li>- Limiting over-exploitation of non-renewable resources,</li> <li>- Ensuring ecosystem functionality,</li> <li>- Maintain biological diversity.</li> </ul>	Through implementation of the environment management plan, the proponent shall be advocating for sound environmental management as set out in the Constitution
<b>Environmental Management Act (No 7 of 2007) and Namibia's Environmental Assessment Policy (1995)</b>	The Act set the guiding policy/ legal framework for environmental management in Namibia. The intended activity is listed under the EMA regulation of 2012. Section3.	Comply with the Act
<b>Forestry Act No 27 of 2004.</b>	The act affords protection to certain indigenous plant species and any intention to remove such species would have to be legalised through a permit from the same ministry.	A Forestry permit may not be required at the stage but vegetation clearance must be kept at minimal.
<b>Water Resources Management Act ge2004</b>	This act provides provision for the control, conservation and use of water for domestic, agricultural, urban and industrial purposes.	Wastewater Treatment and Discharge Permit has been applied for the wastewater treatment plant.
<b>Nature Conservation Ordinance (Ordinance 4 of 1975).</b>	Conservation of indigenous and protected species	Comply with the act
<b>The National Heritage Act 27 of 2004</b>	Provides provisions for the protection and conservation of places and objects of national heritage significance, and to register to places and objects under that framework.	Comply with this regulation
<b>Pollution Control and Waste Management Bill</b>	This Bill serves to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management. This Bill will license discharge into watercourses and emissions into the air. The Bill	Comply with conditions

<b>Soil Conservation Act 76 of 1969</b>	Prevention and combating of soil erosion, conservation, improvement and manner of use of soil and vegetation, and protection of water sources. (Ministry of Environment and Tourism).	Soil conservation be ensured during project operations
<b>United Nation Convention on Biological Diversity (UNCBD) (1992).</b>	Aims primarily to prevent the loss of wetlands, to promote the wise use of these, and to give special protection to listed wetlands. The Convention stresses a habitat-type approach rather than a species-specific approach.	Comply with condition
<b>United Nation Convention to Combat Desertification (UNCCD)</b>	Conservation of biological diversity is “a common concern of humankind” and is an integral part of the development process	In accordance with the principles
<b>National Labour Act</b>	Working hours, condition and remuneration of employees	Compliance with its condition
<b>Affirmative Action (Employment Act, No.29 of 1998)</b>	Implementation of Affirmative action policy i.e. right of women and disabled people	Apply Affirmative action when employing project staffs
<b>Regulations relating to the Health and Safety of Employees at Work, 1996</b>	Employee’s working environment and the use of protective measures	Compliance with its conditions



## **5. ENVIRONMENTAL REQUIREMENTS**

In order to ensure successful implementation of this EMP, it is recommended that the proponent do consider the following aspects;

### **5.1 Environmental awareness training**

All contractors and employees involved management or any work at the project should be briefed on their obligation towards environmental protection and methodologies in terms of the EMP prior to work commencing. The briefing should be done by the proponent prior to any work in the form of an onsite talk.

### **5.2 Record keeping**

There should be an up to date filing system for the project whereby method statements, environmental incidents report, training records, audit reports and public complaints register are kept. It is advised that photographs of the site should be taken as a visual reference.

### **5.3 Non-compliance and penalties**

In cases of transgressions and non-compliance to the EMP by the contractor, that contractor should be liable to a penalty fine (as per Engineering Standards or as applicable to the Municipality). Transgressions should be recorded in a dedicated register, and be filed. The official designated by the Municipality shall issue the penalties in terms of the severity on the environment.

Adherence to this EMP during operation of the project will ensure that the environmental impacts associated with the project will be mitigated to a greater extent thus promoting sustainable development. The commitment and co-operation of the identified responsible person(s) will ensure effective implementation of the EMP; therefore it is imperative that there is file dedicated for Environmental Documentation.

### **5.4 Environmental Reports (annually)**

The proponent should appoint a responsible person who among others should be responsible for conducting regular monitor of general operation of the ponds. This monitoring report should then be compiled into annual reports. These reports should be submitted to the competent Authority (MEFT) for the renewal of the Environmental Clearance Certificate.

## 5.5 Awareness and Training

It is important to ensure that all personnel have the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and ongoing minimization of environmental harm.

To achieve effective environmental management, it is important that employees, contractors and sub-contractors are aware of the responsibilities in terms of the relevant environmental legislation and the contents of this EMP. This requires the proponent to ensure proper environmental training. The environmental training should typically include the following:

- Employees must have a basic understanding of the key environmental features of the site and the surrounding environment
- The significant environmental impacts, actual or potential, as a result of their work activities
- The environmental benefits of improved personal performance.
- Their roles and responsibilities as well as importance in achieving conformance with the environmental policy and procedures, and with the requirement of the Agency's environmental management systems, including emergency preparedness and response requirements.
- The potential consequences of departure from specified operating procedures.
- The mitigation measures required to be implemented when carrying out their work activities.
- The importance of not littering and the need to use water sparingly.
- Details of, and encouragement to, minimize the production of waste and re-use, recover and recycle waste where possible.
- Details regarding archaeological and/or historical sites which may be unearthed during construction and the procedures to be followed should these be encountered?
- Details regarding fauna and flora of special concern

## 6. PROPOSED MITIGATION MEASURES DURING DEVELOPMENT PHASE

Significant impacts	Source of impacts	Mitigation measures	Monitoring actions	Responsibility
<b>a). Biophysical environment</b>				
<ul style="list-style-type: none"> <li><b>Negative impact on vegetation</b></li> </ul>	Vegetation Clearance during construction of project facilities	-All large indigenous trees avoided -Vegetation clearance should be limited to the development area	Site clearance plan	Proponent
<ul style="list-style-type: none"> <li><b>Disturbance of natural habitats</b></li> </ul>	Various habitats may be disturbed during the establishment of projects	- Only vegetation directly affected may be cleared -avoid cultivation in riverine	Site clearance plan	Proponent
<ul style="list-style-type: none"> <li><b>Killing of small animals during land clearance</b></li> </ul>	Danger of killing, trapping and disturbance of small animals i.e. ground squirrel, rats etc.	-Minimize disturbance to the development area. -Do not trap, kill, and chase etc. small animals.	Site clearance plan	Proponent
<b>b). Water resources</b>				
<ul style="list-style-type: none"> <li><b>Increase water demand</b></li> </ul>	The use of freshwater for certain project activities might increase local demand.	-Freshwater must only be used for domestic use. Should there be any changes, an EA must be done.	-Monthly water account	Site Manager
<ul style="list-style-type: none"> <li><b>Contamination of surface</b></li> </ul>	Risk of surface water pollution from agro-chemicals, oil spills etc.	Encourage the use of less pesticides and fertilizers.	Soil quality Water quality	Site Manager
<ul style="list-style-type: none"> <li><b>Impact drainage</b></li> </ul>	Possibility of diverting the natural drainage and surface run off	Major drainage line must be identified during planning and be avoided during establishment.	Consider Drainage and topographic maps (contained in the EIA report)	Site Manager
	Sedimentation of the watercourse with eroded soil.	-Provide soil erosion preventative mechanism i.e. cultivating against the slope, erosion works on large gullies.	Site inspection	Site Manager
<b>c). Impacts on Energy</b>				
<ul style="list-style-type: none"> <li><b>Increase demand of electricity</b></li> </ul>	Electricity is need for construction activities i.e. welding.	-Explore the use of alternative energy sources such as solar energy.	-Monthly energy consumption	Site Manager

<b>d). Impact on Soil and topography</b>	Contamination of soil from oil, grease etc.	-Ensure regular servicing and maintenance of vehicles and machineries. -Servicing of machineries should be done off site.	Site inspection	
	Land clearance will expose soil to erosion from wind and water.	-Do not let the site bare for too long. -Provide erosion works to prevent excessive soil erosion.	Site inspection	Site manager
<b>e). Waste Management</b>				
• <b>Solid waste</b>	Generation of general waste i.e. garden waste, plastic, food items, supplies etc.	-All waste should be contained and properly dumped at nearby municipal dumping sites -Develop waste collection program -Create awareness among employees -Garden waste can recycled and used as fertilizer, mulch etc.	Regular inspection	
• <b>Sewage</b>	Poor or lack of sanitation may cause pollution.	-Provide a temporary sanitation for construction workers and security employees -Ablution facilities must be connected to the septic tank or sewage line.	Site inspection	Site Manager
<b>f). Impact of Temporary Employees</b>				
• <b>Nuisance</b>	Improper placement of temporary houses can be a nuisance to the nearby residents	-Only few employees must be allowed to stay onsite -Temporary houses must be placed far from existing residence.	Site inspection	Site Manager
• <b>Pollution</b>	Lack of sanitation and improper solid waste management can cause pollution	-All waste generated must be collected -Provide ablution facility for temporary employees	Site inspection	Site Manager
<b>g). Public Health and Safety</b>				
• <b>Noise and vibrations</b>	Generation of noise and vibration can be a nuisance to the residents	-Operation should be limited to daylight hours.		Site Manager

• <b>Dust</b>	Dust generation from construction activities can cause air pollution.	-Provide dust suppression measures	Air quality (visual inspection)	Site Manager
<b>h). Occupational health safety</b>				
• <b>Accidents and Injuries</b>	employees can be a risk of injuries from moving vehicles, machinery and equipment	-Employees must receive training in line with their respective job	Regular meeting	Site Manager/Foreman
• <b>Occupation health impacts</b>	Employees are at risk of occupational diseases resulting from the nature of the job and surrounding environments.	-All employees must be provided with -Personal Protective Equipment (PPE) -Adhere to normal working hours as per the National Labour Act.	Regular meeting	Site Manager
<b>i). Social-economic Impacts</b>				
• <b>Local employment</b>	Potential for both Direct and Indirect employment which will attract people from country sides	-Local people should be given preferences -Train local to build capacity		Project Team
• <b>Business prosperity</b>	Potential for secondary sources	-The project should buy from local stores/shops in order to contribute to the local economy		
• <b>HIV and AIDs</b>	-Higher risks of HIV transmission as migrant construction workers are more likely to ignore the consequences of casual sexual relationships.	Recruit people from local community to avoid migrant workers	-Regular health check ups	
• <b>Increase crime rate</b>	The project may attract new crime rate in the area	-Ensure proper security must be ensured		

## 7. MITIGATION MEASURES DURING OPERATIONAL PHASE

Significant impacts	Source of impacts	Mitigation measures	Monitoring actions	Responsibility
<b>a). Biophysical environment</b>				
<ul style="list-style-type: none"> <li><b>Negative impact on vegetation</b></li> </ul>	The crop field might attract new pest and crop diseases in the area	-Only grow locally known varieties	Site clearance plan	Farm Manager
<ul style="list-style-type: none"> <li><b>Use of dangerous chemicals</b></li> </ul>	Use of some pesticides which contains POP might cause serious impacts to the local biodiversity (flora and fauna).	- Only recommended cultivars can be planted. -Use of Round-up and chemicals containing POPs is not recommended.	Site clearance plan	Farm Manager
<b>b). Water resources</b>				
<ul style="list-style-type: none"> <li><b>Increase water demand</b></li> </ul>	The use of freshwater for certain project activities might increase local demand.	-Freshwater must only be used for domestic use. Should there be any changes, an EA must be done.	-Monthly water account	Farm Manager
<ul style="list-style-type: none"> <li><b>Contamination of surface</b></li> </ul>	Risk of surface water pollution from agro-chemicals, oil spills etc.	Encourage the use of less pesticides and fertilizers.	Soil quality Water quality	Farm Manager
<ul style="list-style-type: none"> <li><b>Impact drainage</b></li> </ul>	Possibility of diverting the natural drainage and surface run off	Major drainage line must be identified during planning and be avoided during establishment.	Consider Drainage and topographic maps (contained in the EIA report)	Farm Manager
	Sedimentation of the watercourse with eroded soil.	-Provide soil erosion preventative mechanism i.e. cultivating against the slope, erosion works on large gullies.	Site inspection	Farm Manager
<b>c). Impacts on Energy</b>				

<ul style="list-style-type: none"> <li><b>Increase demand of electricity</b></li> </ul>	The project will require electricity supply to run the pump station and center pivot.	-Explore the use of alternative energy sources such as solar energy.	-Monthly energy consumption	Farm Manager
<b>d). Impact on Soil and topography</b>	Contamination of soil from oil, grease etc.	-Ensure regular servicing and maintenance of vehicles and machineries. -Servicing of machineries should be done off site.	Site inspection	
	Land clearance will expose soil to erosion from wind and water.	-Do not let the site bare for too long. -Provide erosion works to prevent excessive soil erosion.	Site inspection	Farm manager
<b>e). Waste Management</b>				
<ul style="list-style-type: none"> <li><b>Solid waste</b></li> </ul>	Generation of general waste i.e. garden waste, plastic, food items, supplies etc.	-All waste should be contained and properly dumped at nearby municipal dumping sites -Develop waste collection program -Create awareness among employees -Garden waste can recycled and used as fertilizer, mulch etc.	Regular inspection	
<ul style="list-style-type: none"> <li><b>Sewage</b></li> </ul>	Poor or lack of sanitation may cause pollution.	-Provide a temporary sanitation for construction workers and security employees -Ablution facilities must be connected to the septic tank or sewage line.	Site inspection	Farm Manager
<b>f). Impact of Employees accommodation</b>				
<ul style="list-style-type: none"> <li><b>Nuisance</b></li> </ul>	Improper placement of temporary houses can be	-Only few employees must be allowed to stay onsite	Site inspection	Farm Manager

	a nuisance to the nearby residents	-Temporary houses must be placed far from existing residence.		
• <b>Pollution</b>	Lack of sanitation and improper solid waste management can cause pollution	-All waste generated must be collected -Provide ablution facility for temporary employees	Site inspection	Farm Manager
<b>g). Public Health and Safety</b>				
• <b>Noise and vibrations</b>	Generation of noise and vibration can be a nuisance to the residents	-Operation should be limited to daylight hours.		Farm Manager
• <b>Dust</b>	Dust generation from construction activities can cause air pollution.	-Provide dust suppression measures	Air quality (visual inspection)	Farm Manager
<b>h). Occupational health safety</b>				
• <b>Accidents and Injuries</b>	employees can be a risk of injuries from moving vehicles, machinery and equipment	-Employees must receive training in line with their respective job	Regular meeting	Farm Manager
• <b>Occupation health impacts</b>	Employees are at risk of occupational diseases resulting from the nature of the job and surrounding environments.	-All employees must be provided with -Personal Protective Equipment (PPE) -Adhere to normal working hours as per the National Labour Act.	Regular meeting	Farm Manager
<b>i). Impacts from Using semi-purified effluent and chlorine</b>				
• <b>Microbial risk to public health</b>	Microbial pathogen in wastewater could cause diseases i.e. gastric, diarrhea etc.	-Final effluent must analyzed before use -No untreated wastewater must be discharged in the environment - Effluent must be treated to the required standard	-Laboratory test	Farm Manager



		- Effluent line must be marked as unfit for human consumption		
<ul style="list-style-type: none"> <li><b>Chemical risk to human health</b></li> </ul>	<p>Presence of chemical such as cadmium, lead, and mercury could pose health risk.</p> <p>Handling or unintentional consumption of waste water could pose health risk to employees</p>	<ul style="list-style-type: none"> <li>-All employees must be provided with PPE</li> <li>-Employees must be trained on danger of chemicals they are using</li> <li>-Effluent line must be marked unfit for human consumption</li> </ul>	<ul style="list-style-type: none"> <li>-Regular meetings</li> <li>-Regular health check-ups</li> </ul>	Farm Manager
<ul style="list-style-type: none"> <li><b>Plant health</b></li> </ul>	Too much chlorine or too little chlorine is poisonous.	-Ensure regular monitoring of chlorine level	-Effluent quality monitoring	Farm Manager
<ul style="list-style-type: none"> <li><b>Environmental risks</b></li> </ul>	Soil and groundwater pollution is the main risk of using wastewater in agriculture.	-Do not discharge untreated wastewater in the environment	<ul style="list-style-type: none"> <li>-Effluent quality monitoring</li> <li>-Groundwater monitoring</li> </ul>	Municipality/MAWF
<b>i). Social-economic Impacts</b>				
<ul style="list-style-type: none"> <li><b>Local employment</b></li> </ul>	Potential for both Direct and Indirect employment which will attract people from country sides	<ul style="list-style-type: none"> <li>-Local people should be given preferences</li> <li>-Train local to build capacity</li> </ul>		Proponent
<ul style="list-style-type: none"> <li><b>Business prosperity</b></li> </ul>	Potential for secondary sources	-The project should buy from local stores/shops in order to contribute to the local economy		
<ul style="list-style-type: none"> <li><b>HIV and AIDs</b></li> </ul>	-Higher risks of HIV transmission as migrant construction workers are more likely to ignore the consequences of casual sexual relationships.	Recruit people from local community to avoid migrant workers	-Regular health check ups	
<b>Increase crime rate</b>	The project may attract new crime rate in the area	-Ensure proper security must be ensured		Farm Manager

j). Legislative requirements				
<ul style="list-style-type: none"> <li><b>Non-compliance</b></li> </ul>	Lack of compliance with relevant legislations may cause transgression or conflicts with the law.	<ul style="list-style-type: none"> <li>Implement the conditions of the Wastewater Discharge Permit and also apply for renewal once the certificate has expired.</li> <li>Any changes to the project should be subjected to the EIA as per EMA.</li> </ul>	-Renewal of Permits and ECC	Proponent
<ul style="list-style-type: none"> <li><b>Lack of enforcement of the EMP</b></li> </ul>	Lack of enforcement would mean the potential impact associated with the plant could still exist	<ul style="list-style-type: none"> <li>Provide a commitment plan for improvement and corrective actions to remedy the existing and future challenges that could lead to serious environmental and public health impacts</li> <li>Compile annual Environmental Performance Report which should be submitted to MET</li> <li>This EMP must be updated every three years, concurrent with the renewal of the ECC.</li> </ul>	Bi-annual reports to MET	Proponent

## **8. ENVIRONMENTAL COMPLIANCE AND MONITORING: OPERATIONAL PHASE**

In order to ensure adherence to this EMP, it is advisable to keep monitoring of certain issues. This monitoring is ultimate responsibility of the Site Manager to be appointed by the proponent. Monitoring activities should be done at different interval/frequencies as indicated in the table below and should be done throughout the project life span. Any negative impact found should be reported to the Environmental Commissioner and correct mitigation measures should be established by the project team in consultation with different specialists. It would be advisable that the EMP be revisited after 3 years to ensure that changes in site conditions or operation are addressed, as well as to incorporate any new or amended legislation that may be applicable. The project manager prepares a quarterly report on the environmental performance of the project.

## **9. CONCLUSION**

Upon approval by the authorities, this EMP shall be considered legally binding and any deviation or transgression from this EMP is punishable by law as per the Environmental Management Act, No. 07 of 2007. The preparation of this EMP is based on the current information about the project, any upgrade or changes to the project proposal shall trigger changes to this EMP.

Upon approval by the MEFT, this EMP should be used as an on-site reference document for the proposed Aroab Scheme, during the planning & design, construction, operation and maintenance, and decommissioning phase, thus a copy of this EMP shall be kept onsite always. It is a legally binding document, thus, any deviation or transgression from this EMP is punishable by law as per the Environmental Management Act 07 of 2007. Parties responsible for transgressing may be held responsible for any rehabilitation that may need to be undertaken.

The proponent should also provide a biannual annual Environmental Report to the MEFT and ensure renewal of the ECC every after three years. The proponent must also comply with the relevant conditions of the Water Abstraction Permit and general agricultural standards of MAWLR. The validity of this EMP is three years of which a review should be made. Moreover, the MEFT is mandated to conduct regular monitoring and inspections on this project.



## **10. ANNEXURES**

Annexure 1: Environmental Compliance Monitoring Form

Annexure 2: Incident/Accident Report Form

## Annexure 1: Environmental Compliance Monitoring Checklist

following checklist should be used during the compliance monitoring.

### PART 1: ADMINISTRATIVE INFORMATION

Project Title:		Date:
Project location:	Reporting period	Individual Preparing Checklist:
Region:		Department:
Scheme Superintendent:		Phone No.:

### PART 2: ENVIRONMENTAL ASPECTS

ENVIRONMENTAL ASPECT/IMPACT	ENVIRONMENTAL COMPLIANCE (AS PER EMP REQUIREMENT?)		<i>Remarks (specify the location, a good practice observed, causes of non-conformity, and proposed action)</i>
	YES	NO	

### PART 3: RECOMMENDATION

**FOR EACH ITEM CHECKED IN PART 2, DESCRIBE THE CORRESPONDING CONTROLS TO BE IMPLEMENTED TO REDUCE POTENTIAL ENVIRONMENTAL IMPACTS** (e.g., spill prevention, erosion controls, air emission controls including dust suppression, selection of materials, etc.). Provide details of the activities and impacts for each box and the proposed mitigations. Include attachments where appropriate. Use the same number system for your input.

ECO: Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Annexure 2: Incident / Accident Report Form

This form is to be completed in case of an environmental incident and shall be forwarded to the Project's RE during the construction phase and NamWater's Environment Section during the operation and maintenance phase.

**Note:** This form is not intended to replace other NamWater's internal reporting procedures.

### Section 1. GENERAL DETAILS

<b>Date:</b> <b>Time:</b> am / pm	<b>Reported By:</b> <b>Name:</b> <b>Position:</b> <b>Company:</b> <b>Phone:</b>
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### Section 2. RESPONSIBLE PARTIES

<b>Name:</b>	<b>Phone:</b>
<b>Company Name:</b>	<b>Email:</b>
<b>Witness Details (if applicable)</b>	
<b>Name:</b>	<b>Phone:</b>
<b>Witness Statement Taken?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	

### Section 3. INCIDENT DETAILS

<b>Type of Incident:</b>	<input type="checkbox"/> Spill	<input type="checkbox"/> Cultural Heritage disturbance/damage
	<input type="checkbox"/> Waste/rubbish	<input type="checkbox"/> Chemicals/herbicide Use
	<input type="checkbox"/> Wildlife disturbance	<input type="checkbox"/> Water pollution/contamination
	<input type="checkbox"/> Vegetation disturbance/damage	<input type="checkbox"/> Nuisance (noise, air quality)
	<input type="checkbox"/> Acid Sulphate Soils disturbance	<input type="checkbox"/> Other:

**Section 4. CONTRIBUTING FACTORS AND PREVENTATIVE ACTIONS**

(to be completed by Manager/Supervisor)

<b>Cause, Circumstances, and Contributing Factors:</b>			
<b>Measures that were in place to prevent this type of incident:</b>			
<b>Measures to be implemented to prevent/minimize this type of incident from occurring again</b>			
<b>Comments:</b>			
<b>Name:</b>		<b>Position:</b>	
<b>Company:</b>		<b>Signature:</b>	<b>Date:</b>
<b>Incident Description</b>			
<b>Immediate Response Actions Taken:</b>			

**Section 5. NAMWATER ENVIRONMENT OFFICE ONLY**

<b>Assessed Level of Potential or Actual Harm:</b>			
<b>Is an Investigation Required?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Investigation Team:</b>		
<b>FOLLOW UP ACTION:</b>			



<b>COMMENTS</b>	
<b>Name:</b>	<b>Position:</b>
<b>Signature:</b>	<b>Date:</b>