

**ENVIRONMENTAL IMPACT ASSESSMENT  
FOR THE HARVESTING AND MANAGEMENT OF *PROSOPIS* SPECIES AT  
THE MARIENTAL PILOT SITE IN HARDAP REGION**

FINAL SCOPING REPORT

CLIENT:

Ministry of Environment Forestry and Tourism



**APRIL 2023**

## PROJECT INFORMATION

<b>PROPONENT:</b>	Ministry of Environment, Forestry and Tourism (Directorate of Forestry)
<b>PROJECT TITLE:</b>	Harvesting and Management of <i>Prosopis</i> Species at the Mariental Pilot Site in Hardap Region, Namibia
<b>PROJECT TYPE:</b>	Environmental Impact Assessment Study
<b>PROJECT LOCATION:</b>	Mariental, Hardap Region, Namibia
<b>COMPETENT AUTHORITY:</b>	Office of the Environmental Commissioner (Ministry of Environment and Tourism)
<b>ENVIRONMENTAL ASSESSMENT PRACTITIONERS (EAPs)</b>	Nevunduko Consulting Services Mr. Olavi Makuti <b>Cell:</b> +264 81 1405033 <b>E-mail:</b> <a href="mailto:olavi.makuti@gmail.com">olavi.makuti@gmail.com</a>
<b>DATE OF RELEASE</b>	April 2023

## EXECUTIVE SUMMARY

Nevunduko Consulting Services (herein referred to as the consultant) has been appointed by The Ministry of Environment, Forestry and Tourism (herein referred to as the proponent) to act on their behalf in obtaining an Environmental Clearance Certificate (ECC) for the proposed harvesting and management of *Prosopis* species at the Mariental Pilot Site. The Mariental Pilot Site is located in the Hardap Region and extends from the Hardap Dam to the town of Mariental along the Fish River. The site is about 950 ha in extend.

In terms of the Environmental Management Act No.7 of 2007 and the Environmental Impact Assessment (EIA) Regulations of 2012, the project triggers a listed activity that cannot be undertaken without an Environmental Clearance Certificate (ECC). An environmental clearance application will therefore be submitted to the Ministry of Environment, Forestry and Tourism (MEFT) for approval before the commencement of the *Prosopis* harvesting activities.

Project activities at the Mariental Pilot Site will include the sustainable harvesting of *Prosopis* species and economic utilization of the harvested biomass. The sustainable utilization of the *Prosopis* vegetation is intended to enhance the flow of water in the Orange-Fish Basin where *Prosopis* is known to block water channels.

No impacts with a “*high*” significance rating are expected on this project. The few impacts that were rated “*medium*” before mitigation can be successfully reduced to “*low*” with the implementation of the mitigation measures recommended in the Environmental Management Plan (EMP).

The following potential impacts on the environment with a “*medium*” rating have been identified:

- Increased erosion
- Traffic disturbance
- Disruption of ecosystem services
- Loss of livelihood opportunities
- Health and safety hazards
- Waste generation
- Pollution from herbicides

The proposed project will result in many environmental and socio-economic benefits such as the improvement in aquifer recharge, economic benefits from the sale of *Prosopis* products, restoration of indigenous biodiversity and facilitation of water flow in the Fish River.

Nevunduko Consulting Services believes that a comprehensive assessment of the proposed project has been achieved and that the Environmental Clearance Certificate can be awarded.

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## ABBREVIATIONS/ACRONYMS

<b>DAPEES</b>	Directorate of Agricultural Production, Extension and Engineering Services
<b>DoF</b>	Directorate of Forestry
<b>DRFN</b>	Desert Research Foundation of Namibia
<b>ECC</b>	Environmental Clearance Certificate
<b>EIA</b>	Environmental Impact Assessment
<b>EMA</b>	Environmental Management Act
<b>GEF</b>	Global Environmental Facility
<b>HIV</b>	Human Immunodeficiency Virus
<b>I&amp;APs</b>	Interested and Affected Parties
<b>MAWLR</b>	Ministry of Agriculture, Water and Land Reform
<b>MEFT</b>	Ministry of Environment, Forestry and Tourism
<b>NAMCOL</b>	Namibia College of Open Learning
<b>NAMWATER</b>	Namibia Water Corporation
<b>ORASECOM</b>	Orange- Senqu River Commission
<b>PPP</b>	Public Participation Process
<b>PPSC</b>	<i>Prosopis</i> Project Steering Committee
<b>SADC</b>	Southern African Development Community
<b>SAP</b>	Strategic Action Programme
<b>UNDP</b>	United Nations Development Programme
<b>VMP</b>	Vegetation/Forest Management Plan

# 1. INTRODUCTION

## 1.1 BACKGROUND

The Ministry of Environment, Forestry and Tourism (Directorate of Forestry) with financial support from the Orange- Senqu River Commission (ORASECOM) intends to support a project at the Mariental Pilot Site that will include the sustainable harvesting of *Prosopis* species. Furthermore, the project will also advocate for the economic utilization of the harvested *Prosopis*. The sustainable utilization of the *Prosopis* vegetation is intended to enhance the flow of water in the Orange- Fish Basin where *Prosopis* is known to block water channels.

ORASECOM serve as the technical advisor of the Parties (four member states: Botswana, Kingdom of Lesotho, Namibia and South Africa) on matters relating to the development, utilization and conservation of the water resources of the Orange- Senqu River Basin. As part of its obligations, ORASECOM also from time to time avail resources and technical support to respective Governments to carry out projects aimed at promoting equitable and sustainable development of resources in the basin. This project therefore forms part of the support given by ORASECOM to member states.

ORASECOM, with support from United Nation Development Programme (UNDP) secured financial support from Global Environmental Facility (GEF) to implement selected priority activities of Strategic Action Programme (SAP). The UNDP-GEF project titled, Support to the Orange-Senqu River Strategic Action Programme (SAP) Implementation, the project will be implemented by UNDP and executed by ORASECOM.

It is against this background that the Proponent (Ministry of Environment, Forestry and Tourism) through ORASECOM has commissioned this EIA project to conform to the Namibia Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (Government Notice 30 of 6 February 2012) and obtain Environmental Clearance Certificate (ECC) for the proposed project.

## 1.2 ACTIVITIES REQUIRING ENVIRONMENTAL CLEARANCE

According to the Environmental Management Act (No.7 of 2007) and the Environmental Impact Assessment Regulations the following activities may not be undertaken without an Environmental Clearance Certificate:

**Forestry activities** - The clearance of forest areas, deforestation, afforestation, timberharvesting or any other related activity that requires authorization in terms of the Forest Act, 2001 (Act No. 12 of 2001) or any other law.

## 1.3 PROJECT MOTIVATION/RATIONALE

*Prosopis* is a native plant from South America that can range in size from a one to three meter shrub up to an eight-meter multi-stemmed tree with a spreading canopy. Various studies concluded that a German settler introduced *Prosopis* in Okahandja in 1897 for shade and fodder because of Namibia's aridity (Beisswanger *et al*, 2015).

*Prosopis* has highly adaptable roots that can utilize both surface and groundwater. Furthermore, *Prosopis* can fix atmospheric nitrogen in their root nodules and this makes them to perform well in areas with soils that are not fertile. The plant also secretes allelochemicals that prevent the growth of surrounding plants, enabling it to outcompete indigenous vegetation (Beisswanger *et al*, 2015).

Because of the above-mentioned reasons, *Prosopis* has become the dominant vegetation species along Fish River in the study area and has resulted in the reduction of species diversity. There is therefore a strong need to control the proliferation of *Prosopis* in the Hardap Region and the broader Orange-Fish River basin by harvesting it and replacing it with indigenous vegetation. If it is not managed properly, *Prosopis* has the capacity to double every five years as the population expands at a rate of 18% per annum (Strohbach, *et al*, 2015).

*Prosopis* can have detrimental effects on the water supply of this already arid part of the country. According to Beisswanger *et al*, 2015, a mature *Prosopis* tree can consume up to fifty liters of water per day. This can significantly affect the underground water resources and downstream flow. Strohbach, *et al*, 2015, further support this by indicating that because of the *Prosopis* encroachment

along the Fish River, about 18% of the water that is supposed to reach lower parts of the Fish River where the new Neckartal Dam is located is lost.

Although *Prosopis* causes ecological damage, it can be commercially utilized as biofuel, firewood, charcoal, timber, and fodder. The residents of affected communities such as Mariental can harvest *Prosopis* to create new sources of income and alleviate the high unemployment rate experienced in the region. Many countries around the world has successfully implemented the commercial harvesting of *Prosopis*.

Therefore, the most logical choice for the management of *Prosopis* will be the harvesting of trees and the removal of saplings. This effort must be coupled with the revegetation of the area with indigenous vegetation species to reduce the risk of endangering the riverbank through erosion during flash floods and other ecological implications.

#### **1.4 TERMS OF REFERENCE**

The proponent required the Environmental Assessment Practitioner to carry out this study as per the requirements of the Environmental Management Act No.7 of 2007 and the Environmental Assessment Regulations (February 2012).

The EIA process will investigate if there are any potential significant biophysical and socio-economic impacts associated with the intended harvesting and management of *Prosopis* at the Mariental Pilot Site. Public participation is the cornerstone of the EIA process as this is the stage where Interested and Affected Parties (I&APs) are considered and involved in the decision making process. The EIA process would therefore provide the I&APs an opportunity to raise issues of concern and suggestions for enhanced benefits.

As such, the Proponent and Consultant have agreed to undertake the study in the following phases as provided for in Namibia's Environmental Management Act No.7 of 2007 and its Regulations.

##### **1.4.1 PHASE I: PROJECT INITIATION & INTERNAL SCREENING**

- Formulation of background information note

- Notification to the Ministry of Environment, Forestry and Tourism (MEFT) of the proposed project through submission of the EIA application form and online registration
- Undertake site visits to identify environmental issues
- Identify key stakeholders, regulatory authorities and Interested and Affected Parties (IAP)

#### **1.4.2 PHASE II – EIA AND ENVIRONMENTAL MANAGEMENT PLAN**

- Notify other regulatory authorities as relevant as well as IAP (advertisement through newspaper, site notices, email etc.)
- Conduct stakeholder consultation meetings with other regulatory authorities and Interest and Affected Parties (IAP)
- Review technical reports produced for the *Prosopis* project
- Assess the potential environmental impacts of the project activities
- Compile the EIA report and EMP
- Circulate the EIA report and EMP to regulatory authorities and IAP for reviewing and comments
- Incorporate input and comments from the regulatory authorities and IAP
- Submit the final report to MEFT for their review and decision making

### 1.5 ENVIRONMENTAL ASSESSMENT PRACTITIONERS (EAPs)

As previously noted, Nevunduko Consulting Services was appointed by ORASECOM, the financiers of the Environmental Impact Assessment (EIA) with the Ministry of Environment, Forestry and Tourism (Directorate of Forestry) as the Project Proponent.

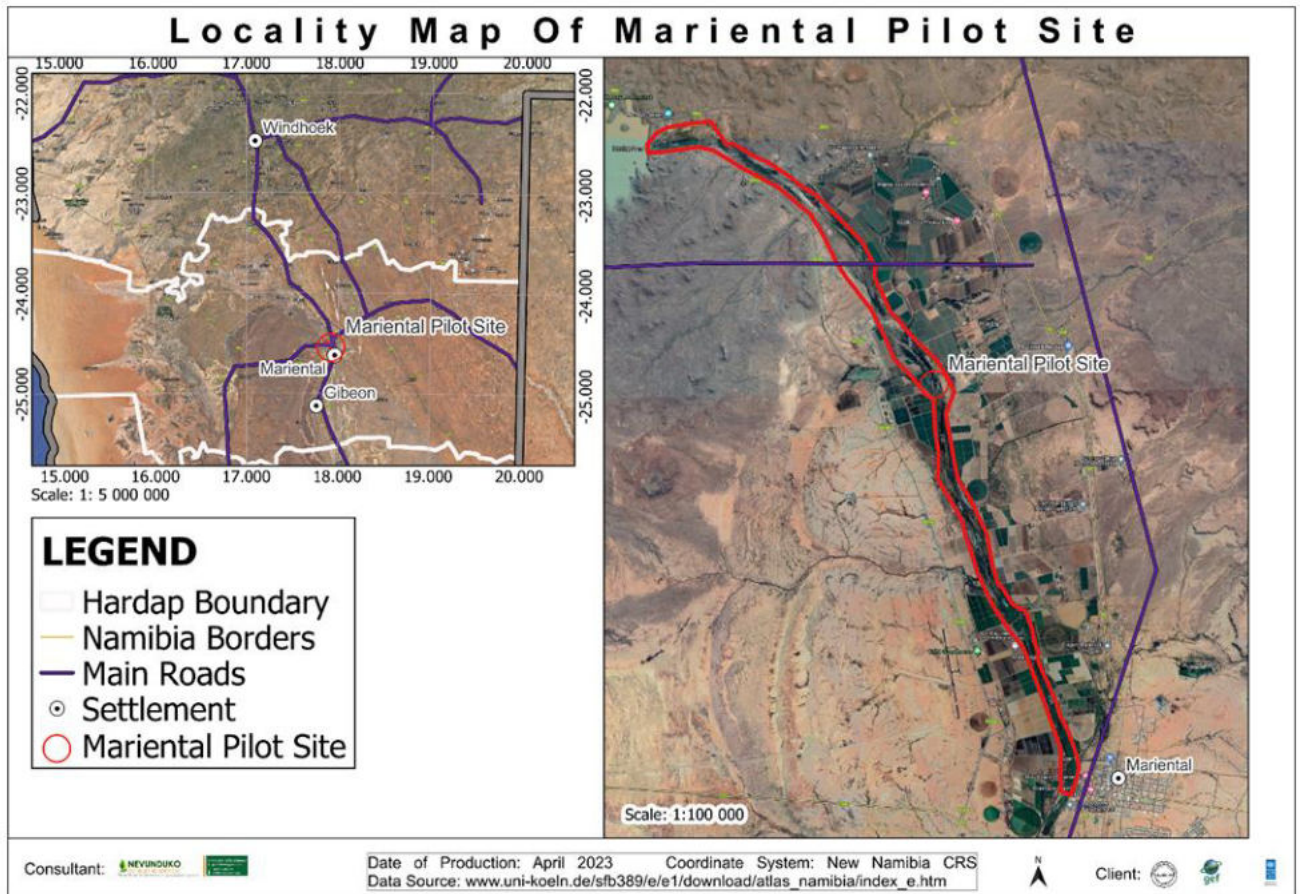
Nevunduko Consulting Services identified five Project Team Members who were principally responsible for conducting the EIA process. The team members and their responsibilities are indicated in the table below:

<b>NAME</b>	<b>ROLE</b>
1. Mr. Gabriel Hatutale	Overall Project Coordination
2. Mr. Olavi Makuti	Lead Environmental Assessment Practitioner
3. Mr. Shivute Nangula	Environmental Impact Assessment
4. Mr. Jericho Mulofwa	Specialist Biodiversity Assessment
5. Ms. Cecilia Ndunge	Environmental Impact Assessment and Stakeholder Engagement

# DESCRIPTION OF THE PROPOSED PROJECT

## 1.6 PROJECT LOCATION

The project will be undertaken at the Mariental Pilot Site that is located in the Hardap Region of Namibia as shown on figures below. The site at Mariental is 950 ha in extent.



**Figure 1:** Location of Mariental Pilot Site.

## 1.7 PROSOPIS HARVESTING

All *Prosopis* plants, including saplings, in the demarcated compartment will be removed. The pilot areas will be demarcated into compartments (operational land units). It is planned that the site will be demarcated into blocks or compartments of 100m x 100m which will translate to 1 ha per compartment. A 15m wide access road will be established at the site that will be used for the transportation of harvested materials, equipment and personnel. The access roads will serve as fire

breaks for incidental fires, especially for the management of the revegetation.

This means the price quotes at the time of implementing this plan will be based on 1 ha harvested and the density (stocking) of the *Prosopis* and sizes of the trees being harvested.

### **1.7.1 HARVESTING METHODS**

Many methods are available throughout the world with practical experiences from neighbouring South Africa. These include Mechanical, Manual combined with hand-operated machines, Chemical applications, Biological and fire. The choice is based on many factors particularly on the objective of harvesting and in most applications the use of more than one of these methods needs to be deployed for effective results.

In the case of the Mariental Pilot area, the main objective of harvesting is to sustainably manage the *Prosopis* trees while promoting the regrowth and revegetation of indigenous tree species, which have been outcasted by *Prosopis*. To achieve this, the Project will use a combination of Manual with hand-operated machinery reinforced with the use of approved chemicals for killing the stumps. However, the use of chemicals will be assessed and verified by this EIA process. Stumps are killed by either an approved chemical and saplings/regeneration are removed manually on an annual basis during winter season, when the cambium tissue is not very much active or growing. The removal of coppices in winter ensures that not much coppicing takes place from the same areas.

### **1.8 MANAGEMENT OF NATURAL REGENERATION.**

The project will use the natural approach method for regenerating the harvested areas. This will start with ensuring that maximum care is taken to protect the indigenous trees found growing together with *Prosopis* during harvesting.

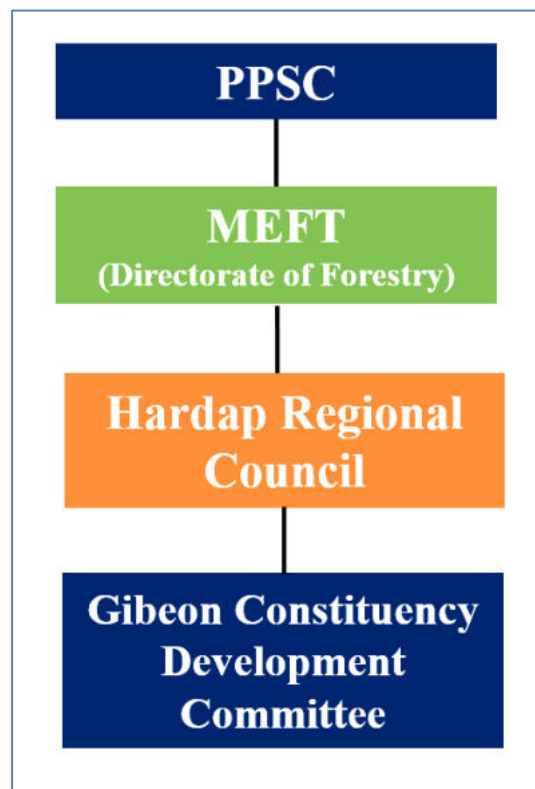
Secondly, the natural vegetation (wildlings) will be protected in either cluster or individually using spot fencing to ensure that they are not browsed or damaged by stray animals or humans. The protection will also include spot weeding to protect them from fire damage when it occurs.



Thirdly, the harvested areas will be directly seeded with indigenous tree seeds collected by the DoF and other interested parties who may want to sell to the project. The seeds will be treated with the appropriate chemicals to prevent them from being eaten up by rodents. The seeds will also be treated to remove seed dormancy to speed up the germination by the methods available such as boiling, scarifications or acidifications. The project will use both Manual and drones for broadcasting the seeds

### **1.9 PROJECT IMPLEMENTATION ARRANGEMENTS**

The Ministry of Environment, Forestry and Tourism will be the Implementing Agency (IA). The Hardap Regional Council through the CDC will own the project at the Regional level in line with the Decentralization Policy. The Forestry Office at Mariental will implement the project with support from the line Ministries. The Mariental Forestry Office will also supervise and monitor the activities of SMEs doing the harvesting.



**Figure 2:** Project implementation organogram

**Table 1:** Key stakeholders, their roles, and responsibilities

STAKEHOLDER	ROLES AND RESPONSIBILITIES
<b><i>Prosopis</i> Project Steering Committee</b>	<ul style="list-style-type: none"> <li>    Project executing Agency</li> <li>    Development of ToR for recruiting SMEs.</li> <li>    Development of appropriate <i>Prosopis</i> project Management guidelines</li> <li>    Development of project-level monitoring and evaluation tools for the pilot sites.</li> <li>    Collaborating with ORASECOM on VMP implementation</li> <li>    Lobbying for financial support</li> </ul>
<b>Ministry of Environment, Forestry and Tourism</b>	<ul style="list-style-type: none"> <li>  <i>Prosopis</i> Project Implementing Agency</li> <li>  Ensuring VMP compliance with relevant laws and regulations during the implementation</li> <li>  Enhancement of implementation capacity to ensure efficient and effective implementation of the plan.</li> <li>  Facilitation of learning between and among key and local stakeholders.</li> <li>  Promotion of knowledge management on best practices.</li> <li>  Updating the VMP every after five years.</li> </ul>
<b>Hardap Regional Council</b>	<ul style="list-style-type: none"> <li>    Monitoring of VMP implementation in the pilot site.</li> <li>    Reporting and sharing experiences about the project in the HRDCC and Central Government.</li> </ul>
<b>MAWLR- Directorate of Land Reform</b>	<ul style="list-style-type: none"> <li>  Adjudication and mapping of Land ownership in the pilot area.</li> <li>  Training the Hardap Communal Land Board on the impact of <i>Prosopis</i> on Land distribution and management.</li> <li>  Mapping of land affected by <i>Prosopis</i> encroachment in the Pilot area.</li> </ul>

<b>MAWLR- Directorate of Rural Water Supply and Sanitation</b>	<ul style="list-style-type: none"> <li>   Data collection from the monitoring boreholes in the Pilot area.</li> <li>   Ecological data on water quality and quantity in the Pilot area.</li> <li>   Coordination of water-related activities in the Pilot area.</li> </ul>
<b>MAWLR- Engineering, Scientific and Extension Services</b>	<ul style="list-style-type: none"> <li>   Advising on farming technologies to farmers in the Pilot area.</li> <li>   Monitoring land degradation and soil erosion in the Pilot area.</li> <li>   Advising farmers on the use of <i>Prosopis</i> as fodder.</li> </ul>
<b>MAWLR- Directorate of Veterinary Services</b>	<ul style="list-style-type: none"> <li>   Regulating the movement of Livestock in the Pilot area.</li> <li>   Monitoring the livestock numbers and the carrying capacity of grazing land in the Pilot area.</li> </ul>
<b>Ministry of Urban and Rural Development</b>	<ul style="list-style-type: none"> <li>   Infrastructure development in the Pilot area.</li> <li>   Communal Land adjudication by TA through Communal Land Board outside commercial farming areas in the Pilot area.</li> </ul>

## **ANALYSIS OF PROJECT ALTERNATIVES**

### **1.10 NO ACTION**

The No Action Alternative concerning the proposed project implies that the status quo is maintained and nothing is done to address the detrimental effects of *Prosopis* in the study area. This means that all the challenges faced in terms of the ecological damage resulting from the proliferation of *Prosopis* will persist. This is an undesirable option for the project proponent, as it will affect the long-term sustainability of the Orange-Fish River basin.

### **1.11 ALTERNATIVE SITES**

This option entails relocating the proposed project to a different site along the Fish River. This means that the project proponent has to look for a new site. It is worth noting that ORASECOM has already commissioned a Vegetation/Forest Management Plan for this specific site that will form the basis of this project and project funding has been secured accordingly. Since this project will be implemented on a pilot basis, the process of identifying and securing alternative sites has not been addressed. The identified project site has been selected for a number of reasons such as accessibility by the project beneficiaries. Therefore, relocating the project to a different site might lead to the failure of the initiative. Thus, no alternative site is required.

## **LEGAL REQUIREMENTS**

This section provides an analysis of the policies and legislations that are relevant to the proposed harvesting and management of *Prosopis* at the Mariental pilot site. This section aims to inform the proponent about the requirements to be fulfilled in undertaking the proposed project.

The table below lists the various environmental and developmental policies and legislations that have relevance to the project.

**Table 2:** Legal framework of the project.

<b>LEGISLATION</b>	<b>PROVISION</b>	<b>REGULATORY AUTHORITY</b>	<b>APPLICATION TO THE PROJECT</b>
<b>The Constitution of the Republic of Namibia</b>	Article 91 (c) and 95 (i) commit the state to actively promote and maintain the environmental welfare of all Namibians by promoting sustainable development	Government of the Republic of Namibia	The project should not pose a threat to the natural and human environment.
<b>Environmental Management Act No.7 of 2007 and EIA Regulations (2012)</b>	Provides a list of listed activities that may not be undertaken without environmental clearance	Ministry of Environment, Forestry and Tourism (Office of the Environmental Commissioner)	An Environmental Clearance will be required before the project Commences.
<b>Water Act 54 of 1956</b>	Control of disposal of sewage, the purification of effluent, the prevention of surface and groundwater pollution, and the sustainable use of water resources.	Ministry of Agriculture, Water and Land Reform (Department of Water Affairs)	Project activities should not pose a threat to water resources.
<b>The Water Resources Act 11 of 2013</b>	Control of disposal of sewage, the purification of effluent, the prevention of surface and groundwater pollution, and the sustainable use of water resources.	Ministry of Agriculture, Water and Land Reform	Project activities should not pose a threat to water resources.
<b>Forestry Act No 12 of 2001</b>	The Act affords protection to certain indigenous plant species.	Ministry of Environment, Forestry and Tourism	The provision of this Act must be observed during the harvesting of <i>Prosopis</i> spp.

		(Directorate of Forestry)	
<b>Nature Conservation Ordinance no. 4 of 1975</b>	Chapter 6 provides for legislation regarding the protection of indigenous plants	Ministry of Environment, Forestry and Tourism	Biodiversity at the project site must be protected as per the provisions of this ordinance.
<b>Soil Conservation Act No 76 of 1969</b>	Combating and preventing soil erosion, the conservation, improvement and manner of use of the soil and vegetation and the protection of the water sources	Ministry of Agriculture, Water and Land Reform	The proponent should ensure that soil erosion and soil pollution are avoided during the implementation of the project.
<b>Atmospheric Pollution Prevention Ordinance No 45 of 1965</b>	Part II - control of noxious or offensive gases, Part III - atmospheric pollution by smoke, Part IV - dust control, and Part V - air pollution by fumes emitted by vehicles.	Ministry of Health and Social Services	Atmospheric pollution should be minimised at all costs.
<b>Local Authorities Act No. 23 of 1992</b>	The Local Authorities Act prescribes the manner in which a town or municipality should be managed by the Town or Municipal Council.	Ministry of Urban and Rural Development	The harvesting of <i>Prosopis</i> within a municipal/local authority area must comply with provisions of the Local Authorities Act.
<b>The Labour Act of 1992</b>	Employees are subject to the terms of the Labour Act. The act also contains the Health and Safety Regulations.	Ministry of Labour, Industrial Relation and Employment Creation.	Given the employment opportunities presented by <i>Prosopis</i> harvesting compliance with the labour law is essential.

<b>Public and Environmental Health Act 1 of 2015</b>	This Act (GG 5740) provides a framework for a structured uniform public and environmental health system in Namibia. It covers notification, prevention and control of diseases and sexually transmitted infections; water and food	Ministry of Health and Social Services	Project activities should not pose a threat to public health.
	supplies; waste management; health nuisances; public and environmental health planning and reporting. It repeals the Public Health Act 36 of 1919 (SA GG 979)		
<b>National Heritage Act, 2004 (Act No. 27 of 2004)</b>	This Act calls for the protection, conservation and registration of places and objects of heritage significance.	National Heritage Council of Namibia	Should any objects of heritage significance be found on the project site, the provisions of this Act must apply.
<b>Atmospheric Pollution Prevention Ordinance (1976)</b>	This Ordinance generally provides for the prevention of the pollution of the atmosphere. Part IV of this ordinance deals with dust control.	Ministry of Environment, Forestry and Tourism.	Atmospheric pollution should be minimized at all costs.
<b>Plant Quarantine Act No. 7 of 2008 &amp; Plant Health Regulations</b>	This Act and its Regulations provide for the preventing, monitoring, controlling and eradication of plant pests; to facilitate the movement of plants, plant products and other regulated articles within and into or out of Namibia.	Ministry of Agriculture, Water and Land Reform	The project must comply with the provisions of this Act and Regulation

## **DESCRIPTION OF THE RECEIVING ENVIRONMENT**

### **1.12 CLIMATE**

The mean annual rainfall in this area ranges between 150 mm and 200 mm. The average maximum temperature is well above 36 °C in summer making the Hardap Region one of the hottest regions in the country. The average minimum temperature is below 2°C in winter. Evapotranspiration for this area ranges between 3,400 and 3,600 mm per annum (Mendelsohn, *et al.* 2002).

### **1.13 GEOLOGY AND SOILS**

The Fish River catchment falls within the Nama Group in southern Namibia. This geological group consists of fluvial red sandstone as well as limestone with beds of lime and shales. The soils of the project site consist of shallow leptosols with very limited water-holding capacity, and can therefore only support limited vegetative growth (Mendelsohn, *et al.* 2002).

### **1.14 HYDROLOGY**

The project sites are located in the flood plains of the ephemeral Fish River. The Fish River forms part of the Orange-Fish River Basin. The area also supports important underground water resources. Mariental depends on water from the Hardap Dam that is located within the confines of the town. The Hardap Dam replenishes the ground aquifers, which supports agricultural activities in the hinterland of the town.

### **1.15 BIODIVERSITY**

The Orange-Fish River Basin supports various wildlife species such as kudu, springbok, gemsbok, leopard, warthog and steenbok. Common fish species in the Fish River include Largemouth yellow fish, Small mouth yellow fish, African sharp tooth catfish, Mudfish, Tilapia and Common carp. Orange River mouth is one of the richest wetlands in southern Africa with respect to bird numbers. It is an important feeding area and stopover point for migrating birds.

In terms of flora, the Mariental site falls within the northern Nama-Karoo biome along the Fish River. Vegetation is dominated by *Parkinsonia africana*, *Rhigozum trichotomum* and a variety of



other dwarf shrub species, whilst *Stipagrostis* species dominates grasses (Mendelsohn, et al. 2002).

The Orange-Fish River Basin is home to a number of rare and threatened plant species. The biodiversity hotspots of plant endemism fall within the Succulent Karoo biome, a significant proportion of which falls within the /Ai-/Ais–Richtersveld and Sperrgebiet National Parks. The Orange River mouth falls within the Desert biome. It contains a number of endemic plant species. The environmental water demands at the mouth are met by water flowing from the Fish River and releases from the Vanderkloof Dam (in South Africa) (ORASECOM Report, 005/2014)

The table below shows the tree species that were recorded at the Mariental pilot site during the development of the Vegetation Management Plan.

**Table 3:** Vegetation species recorded at Gibeon

SCIENTIFIC NAME	COMMON NAME
<i>Vachellia karroo</i>	Sweet thorn
<i>Tamarix usneoides</i>	Wild tamarix
<i>Vachellia erioloba</i>	Camel thorn
<i>Ziziphus mucronata</i>	Buffalo thorn
<i>Euclea pseudebenus</i>	Ebony tree
<i>Lycium bosciifolium, Salsola</i> spp.	Limpopo honey-thorn
<i>Phoenix reclinata</i>	Wild Date palm
<i>Maerua schinzii</i>	Ringwood Bead-bean
<i>Rhygozum trichotomum</i>	Three thorn rigozum
<i>Parkinsonia africana</i>	Green hair tree
<i>Catophractes alexandri</i>	Trumpet thorn
<i>Pechuel loeschea</i>	Stink bush
<i>Phragmites Australia</i>	common reed
<i>Acacia mellifera</i>	Blackthorn
<i>Prosopis</i>	Not Indigenous and is targeted for removal

### **1.16 CURRENT STATUS OF *PROSOPIS* AT THE SITE**

The riparian ecosystem around the Mariental Pilot Site is heavily infested with *Prosopis* species where it has significantly replaced the natural vegetation in the area. *Prosopis* is mostly confined to the riparian habitat along the Fish River where the highest density of *Prosopis* was recorded. The site has multi-stemmed (mallees) *Prosopis* spp.



**Picture 1:** *Prosopis* along the Fish River at Mariental

### **1.17 SOCIO-ECONOMIC SETTING**

The Hardap Region covers an area of 109, 659 km<sup>2</sup> making it the third largest region in Namibia, with the low population density of 0.6 persons per square kilometer. The region has a population of about 84, 248 people (41,058 females and 43,190 males). The region is divided into six political constituencies, namely: Rehoboth Urban West; Rehoboth Urban East;

Rehoboth Rural; Mariental Urban; Mariental Rural and Gibeon (Hardap Regional Council, 2018).

Mariental is the capital of the Hardap Region and has an estimated population of about 14, 386 people. The town was founded in 1912 as a railway stop between Windhoek and Keetmanshoop

and was subsequently incorporated as a municipality in 1946 (First Capital, 2018).

The 2016 Labour Force Survey indicated that the Hardap Region had an unemployment rate of 46.2 percent. Mariental is located near the Hardap Dam, the biggest dam in the country. As a result, a number of successful commercial agricultural projects surrounds the town. The farms produce grapes, cotton, Lucerne, dairy products amongst many other products (First Capital, 2018).

Agriculture is one of the common economic activity in the region mostly crop and livestock farming. The Hardap Irrigation Scheme is one of the biggest agricultural projects in the area. It produces maize, wheat, Lucerne and beans. The Lucerne is supplied to the !Aimab Superfarm for dairy cattle feed. The dairy farm produces about 34,000 litres of milk per day that translate to about 14 million litres per annum. The Octant Date Farm also located near Mariental produces about 75 tons of Medjool dates per annum. The Mariental Piggery established in 2000 is currently the biggest pig farm in the country. The piggery has a mixed stock composition of 15,800 pigs and accounts for about 70% of the total domestic pork production. Furthermore, there are two abattoirs in Mariental with a combined monthly slaughter figures of about 12,600 sheep, 2500 pigs, 25 cattle. All these agricultural activities significantly contribute to the economy of the Hardap Region and Namibia as a whole and provides the much-needed jobs in the area (First Capital, 2018).

Water supplied to Mariental is sourced from the Hardap Dam by Namwater, treated and pumped to the town where the Mariental Municipality distributes it to the residents (First Capital, 2018).

Namibia College of Open Learning (NAMCOL) and Triumphant College are the only tertiary institutions in Mariental (First Capital, 2018).

Mariental has two health facilities comprising of a district hospital and a clinic. These facilities also serve people from nearby settlements and farms. The Hardap Region has the highest percentage of individuals suffering from chronic diseases (blood pressure, cancer, cardiac diseases, respiratory diseases and others) with a 17% prevalence (First Capital, 2018). HIV prevalence in the Hardap Region is about 5-6%. This one of the lowest prevalence rate in the country (PEPFAR, 2020).

Mariental is linked to other parts of the country through rail, a national highway and the Mariental Airport. There is also various tourism attraction in and around Mariental. These include amongst others the Hardap Dam Resort, Gross Nabas, Lapa Lange Lodge, and Battelle Kalahari Lodge (First Capital, 2018).

The poverty levels in the Hardap Region is between 2.3 to 11.4 percent of severe poor and 8.9 to 15.3 percent poor, which is both the second lowest categories of poverty incidence in the country (First Capital, 2018).

With regard to housing, 30.4 % of Mariental residents lives in impoverished (shacks) structures and 48.6 % in detached structures (stand-alone houses). Like many other towns in Namibia, Mariental is also experiencing an acute shortage of housing (First Capital, 2018).

### **1.18 ARCHAEOLOGY**

The scoping exercise did not discover any archaeological material along the site where the project will take place. Should there be any such discovery during the course of the project implementation, the National Heritage Council of Namibia should be informed immediately and all harvesting and revegetation activities must be halted. The National Heritage Council will assess the discovery and based on the findings of their assessment they will advise on the way forward.

## **PUBLIC PARTICIPATION PROCESS**

### **1.19 OBJECTIVES OF PUBLIC CONSULTATION**

The Public Participation Process is undertaken in response to the requirements of Regulation/Part 21 of the Environmental Management Act. Regulation 21 requires that a person who undertakes public participation as part of an environmental impact assessment process to obtain an ECC must do the public participation process.

Public participation is the cornerstone of the EIA process as this is the stage where Interested and Affected Parties are considered and involved in the decision-making process. Its key objective is to assist stakeholders to raise issues of concern and suggestions for enhanced benefits and to comment on the findings of the EIA.

### **1.20 PUBLIC PARTICIPATION DURING THE SCOPING PHASE**

Nevunduko Consulting Services identified specific Interested and Affected Parties (I&APs, who were considered, interested in and/or affected by the proposed harvesting of *Prosopis* in the study area. The I&APs identified include applicable organs of the state and other interested members of the public. The other I&APs were also invited to register as such through the public notices discussed below.

Information to I&APs regarding the proposed project was disseminated through the following ~~means~~

#### **1.20.1 Newspaper Notices**

Newspaper notices were placed in the Namibian Sun, Republikein and Allgemeine Zeitung dated 19th and 27th of January 2023. The notices were placed once a week for two consecutive weeks as required by the EIA Regulations. The newspaper notices are attached as Appendix E. The newspaper notices stated that an application for an Environmental

Clearance is to be submitted to the Environmental Commissioner, provided information on the nature of the activity and location, invited I&AP to register as such and provided contact details,

details about the meeting and where further information on the application or activity can be obtained

### **1.20.2 Background Information Document (BID)**

A BID was prepared for the proposed project (**Appendix D**). The BID was intended to provide information about the EIA being undertaken for the proposed project and provided: an overview of the project; a description of how the EIA was undertaken, an indication of how Interested and Affected Parties (I&AP) may become involved in the EIA process; and provided contact details of the person to whom I&APs may submit their comments.

The BID was circulated to all registered and identified I&AP. Proof of communication to stakeholders is attached as **Appendix F**.

### **1.20.3 Public Meeting**

A public meeting was organized at Tahiti Guesthouse on Saturday, **28 January 2023**. No stakeholder turned up at the meeting. The consultants were available at the venue from 14h00 to 15h00. As such, the identified stakeholders mainly from the list used during the development of the Vegetation Management Plan for the area were directly contacted and provided with information about the proposed project and were requested to provide any input.

Due to non-attendance of stakeholders during the first meeting, a second public meeting was organized at Tahiti Guesthouse on Thursday, **2 March 2023**. Eleven participants, 5 females and 6 males, attended the meeting. The participants were farmers from the Hardap Irrigation Scheme and heads of public institutions representing, the Hardap Regional Council, the Ministry of Agriculture, Water and Land reform (DAPEES) and the Ministry of Environment, Forestry and Tourism (Directorate of Forestry). The Mariental Urban Constituency Development Committee also attended. Minutes of the public meeting are attached as **Appendix G**.

**The main issues raised by the stakeholders during the public meeting are summarized below:**

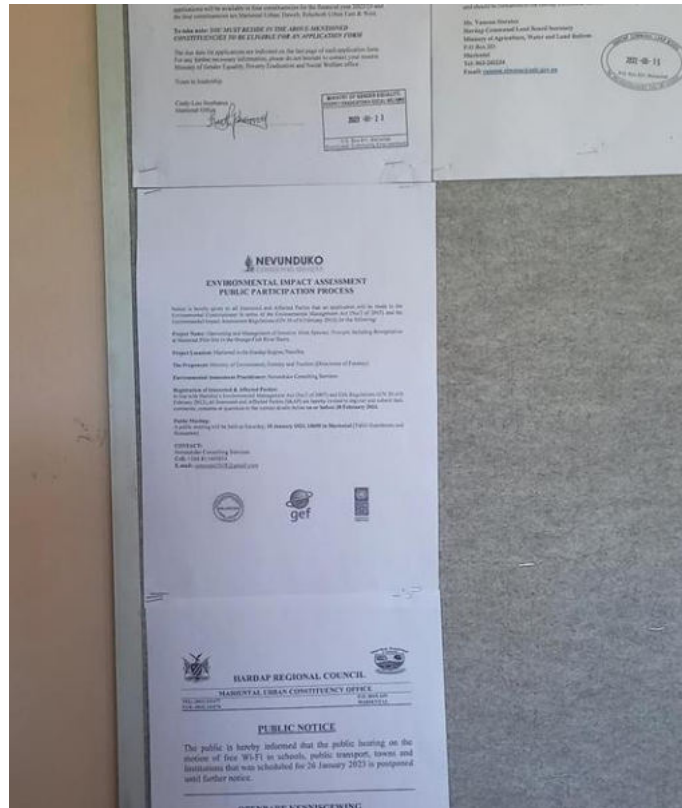
- The farming community indicated that future communication regarding this project should be directed to their WhatsApp Group.
- *Prosopis* harvesting is a costly exercise, and, in most cases, you do not recover the money invested into the harvesting process.
- The farmers felt that it was better if the reeds were removed first and then followed by *Prosopis* in order to avoid flooding and soil degradation.
- The irrigation water from the scheme contains fertilizers and this water is drained into the river boosting the growth of *Prosopis*.



**Picture 2:** Stakeholders attending public meeting at Mariental

#### **1.20.4 Fixed Notices**

Notices were fixed at various public buildings at Mariental including the Hardap Regional Council public notice boards



**Picture 3:** Project Notice at the Hardap Council Office Noticeboard



# ENVIRONMENTAL IMPACT ASSESSMENT

## 1.21 METHOD OF ASSESSMENT

The significance of the identified impacts of the proposed harvesting and management of *Prosopis* at the Mariental pilot site was assessed using the criteria discussed in table 4 below.

**Table 4:** Criteria used to determine the significance of impacts and their definitions.

CRITERIA	DESCRIPTION
<b>NATURE</b>	This criterion indicates whether the proposed activity has a <b>positive or negative</b> impact on the environment (environment comprises both socio-economic and biophysical aspects).
<b>EXTENT</b>	This criterion measures whether the impact will be site-specific; local (limited to within 15 km of the area); regional (limited to about 100 km radius); national (limited to within the borders of Namibia) or international (beyond Namibia's borders).
<b>DURATION</b>	This criterion looks at the lifetime of the impact, as being short (days, less than a month), medium (months, less than a year), long (years, less than 10 years), or permanent (more than 10 years).
<b>INTENSITY</b>	This criterion is used to determine whether the magnitude of the impact is destructive and whether it exceeds set standards, and is described as none (no impact); low (where the environmental functions are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease).
<b>PROBABILITY</b>	Considers the likelihood of the impact occurring and is described as improbable (low likelihood), probable (a distinct possibility), highly probable (most likely) or definite (impact will happen regardless of prevention measures).
<b>DEGREE OF CONFIDENCE IN PREDICTION</b>	This is based on the availability of information and knowledge used to assess the impacts.

The significance of the potential impacts identified for this project is determined using a combination of the criteria discussed in the above table. The significance rating of impacts is described in the table below.

**Table 5:** Definition of the various significance ratings

SIGNIFICANCE RATING	CRITERIA
<b>Low</b>	Where the impact will have a negligible influence on the environment and no mitigations are required.
<b>Medium</b>	Where the impact could have an influence on the environment, which require some modifications on the proposed project design and/or alternative mitigation.
<b>High</b>	Where the impact could have a significant influence on the environment and, in the case of a negative impact, the activity causing it, should not be permitted.

## 1.22 POTENTIAL IMPACTS IDENTIFIED AND ASSESSED

### 1.22.1 NEGATIVE IMPACTS

#### 1.22.1.1 Increased erosion

The complete eradication of *Prosopis* in areas where it is the dominant species might facilitate water and wind erosion as the indigenous vegetation will take some years to regenerate before it can play the role of stabilizing the riverbanks. This will result in unstable riverbanks and subsequent flooding. Even if *Prosopis* is not removed, it will still cause flooding as it blocks the river course and water spills from the riverbanks.

**Table 6:** Assessment of impacts associated with erosion.

IMPACT TYPE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE	
						PRE MITIGATION	POST MITIGATION
Negative	Local	Medium	Low	Probable	Medium	Medium	Low

**Mitigation:**

Any indigenous vegetation found under the canopy of *Prosopis* should not be disturbed to promote natural regeneration and in turn, promote soil conservation.

**1.22.1.2 Traffic disturbance**

The movement of vehicles to take harvesters to the site and collect the harvested biomass might cause disturbance to the environment.

**Table 7:** Assessment of impacts associated with traffic.

IMPACT TYPE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE	
						PRE MITIGATION	POST MITIGATION
Negative	Local	Medium	Low	Probable	Medium	Medium	Low

**Mitigation:**

Traffic must be confined to designated two-track roads. All the drivers observe a speed limit of not more than 40 km/h to avoid the generation of dust and disturbance of the substrate.

**1.22.1.3 Disruption of ecosystem services**

Natural regeneration may not provide the necessary ecosystem functions in the short term that *Prosopis* was providing. Ecosystem services offered by *Prosopis* includes:

- microclimate regulation
- improvement of soil fertility
- Habitat and food to various species
- income and livelihood diversification
- less costly feed ingredient for livestock

**Table 8:** Assessment of impacts associated with ecosystem services.

IMPACT TYPE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE	
						PRE MITIGATION	POST MITIGATION
Negative	Local	Medium	Low	Probable	Medium	Medium	Low

**Mitigation:**

Develop a program of *Prosopis* removal that ensures that the ecological services provided by *Prosopis* now are not completely disrupted. This pilot project will provide an opportunity to test whether it is feasible to partially eradicate *Prosopis* followed by aggressive revegetation with indigenous vegetation.

**1.22.1.4 Loss of livelihood opportunities**

Livelihood opportunities such as the collection of *Prosopis* pods for animal fodder and sale might be lost if *Prosopis* is completely eradicated. Therefore, strategies should be devised to diversify livelihoods and reduce dependency on *Prosopis*.

**Table 9:** Assessment of impacts associated with livelihood opportunities.

IMPACT TYPE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE	
						PRE MITIGATION	POST MITIGATION
Negative	Local	Medium	Low	Probable	Medium	Medium	Low

**Mitigation:**

Ensure that the residents of the project area that are dependent on *Prosopis* for their livelihoods are assisted to adopt alternative sources. The alternatives will include the harvesting of *Prosopis* to create new income sources by marketing and selling the plant as firewood and for other uses.

### 1.22.1.5 Reduced carbon sequestration capacity

*Prosopis* invasion can contribute to the capturing of CO<sub>2</sub> from the atmosphere, which is important for climate change mitigation and will assist Namibia to meet its climate change targets. It further can promote future alternative income generation through carbon trading schemes. Although it might take some time, indigenous vegetation can provide similar benefits on a sustainable basis if it is allowed to reclaim the areas currently invested by *Prosopis*.

**Table 10:** Assessment of impacts associated with carbon sequestration capacity.

IMPACT TYPE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE	
						PRE MITIGATION	POST MITIGATION
Negative	Regional	Medium	Low	Probable	Medium	Low	Low

#### ***Mitigation:***

The impact assessment process concluded that the sustainable harvesting of *Prosopis* would not negatively affect Namibia's efforts to combat climate change. The sustainable management of *Prosopis* and other alien invasive species will help to improve Namibia's adaptive capacity to climate change.

### 1.22.1.6 Safety and health hazards

Occupational health hazards are expected particularly in relation to the workers who will be harvesting the *Prosopis*. Workers will be exposed to dust, sun exposure, injuries from handling thorny *Prosopis* branches, attack by wild animals (e.g. snakebites) and dehydration during summer months.

**Table 11:** Assessment of impacts associated with health and safety.

IMPACT TYPE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE	
						PRE MITIGATION	POST MITIGATION
Negative	Local	Medium	Low	Probable	Medium	Medium	Low

*Mitigation:*

The workers that will be involved in the harvesting of *Prosopis* must be equipped with appropriate Personal Protective Equipment and they must be trained on potential occupational health and safety risks and how to mitigate them. Ensure that there is a safety representative who is equipped with a first aid kit at the harvesting site.

**1.22.1.7 HIV/AIDS**

Projects that bring many people together such as the proposed harvesting of *Prosopis*, create an environment where workers have the opportunity to interact with the local community, a significant risk is created for the development of social conditions and behaviours that contribute to the spread of HIV/AIDS.

Since HIV/AIDS is an issue of public health concern in Namibia, this project needs to raise awareness and educate workers that will be involved in the harvesting of *Prosopis* about HIV/AIDS to minimize the risk of exposure to or transmission of HIV/AIDS and to provide support in the workplace to those who are already infected or affected by this disease.

*Mitigation:*

- Hold HIV/AIDS Awareness sessions as part of the scheduled site meetings.
- Ensure that the workers have access to condoms and other forms of protection.
- Promote correct and persistent use of male and female condoms.
- Provide care and support for the infected and affected.

### 1.22.1.8 Waste generation

Various waste will be generated during the harvesting of *Prosopis*. This will include litter from the harvesters (mainly paper and plastics) and biomass that cannot be utilized for economic purposes (branches pruned from harvested stems). All these types of waste will have a negative impact on surrounding areas if not disposed of properly and regularly.

**Table 12:** Assessment of impacts associated with waste generation.

IMPACT TYPE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE	
						PRE MITIGATION	POST MITIGATION
Negative	Local	Medium	Low	Probable	Medium	Medium	Low

#### *Mitigation:*

The harvesters must be equipped with refuse bags where they will put all their litter.

The litterbags must be removed from the site and disposed of at an appropriate disposal site at the end of each working day.

Biomass waste must be gathered and shredded as animal fodder or allowed to dry away from the river course.

### 1.22.1.9 Pollution from herbicides

The use of unapproved herbicides can cause harm to the ecosystem and might pollute the valuable water resources of the Fish River. The project should therefore ensure that only approved herbicides are used in the eradication of *Prosopis*.

**Table 13:** Assessment of impacts associated with pollution from herbicides.

IMPACT TYPE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE	
						PRE MITIGATION	POST MITIGATION
Negative	Local	Medium	Low	Probable	Medium	Medium	Low

### *Mitigation:*

Only registered herbicides should be applied to the stumps immediately after harvesting, to prevent further regeneration of the vegetation. The PSC must ensure that all the herbicides procured for this project are approved for use in Namibia.

The following herbicides are recommended by the working for Water Programme for clearing the *Prosopis*

- Turbodor 29 mpa
- Astra 360 SL
- Confront \*360 SL
- Gallon 480 EC

## **1.23 POSITIVE IMPACTS**

### **1.23.1 Improved aquifer recharge**

*Prosopis* has highly adaptable roots that can utilize both surface and groundwater. According to Beisswanger *et al*, 2015, a mature *Prosopis* tree can consume up to fifty litres of water per day. This can significantly affect the underground water resources and downstream flow. If it is not managed properly, *Prosopis* will contribute to the depletion of the aquifer in the areas because *Prosopis* can double every five years as the population expands at a rate of 18% per annum (Strohbach, *et al*, 2015). The removal of *Prosopis* is therefore critical for the long-term sustainability of the underground water resources in the area.

### **1.23.2 Economic benefits**

The removal of *Prosopis* does not only help to restore local ecosystems it can also help the local communities achieve sustainable livelihoods by using the harvested biomass for economic gain. The economic potential of *Prosopis* biomass is good as it can be utilized commercially as biofuel, firewood, charcoal, timber, and fodder.

### **1.23.3 Restoration of indigenous biodiversity**

The proliferation of *Prosopis* along the Fish River for many years has resulted in the displacement of species-rich indigenous plant communities by a single species and the disruption of important



ecosystem processes. This initiative will therefore help with the reduction of the *Prosopis* infestation and help to restore indigenous plant communities and associated fauna.

#### **1.23.4 Improve aesthetic value**

Invasive plant such as *Prosopis* affects the aesthetic quality of an area. Therefore, the removal of *Prosopis* and regeneration of indigenous vegetation will gradually improve the aesthetic value of the area over time.

#### **1.23.5 Facilitation of water flow**

*Prosopis* is known to block water flow in the Fish River. The removal of *Prosopis* will facilitate water flow in the river. Because of blockages by *Prosopis*, about 18% of the water is prevented from reaching the lower parts of the Fish River, (Strohbach, *et al.*, 2015). The removal of *Prosopis* through this initiative will therefore provide basin-wide benefits and will contribute to the well-being of the whole system.

#### **1.23.6 Job opportunities for locals**

This project will provide some job opportunities to the locals who will be recruited to harvest the *Prosopis*. The opportunities will be available to everyone, as no skills are required to undertake this task. The recruitment of local people for temporary job opportunities should be prioritized to further enhance the positive impact of the project.

## CONCLUSIONS AND RECOMMENDATIONS

It can be confidently concluded from this study that when it comes to the sustainable management of *Prosopis* there is no one-fit-all solution. A concerted effort from various stakeholders will be required to address this mammoth challenge. Furthermore, it is also worth noting that large-scale success will only be achieved if programs to sustainably manage *Prosopis* cover the whole basin.

This pilot project offers a great opportunity to perfect the approaches to tackling *Prosopis* along Fish-Orange River Basin. Sustainable management of *Prosopis* needs to be a long-term endeavour at a basin level and it must be monitored permanently. A national program to eradicate *Prosopis* based on the various water basins should be initiated. This program should adopt some of the lessons learned from this pilot project.

The lack of follow-up programs is one of the major challenges faced by the various efforts to eradicate *Prosopis* in Namibia. Many studies reviewed during the scoping process indicated that once the initial removal of *Prosopis* is not followed up in the next season, the re-infestation is almost guaranteed. This is largely because *Prosopis* re-grow from stumps and massive numbers of seeds stored in the ground.

Most of the environmental impacts identified for this project have the potential to occur during the project implementation phase.

Given the relatively limited scale of the project (only covers a small part of the Fish River); the impacts are unlikely to be of significance. The key will be limiting the potential effects of completely removing *Prosopis* in areas where it is the dominant vegetation species that provides all the ecological services.

Nevunduko Consulting Services believes that a comprehensive assessment of the proposed project has been achieved and that the Environmental Clearance Certificate can be awarded.

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## **APPENDICES**

### **1.24 APPENDIX A: CVs OF ENVIRONMENTAL ASSESSMENT PRACTITIONERS**

## 1.25 APPENDIX B: INTERESTED AND AFFECTED PARTIES REGISTER

### Register of Interested and Affected Parties

Environmental Impact Assessment for the Harvesting and Management of *Prosopis* Species at the Mariental Pilot Site in Hardap Region, Namibia

Name & Surname	Organization	Position	Telephone	E-mail
Ms. S. LuiPERT	Hardap Regional Council	Regional Director of Planning	08172304454	<a href="mailto:simagoeieman@gmail.com">simagoeieman@gmail.com</a>
Mr. Dawie De Klerk	Hardap Farmers Association	Interested and Affected Party	0811279027	<a href="mailto:dawie@africaonline.com.na">dawie@africaonline.com.na</a>
Ms. SN Sinvula	Directorate of Forestry	Directorate of Forestry	0812112111	<a href="mailto:sitwalanawa@yahoo.com">sitwalanawa@yahoo.com</a>
Mr. LM Sinvula	Mariental Municipality	Mariental Municipality	0814277001	<a href="mailto:lsinvula@marmun.org.na">lsinvula@marmun.org.na</a>
Mr R. Ngozu	DAPEES	DAPEES	0811477757	<a href="mailto:rngozu@yahoo.co.uk">rngozu@yahoo.co.uk</a>
Ms. Cherien Kock	Mariental Municipality	Mariental Municipality	063245600	<a href="mailto:cherioncock@gmail.com">cherioncock@gmail.com</a>
PJ Esterhuizen	Hardap Regional Council	Hardap Regional Council	0813322631	<a href="mailto:theresiaessie@gmail.com">theresiaessie@gmail.com</a>
GDF Dauseib	Hardap Regional Council	Hardap Regional Council	0814499869	<a href="mailto:francoirdausab@gmail.com">francoirdausab@gmail.com</a>
Sagaria Muheua	Directorate of Land Reform	Directorate of Land Reform	0812871775	<a href="mailto:sagaria.muheua@mlr.gov.na">sagaria.muheua@mlr.gov.na</a>
Willem Afrikaner	Interested and Affected Party	Interested and Affected Party	081 340 8863	<a href="mailto:johnnywja@gmail.com">johnnywja@gmail.com</a>

## **1.26 APPENDIX C: BACKGROUND INFORMATION DOCUMENT**

## **EIA PROCESS**

The harvesting of forestry products such as the proposed harvesting of *Prosopis* species is a listed activity as stated in Government Notice No.29, List of activities that may not be undertaken without Environmental Clearance Certificate: Environmental Management Act, 2007; Government Gazette No. 4878. The proposed project must therefore be subjected to an Environmental Impact Assessment to obtain an Environmental Clearance before the development commences.

The EIA will be carried out in the following phases as provided for in Namibia's Environmental Management Act No.7 of 2007 and its Regulations.

### **PHASE I: PROJECT INITIATION & INTERNAL SCREENING**

- Formulation of background information note
- Notification to the Ministry of Environment, Forestry and Tourism (MEFT) of the proposed project through submission of EIA application form and online registration
- Undertake site visits to identify environmental issues
- Identify key stakeholders, regulatory authorities and Interested and Affected Parties (IAP)

### **PHASE II – EIA AND ENVIRONMENTAL MANAGEMENT PLAN**

- Notify other regulatory authorities as relevant as well as IAP (advertisement through newspaper, site notices, email etc)
- Conduct stakeholder consultation meetings with other regulatory authorities and Interest and Affected Parties (IAP)
- Review technical reports produced for the *Prosopis* project
- Assess the potential environmental impacts of the project activities
- Compile the EIA report and EMP
- Circulate the EIA report and EMP to regulatory authorities and IAP for reviewing and comments
- Incorporate input and comments from the regulatory authorities and IAP
- Submit the final report to MEFT for their review and decision making

## **PUBLIC PARTICIPATION PROCESS**

### **Your role as a stakeholder**

*The EIA process gives you an opportunity to:*

- Review background information on the proposed project and provide comments;
- Find out more about the proposed project and the EIA process;
- Raise your issues and comments regarding the proposed project;
- Provide the Environmental Assessment Practitioner with additional information to be considered in the decision-making process;
- Review and comment on the reports to be produced during the EIA process; and
- Appeal the Environmental Clearance that may be issued if you have serious objections.

### **How can you be involved?**

- By responding to the invitation for you to register as an Interested and Affected Party(I&AP);
- By mailing your comments to the EIA contact person (Contact details provided below);
- By contacting the EIA contact person telephonically; and
- By reviewing the draft reports and providing comments.

### **Whom should you contact to register as an Interested &Affected Party?**

Please complete the attached registration and comments form and send it to EIA consultants.



## ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE HARVESTING AND MANAGEMENT OF *PROSOPIS* SPECIES AT  
MARIENTAL PILOT SITE IN HARDAP REGION

### REGISTRATION AND COMMENTS FORM

I request to be registered as an Interested and Affected Party for the proposed project. Please provide me with all relevant information regarding the project throughout the EIA process and invite me to all meetings. My particulars are as follows:

**Name:**

**Telephone:**

**Organization:**

**Designation:**

**E-mail:**

**My interest in this project:**

**Comments and matters of concern:**

**Signature:**

**Date:**

Please return this completed form to:

Nevunduko Consulting Services

Cell: +264 81 762 1688

E-mail: [samasore2018@gmail.com](mailto:samasore2018@gmail.com)

**The form should reach the consultants on or before 30 March 2023.**

# 1.27 APPENDIX D: PRESS NOTICES

THURSDAY 26 JANUARY 2023
Market Watch
Republiek Sun Allgemeine Zeitung

**035** Regskennigings Legal Notices



**PUBLIC NOTICE FOR APPLICATION OF NEW ENVIRONMENTAL CLEARANCE CERTIFICATE – Exploration activities for Base & Rare metals, Industrial Minerals, Dimensions stones and Precious Metals on Exclusive Prospecting License (EPL) EPL 8786, Gobabis**

District, Omaheke Region – Namibia

In accordance with the Environmental Management Act, 2007, (Act No. 7 of 2007) & the EIA Regulations 30 of 2012, mineral prospecting activities are a listed activity which may not be undertaken without a valid Environmental Clearance Certificate (ECC) issued by the Department of Environmental Affairs & Forestry (DEAF).

**OMAVI Geotechnical & Environmental Services** has been appointed to undertake an Environmental & Social Impact Assessment (ESIA) and prepare an Environmental Management Plan (EMP) to support the application for ECC.

**Proponent:** Olivia Iiveleni Shuuluka

**Site Locality:** EPL 8786 is located approx. 42km NW of Gobabis and about 18km N of Witvlei. A locality map is available on request from OMAVI.

Farms covered by the EPL include Paack Orunental 1031, Spanndau 149, Herzwökle 148, Max 145, Deville 146, Ongava Onusa 147, Okasandru 158, Gottesgabe 159, Sudan 69, Nudom 161, Wonderboom 301, Lee Enfield 303, Daheim 1032

In terms of the requirements of the EIA Regulations, all Interested & affected Parties (I&APs) must be provided with opportunities to participate in the ESIA process. I&APs are therefore, hereby invited to register & submit written comments/ concerns/ suggestions by close of business on **20 February 2023**. A Background Information Document is available to I&APs upon registration. Further communications regarding the ESIA process for this project will only be made with registered I&APs.

Tel: +264 81 478 6303 (SMSes or WhatsApp Texts preferred for record keeping purpose)

Email: info@omavi.com.na

**LOSING CONTROL?**



**ENVIRONMENTAL IMPACT ASSESSMENT PUBLIC PARTICIPATION PROCESS**

Notice is hereby given to all Interested and Affected Parties that an application will be made to the Environmental Commissioner in terms of the Environmental Management Act (No.7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 of 6 February 2012) for the following:

**Project Name:** Harvesting and Management of the Invasive Alien Species; Prosopis including Revegetation at Gibeon Pilot Site in the Orange-Fish River Basin.

**Project Location:** Gibeon in the Hardap Region, Namibia

**The Proponent:** Ministry of Environment, Forestry and Tourism (Directorate of Forestry)

**Environmental Assessment Practitioner:** Nevunduko Consulting Services

**Registration of Interested & Affected Parties:** In line with Namibia's Environmental Management Act (No.7 of 2007) and EIA Regulations (GN 30 of 6 February 2012), all Interested and Affected Parties (I&AP) are hereby invited to register and submit their comments, concerns or questions to the contact details below on or before 28 February 2023.

**Public Meeting:** A public meeting will be held on Friday, 27 January 2023 at 14h00 in Gibeon (Gibeon Village Council Hall).

**CONTACT:**  
Nevunduko Consulting Services  
Cell: +264 811405033  
E-mail: samasore2018@gmail.com





**ENVIRONMENTAL IMPACT ASSESSMENT PUBLIC PARTICIPATION PROCESS**

Notice is hereby given to all Interested and Affected Parties that an application will be made to the Environmental Commissioner in terms of the Environmental Management Act (No.7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 of 6 February 2012) for the following:

**Project Name:** Harvesting and Management of Invasive Alien Species; Prosopis including Revegetation at Mariental Pilot Site in the Orange-Fish River Basin.

**Project Location:** Mariental in the Hardap Region, Namibia

**The Proponent:** Ministry of Environment, Forestry and Tourism (Directorate of Forestry)

**Environmental Assessment Practitioner:** Nevunduko Consulting Services

**Registration of Interested & Affected Parties:** In line with Namibia's Environmental Management Act (No.7 of 2007) and EIA Regulations (GN 30 of 6 February 2012), all Interested and Affected Parties (I&AP) are hereby invited to register and submit their comments, concerns or questions to the contact details below on or before 28 February 2023.

**Public Meeting:** A public meeting will be held on Saturday, 28 January 2023, 14h00 in Mariental (Tahli Guesthouse and Restaurant).

**CONTACT:**  
Nevunduko Consulting Services  
Cell: +264 811405033  
E-mail: samasore2018@gmail.com



A BRIGHTER  
OPPORTUNITY  
FOR YOUR  
TOMORROW

**TENDERS**



**TENDER ENQUIRY NO. E008-ND-2023  
INVITATION TO TENDER FOR THE PROVISION OF TRAINING SERVICES**

- 1. OVERVIEW**  
Namdeb Diamond Corporation (Pty) Ltd (Namdeb) is a wholly owned subsidiary of Namdeb Holdings (Pty) Ltd, and performs land-based prospecting (exploration), mining and rehabilitation operations.
- 2. SPECIFICATION OF THE SERVICES**  
Namdeb hereby invites reputable and qualified service providers to submit tenders for the **Provision of Compliance Training Services** to Namdeb employees.  
  
The Scope of the Services shall without limitation include the **Provision of Compliance Training** in the following categories:  
- **Safe Practices**  
- **Lifting Machines**  
- **Surface Mobile Equipment**
- 3. TENDER ENQUIRY DOCUMENT**  
Interested parties may contact the following person to obtain a copy of the tender enquiry document:  
Contact: Ms Renee Strauss  
Email: renee.strauss@namdeb.com  
Tel: +264 (63) 238502
- 4. COMPULSORY SITE INSPECTION**  
A compulsory virtual clarification meeting (as further detailed in the tender enquiry) shall be conducted on **Friday, 10<sup>th</sup> February 2023**.  
  
**Only Tenderers that attended the compulsory virtual clarification meeting shall be eligible to participate in the tender process.**
- 5. CLOSING DATE**  
The closing date for the tender is **16h00 on Friday, 17<sup>th</sup> February 2023**, and tender submissions must only be delivered to the address as specified in the tender enquiry document.

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• Nywerhede  
• Restaurante  
•Skole  
•Verpakkings-  
materiaal  
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**ENVIRONMENTAL IMPACT ASSESSMENT  
PUBLIC PARTICIPATION PROCESS**

Notice is hereby given to all Interested and Affected Parties that an application will be made to the Environmental Commissioner in terms of the Environmental Management Act (No.7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 of 6 February 2012) for the following:

**Project Name:** Harvesting and Management of Invasive Alien Species; Prosopis including Revegetation at Mariental Pilot Site in the Orange-Fish River Basin.

**Project Location:** Mariental in the Hardap Region, Namibia

**The Proponent:** Ministry of Environment, Forestry and Tourism (Directorate of Forestry)

**Environmental Assessment Practitioner:** Nevunduko Consulting Services

**Registration of Interested & Affected Parties:**

In line with Namibia's Environmental Management Act (No.7 of 2007) and EIA Regulations (GN 30 of 6 February 2012), all Interested and Affected Parties (I&AP) are hereby invited to register and submit their comments, concerns or questions to the contact details below on or before 28 February 2023.

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A public meeting will be held on Saturday, 28 January 2023, 14h00 in Mariental (Persianer Hall).

**CONTACT:**

Nevunduko Consulting Services  
Cell: +264 811405033  
E-mail: samasore2018@gmail.com



**ENVIRONMENTAL IMPACT ASSESSMENT  
PUBLIC PARTICIPATION PROCESS**

Notice is hereby given to all Interested and Affected Parties that an application will be made to the Environmental Commissioner in terms of the Environmental Management Act (No.7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 of 6 February 2012) for the following:

**Project Name:** Harvesting and Management of the Invasive Alien Species, Prosopis including Revegetation at Gibeon Pilot Site in the Orange-Fish River Basin.

**Project Location:** Gibeon in the Hardap Region, Namibia

**The Proponent:** Ministry of Environment, Forestry and Tourism (Directorate of Forestry)

**Environmental Assessment Practitioner:** Nevunduko Consulting Services

**Registration of Interested & Affected Parties:**

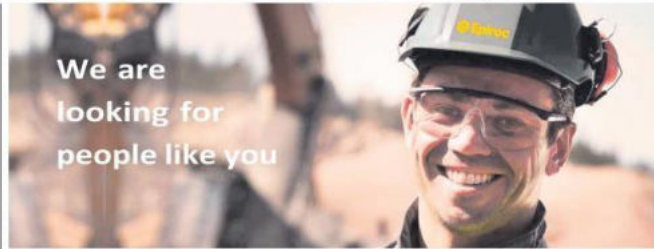
In line with Namibia's Environmental Management Act (No.7 of 2007) and EIA Regulations (GN 30 of 6 February 2012), all Interested and Affected Parties (I&AP) are hereby invited to register and submit their comments, concerns or questions to the contact details below on or before 28 February 2023.

**Public Meeting:**

A public meeting will be held on Friday, 27 January 2023 at 14h00 in Gibeon (Gibeon Village Council Hall).

**CONTACT:**

Nevunduko Consulting Services  
Cell: +264 811405033  
E-mail: samasore2018@gmail.com



We are  
looking for  
people like you

Are you in for a big challenge, like contributing to the success of a global company? If you are in for the challenge, we are looking for suitable candidates for the following positions that have arisen in our company.

**Product Support Technicians X 2**

**Location:** One Technician will be based in Windhoek and the other one in Rosh Pinah.

**Main responsibilities**

- Scheduled services to be performed on units in the market. Unplanned services to be performed on units in the market.
- Commissioning of new Capital Equipment in the market. Equipment audits.
- Rockdrill repairs in the workshop.

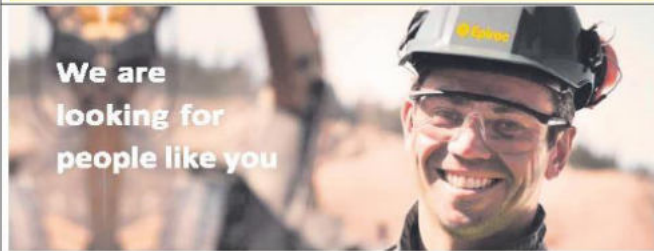
**Skills and Experience required**

- Technical qualification -Electrical and Mechanical. RCS experience
- Underground Rock Excavation experience will be an added advantage
- Problem solving and trouble shooting skills. Providing quality and professional customer service. Ability to work under pressure. Professional service reports.
- Valid driver license.

Applications should be sent to [recruitment.namibia@epiroc.com](mailto:recruitment.namibia@epiroc.com) and closing date is 25<sup>th</sup> January 2023.

United. Inspired.

[epiroc.com](http://epiroc.com)



We are  
looking for  
people like you

Are you in for a big challenge, like contributing to the success of a global company? If you are in for the challenge, we are looking for suitable candidates for the following positions that have arisen in our company.

**Product Support Technicians X 2**

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- Scheduled services to be performed on units in the market. Unplanned services to be performed on units in the market. Commissioning of new Capital Equipment in the market. Equipment audits.
- Rockdrill repairs in the workshop.

**Skills and Experience required**

- Technical qualification -Electrical and Mechanical. RCS experience
- Underground Rock Excavation experience will be an added advantage
- Problem solving and trouble shooting skills. Providing quality and professional customer service. Ability to work under pressure. Professional service reports. Valid driver license.

**Customer Care Representative**


**Location:** Windhoek

**Main tasks**

- Assist as and when required with all aspects of General Customer Care and Consignment Warehouse Customer duties such as:
- Work closely with Warehouse / Customer Care Manager to Achieve and Align with regional KPI's and process regarding Consignment Warehouses
- Work closely / assist Warehouse / Customer Care Manager with managing consignment stock centrally and at Consignment Warehouse Customer sites, this includes replenishment of stock and working with the sales team with forecasting
- Carry out continuous stock-taking (Monthly & Yearly) and report any variance to management at Consignment Warehouses
- Work closely with Customers / Consignment Warehouse Customer and Sales team to ensure service deliveries and customer

## 1.28 APPENDIX E: PROOF OF STAKEHOLDER CONSULTATION

EIA for Harvesting and Management of Prosopis at Mariental Pilot Site Inbox X

 **Olavi Makuti** <olavi.makuti@gmail.com> Tue, Feb 7, 11:40 AM (3 days ago) ☆ ↶ ⋮

to simagoiemana, dawie, sitwalanawa, Isinvula, mgozu, cherioncock, theresiaessie, francoirdausab, muheua, Nevunduko, wycliffe, Jericho

Dear Interested and Affected Party,

The Ministry of Environment, Forestry and Tourism (Directorate of Forestry) with financial support from the Orange- Senqu River Commission (ORASECOM) intends to support a five-year project at the Mariental Pilot Site that will include the sustainable harvesting of Prosopis species, together with revegetation of the sites with preferred indigenous plants.

The project will take place along the Fish River from the Hardap Dam to Mariental Town and will cover an area of about 950 ha in extent.

The Proponent appointed Nevunduko Consulting Services (as the Environmental Assessment Practitioner) to conduct the Environmental Impact Assessment (EIA) for the project and apply for Environmental Clearance Certificate in accordance with the Environmental Management Act No.7 of 2007 and its 2012 Regulations.

As part of the public participation process, you have been identified as a potential interested and affected party concerning the proposed project. Attached is the Background Information Document (BID) to provide you with more information about the project and how you can provide any comments.

Please note that the BID is not an EIA report but a summary of the proposed activities. Upon the completion of the EIA process, a draft Environmental Scoping Report and Environmental Management Plan will be shared with you for review and further comments.

Should you have any comments, questions or concerns on the EIA process, please submit them in writing to the contact details provided in the BID document by **28 February 2023**.

**Yours faithfully,**

For Nevunduko Consulting Services  
**Cell: +264 81 1405033**



## APPENDIX F: MINUTES OF PUBLIC MEETING



### PUBLIC PARTICIPATION PROCESS FOR THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR HARVESTING AND MANAGEMENT OF *PROSOPIS* SPECIES AT THE MARIENTAL PILOT SITE IN HARDAP REGION

**Report on the public participation meeting held at Tahiti Guest House and Restaurant,  
Mariental  
2nd March 2023**



Participants from the Public Institutions in Mariental



Participants from the farming community in Mariental

#### **Introduction**

The report outlines the proceedings and outcomes of the public participation meeting held at Tahiti Guesthouse and restaurant in Mariental as part of the Environmental Impact Assessment process for the sustainable management of the alien Invasive species-*Prosopis* and the revegetation of the cleared areas.

Public participation is a very important component in the EIA process as the public particularly the farmers and general community members who will either be affected

or be interested in the planned harvesting and revegetation operations.

The Hardap pilot site occupies commercial farming land in the area known as the Hardap irrigation scheme stretching along the Orange Fish River basin from the Hardap dam to the shell Service station at Mariental extending to the bridge for the road to Keetmanshoop.

The meeting was attended by 11 participants, 5 females and 6 males. The participants were farmers from the Hardap Irrigation Scheme and heads of public institutions representing, the Hardap Regional Council, the Ministry of Agriculture, Water and Land reform (DAPEES) and the Directorate of Forestry in the Ministry of Environment, Forestry and Tourism. The Mariental Urban Constituency Development Committee was also in attendance. The Farming Community were attending a *Prosopis* related meeting for the first time and alluded this phenomenon to a gap in communication between the farmers and institutions wishing to engage them in meetings and other activities. The farmers indicated that they have a WhatsApp group and other social media platforms including Facebook on which the information could be disseminated.

The meeting modified the agenda from group work to show of hands with Ms. Johanna Amakali recording the contributions on the chalkboard for the impact assessment which was segregated into ecological, social and economic.

Some recommendations were made that are related to the vegetation management plans and this report has recorded them to be factored into the Mariental Vegetation Management Plan.

### **Background information and discussions**

The Background Information Document was presented by the Nevunduko Consultant, Mr. Mulofwa covering mainly the aspects of the vegetation management plan on harvesting and revegetation and also the Process for the EIA. The following were the comments and recommendations on the presentation:

1. The farmers raised a concern over lack of participation in the previous meetings which might limit their contributions to the assessment of impacts. They recommended the use of socialmedia platforms for disseminating information.
2. *Prosopis* harvesting is a costly exercise and, in most cases, you don't recover the money invested into the harvesting process. In addition, most of the products derived from *Prosopis* have no goodmarket especially for firewood and charcoal as the wood density isvery low. Who is funding the project and for what length of time? Dr. Sima Lupert who is the member of the *Prosopis* Project Steering Committee explained how the project is going to be implemented and the current funding source and mechanisms. She explained the current arrangements between ORASECOM, GEF, UNDP andthe involved Ministries of Agriculture, Water and Land reform and the Environment Forestry and Tourism.
3. The *Prosopis* species with long thorns (*Prosopis glandulosa*) produces more prolifically than the other ones and should be the one to be targeted first for harvesting together with the bushes fromthe other type while the big ones remain for soil stabilization and toplay other biological functions. (Nevunduko will investigate this issue further with farmers and integrate this component into the management plans for both pilot areas).
4. The farmers wanted to know why the Irrigation Scheme area was chosen and if harvesting from here will have any impact on the damwater and the rest of the river basin. Clarity was given that; the areawas selected as one of the two pilot sites in the Hardap Region because of the high intensity and bigger sizes of *Prosopis* it carriesas well as the farming activities around it. The lessons to be learned from this pilot site will be replicated to other *Prosopis* infested areaswithin the Orange Fish River Basin.
5. The farmers further recommended that it was better if the reeds were removed first and then followed by *Prosopis* in order to avoidflooding and soil degradation. They further recommended doing selective harvesting while doing the enrichment planting so that nobig areas are exposed to soil erosion exacerbated by flooding.

6. The removal of *Prosopis* should be extended up to the bridge as alluded to in the introduction as this will speed up the flow of water out of Mariental town which experience flooding.
7. Dr. Lupert shared the experience from the study tour they undertook to the Republic of South Africa (RSA) in which she observed that the promotion of natural regeneration after harvesting *Prosopis* was more effective and less costly than revegetating with seedlings from the nurseries.

**Assessment of impacts from harvesting of *Prosopis* and ~~with~~ indigenous tree species.**

The impacts were assessed under environment or ecological, economic and social. They were further categorized as positive or negative

**Environmental/Ecological impacts**

**Positive impacts**

- Water will move freely along the river basin hence increasing the volume of water available for various uses
- Flooding which causes much damage in Mariental will be minimized
- The planting of indigenous trees will bring back and increase biodiversity in the area promoting tourism

**Negative impacts**

- Biodiversity which depend on *Prosopis* for habitat and food will be affected and some of it may find its way into the farming land and affect crops. This impact will be mitigated through selective harvesting to leave some stands behind for biodiversity while the indigenous vegetation slowly takes over.
- If not well managed, *Prosopis* may regenerate prolifically and the situation of flooding and suppression of local trees may be increased. This impact



will be mitigated by careful resource management to ensure that there is no break or work stoppage during operations until the affected areas are sustainably managed.

## **Economic impacts**

### **Positive impacts**

- Employment creation which should be locally sourced
- Business opportunities
- Improved livelihoods due to increased household incomes
- Opportunity for the youth to learn more business skills and undertake small and medium business enterprises

### **Negative impacts**

- Loss of livestock fodder which will affect the potential to farm with livestock. This impact will be mitigated by ensuring the harvesting of *Prosopis* is selective and not aimed at eliminating the entire stand at once

## **Social impacts**

### **Positive impacts**

- More cohesion with more initiatives to survive as a team.
- More social activities will be created especially among the youth to socialize through sport
- Possibility for Government to increase funding to the region for building more schools and health facilities
- Currently *Prosopis* harbor criminals and the opening up of *Prosopis* will reduce criminal activities in the town and surrounding areas.
- There will be a reduction of crop destruction by monkeys as they hide and live within the *Prosopis* vegetation.

## **Negative impacts**

- Influx of people may result into the mushrooming of informal settlements in Mariental. This will put more pressure on the Mariental Municipality to provide services to the people. This impact will be mitigated by ensuring that only local people are employed except in cases where local skills are inadequate.
- There may be outbreaks of diseases associated with increased population without water and sanitation. This will be mitigated by ensuring that no camping is allowed at the operational sites. All workers should come from their established homes unless the SMEs provide sanitation at work places.
- The increase in cash flow may attract more criminal activities into the area. This impact will be mitigated by ensuring that the cash payouts are minimized and the use of electronic money transfer is promoted

## **More issues for EIA considerations**

- The trees alongside the farms need to have some control measures (DoF to investigate further on this issue and recommend mitigation measures to Nevunduko)
- The irrigation water from the scheme contains fertilizers and this water is drained into the river boosting the growth of *Prosopis* (Nevunduko will confirm with the chairperson of the Hardap Farmers Association if they have an Environmental Clearance Certificate for this activity). Mr. Mulofwa will compose an email for Nevunduko to send to the Hardap Farmers Association

## **Way forward and closing remarks**

Dr. Lupert outlined the way forward actions after the public participation meeting. The activities include the finalization of the vegetation management plans, the EIA and EMP reports as well as the development of procedures for the deployment of

harvesting groups or SMEs to carry out the operations on their land. It will be made clear how the farmers will be involved in the activities since *Prosopis* is on their land within the river basin

**The meeting adjourned at 12.05hrs**

# Meeting attendance Register









## PUBLIC PARTICIPATION PROCESS ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR HARVESTING AND MANAGEMENT OF PROSOPIS SPECIES AT THE MARIENTAL PILOT SITE IN HARDAP REGION

Type of Activity : Public Participation Process  
 Public Participation (Meeting) Date : 2<sup>nd</sup> March 2023  
 Venue : Tahiti Guesthouse & Restaurant, Mariental

### ATTENDANCE REGISTER

Name & Surname	Institution	Contact number	E-mail	Gender	Signature
Elizabeth Shikanga	Mariental Urban CR	081 7501588	elizabethshikanga@gmail.com	F	
P. BOTHIK	Private	081 246 8766	thaoxer.3@gmail.com	M	
M. van Luik	Private	081/221458	petruanuy138@gmail.com	M	
Domen Meliane	Hardap Forests A.	081 873 0193	clan.cadriane@gmail.com	M	
Sygnia Sinvala	Forestry Mariental	081 211 2111	sthuatruan@yahoo.com	F	
Sima Lupele	Hardap Reg. Council	081 7230454	simagauevuan@gmail.com	F	

2

Name & Surname	Institution	Contact number	E-mail	Gender	Signature
Andre Nille	Nolle Farming	081 292976	Andre.Nolle@ymail.com	M	
Mona Kneicrus	farmer	0813427017	mona.kneicrus@ymail.com	F	
Gouwses Paulina	Farmer	081	mona.kneicrus@ymail.com	F	
Shanna h. Annet	MULLER-NILES	0811 722131	lesedi.BISC@pharow.com	F	
Willen J. Apherer	Comm. member	081340883	idanyuja@gmail.com	M.	
Jerricho Mulopwa	NEUUNDULE	0812706444	jerricho.mulopwa@gmail.com	M	

  
**NEVUNDUKO**  
CONSULTING SERVICES

**BACKGROUND INFORMATION**

FOR AN ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND AN ENVIRONMENTAL  
MANAGEMENT PLAN (EMP) FOR HARVESTING AND MANAGEMENT OF PROSOPIS  
FOR MARIENTAL PILOT SITE IN HARDAP REGION

**PUBLIC PARTICIPATION MEETING**  
2<sup>nd</sup> March 2023, 19h00  
Tahiti Guesthouse & Restaurant, Mariental

**Introduction continued**

*Prosopis* species were introduced to Namibia (2012) and South Africa around the 1880s for fodder, shade, and fuel. These alien species have now invaded large parts of southern and central Namibia and north-western South Africa. *Prosopis* infestation is mainly along watercourses, they extremely outcast indigenous plants for water and eventually suppressing them. Invasive *Prosopis* directly impacts on agricultural land production and is believed to pull severely on scarce groundwater resources.

**Introduction continued**

It is against this background that the Proponent (Directorate of Forestry) through ORASECOM has commissioned this EIA project to conform to the Namibia Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (Government Notice 30 of 6 February 2012) and obtain Environmental Clearance Certificate (ECC) for the proposed project.

**APPROACH AND  
METHODOLOGY****PHASE I: PROJECT INITIATION & INTERNAL  
SCREENING**

- i. Formulation of background information note
- ii. Notification to MEPT of the proposed project through submission of EIA application form and online registration
- iii. Undertake site visits to identify environmental issues
- iv. Identify key stakeholders, regulatory authorities and interested and Affected Parties (IAP)

**PHASE II – EIA AND ENVIRONMENTAL  
MANAGEMENT PLAN**

- i. Notify other regulatory authorities as relevant as well as IAP (advertisement through newspaper, site notices, email etc)
- ii. Conduct stakeholder consultation meetings with other regulatory authorities and interested and Affected Parties (IAP)
- iii. Review technical reports produced for the *Prosopis* project
- iv. Assess the potential environmental impacts of the project activities
- v. Compile the EIA report and EMP
- vi. Circulate the EIA report and EMP to regulatory authorities and IAP for reviewing and comments
- vii. Incorporate input and comments from the regulatory authorities and IAP
- viii. Submit the final report to MEPT for their review and decision making

**Introduction continued**

Nevunduko Consulting Services has been contracted by ORASECOM through the *Prosopis* Project Steering Committee under the auspices of the Ministry of Agriculture, Water and Land Reform (Department of Water Affairs) to carry out an Environmental Impact Assessment and develop an Environmental Management Plan for Gibeon and Mariental sites, which will guide the harvesting of invasive *Prosopis* and revegetation of the harvested areas

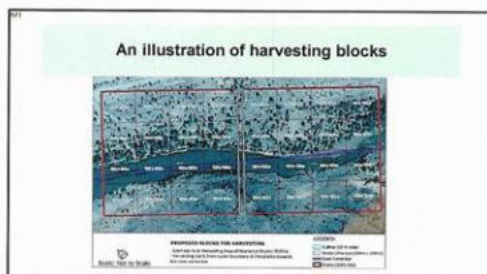
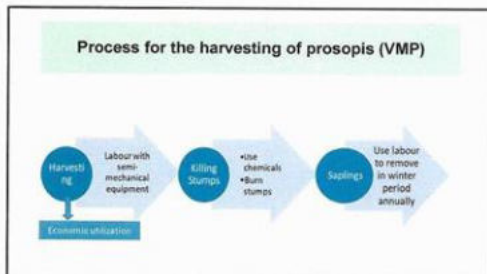
**KEY CONSULTING TEAM**

- **Oiavi Makuti:** *Lead Environmental Assessment Practitioner*
- **Cecilia Ndunge:** *Research Methodologies and Baseline Information Expert*
- **Jericho Mulofwa:** *Expert on Forestry/Vegetation Management*
- **Wycliffe Nabaasa:** *Expert in Communication Documentation and Stakeholder Engagement*
- **Shivute Nangula:** *Environmental Assessments and Report Compilation*
- **Gabriel Hatutale:** *Overall assignment coordination and guidance*



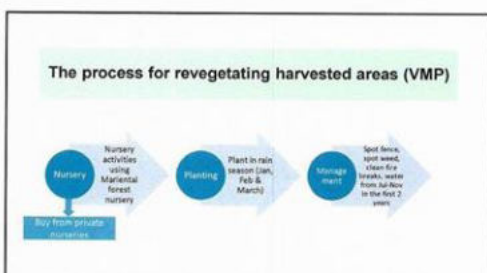
### Harvesting of prosopis (VMP)

- It is recommended that the effective, efficient and sustainable harvesting of Prosopis is best achieved by an integrated combination of methods. The VMP therefore recommend a combination in which labour will use semi-mechanical equipment (GIZ de-bushing Manual, 2017)
- The PPSC will develop ToR for the recruitment, operations and remunerations of the SMEs.
- SMEs will be responsible for the supervision and welfare of all workers recruited for the operations and they will provide their own equipment.
- The pilot area will be demarcated into compartments of 15ha each measuring 500m x 300m.
- The compartments will have well cleared access roads in between and measuring 15m which will be wide enough to accommodate two vehicles crossing each other.
- Saplings/regeneration will be removed by labour annually during winter season, when the trees are not growing.
- Stumps may be killed by approved chemicals if this EIA recommends
- Harvested materials will be transported to storage processing facilities for economic use



### Revegetation of cleared areas (VMP)

- The restoration of cleared land starts with protecting all indigenous remnants of natural vegetation that co-exist with the Prosopis to be removed, therefore, the VMP is recommending the enrichment planting of individual indigenous tree species originally found in the area. These trees will first be raised in the nursery and planted in the cleared areas where no indigenous trees are growing.
- The pilot site will be revegetated with indigenous trees as described in Section 2.8 of the VMP for the list of indigenous trees found in the area, with preference to fast-growing Acacia karoo.
- The PPSC will leverage to use the existing DoF nursery infrastructure in Mariental.
- Nursery activities will be provided with the training on nursery establishment and management.
- The number of seedlings needed for the project site is 100/ha \* 950 = 95000.
- Due to the high number of seedlings needed for revegetating, the PPSC will undertake to source out part of the seedling supply to complement the ones produced in the Mariental Forestry Nursery.





**PUBLIC PARTICIPATION INPUTS INTO THE EIA**

**Points for discussion**

HOW WILL THE HARVESTING OF PROSOPIS AND REVEGETATION WITH INDIGENOUS TREES IMPACT THE 3 PILLARS OF SUSTAINABLE MANAGEMENT/DEVELOPMENT (Both Positive and negative impacts)

1. ECONOMIC
2. SOCIAL
3. ENVIRONMENT

(Proposal to divide participants into three groups)

**IMPACT ASSESSMENT CRITERIA**

SIGNIFICANCE OF IMPACTS		SIGNIFICANCE RATING	
IMPACT	IMPACT CRITERIA	IMPACT RATING	CRITERIA
POSITIVE	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	High	When the impact will have a significant positive effect on the environment and contribute to the local economy.
NEGATIVE	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	Low	When the impact will have a significant negative effect on the environment and contribute to the local economy.
MIXED	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	Medium	When the impact will have a significant effect on the environment and contribute to the local economy.
UNDETERMINED	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	Medium	When the impact will have a significant effect on the environment and contribute to the local economy.
NEGATIVE	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	Low	When the impact will have a significant negative effect on the environment and contribute to the local economy.
POSITIVE	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	High	When the impact will have a significant positive effect on the environment and contribute to the local economy.
MIXED	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	Medium	When the impact will have a significant effect on the environment and contribute to the local economy.
UNDETERMINED	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	Medium	When the impact will have a significant effect on the environment and contribute to the local economy.
NEGATIVE	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	Low	When the impact will have a significant negative effect on the environment and contribute to the local economy.
POSITIVE	The project will contribute to the local economy by creating a significant number of jobs and increasing the local market for Prosopis products.	High	When the impact will have a significant positive effect on the environment and contribute to the local economy.

**WAY-FORWARD**

What happens after here?

- Finalization of the EIA process
- Harmonization of the VMP with the EIA process
- Planning for economic utilization
- Implementation of the Project (Harvesting, Revegetation and Economic utilization of the harvested Prosopis)

**THANK-YOU**  
(Baie Dankie)

**Annex 1:**  
**List of authorized and tested chemicals for killing the tree stumps**

The following chemicals are approved in Namibia and have been used by farmers successfully in the Auob and Nossob areas with much success, Auala et al (2012):

- Browser
- Tordon
- Virro
- Exe
- Access

**Annex 2:**  
**Some recommended (commercial) economic use of prosopis**

From the Cost Benefit Analysis conducted by Blue Waters ("Assessment of Economic Opportunities Based on the Harvesting of Prosopis") the following Prosopis end-use products were identified as having high potential to convert into profitable businesses:-

- i. Bush Feed
- ii. Charcoal
- iii. Firewood
- iv. Crushed pods





## **ENVIRONMENTAL IMPACT ASSESSMENT PUBLIC PARTICIPATION PROCESS**

Notice is hereby given to all Interested and Affected Parties that an application will be made to the Environmental Commissioner in terms of the Environmental Management Act (No.7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 of 6 February 2012) for the following:

**Project Name:** Harvesting and Management of Invasive Alien Species; *Prosopis* including Revegetation at Mariental Pilot Site in the Orange-Fish River Basin.

**Project Location:** Mariental in the Hardap Region, Namibia

**The Proponent:** Ministry of Environment, Forestry and Tourism

(Directorate of Forestry)**Environmental Assessment Practitioner:**

Nevunduko Consulting Services **Registration of Interested &**

### **Affected Parties:**

In line with Namibia's Environmental Management Act (No.7 of 2007) and EIA Regulations (GN 30 of 6 February 2012), all Interested and Affected Parties (I&AP) are hereby invited to register and submit their comments, concerns or questions to the contact details below **on or before 30 March 2023.**

### **2 Public Meeting:**

A public meeting will be held on Saturday, **2nd March 2023, 10h00 in Mariental** (Tahiti Guesthouse and Restaurant).

### **3 CONTACT:**

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