Project Title	**LANDSCAPE MANAGEMENT STRATEGIES AND INVESTMENT PLANS FOR THE NORTH – CENTRAL, KAVANGO EAST, KAVANGO WEST, ZAMBEZI EAST AND ZAMBEZI WEST**
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Contents

Abbreviations and Acronyms

CBNRM	Community-Based Natural Resource Management
CDC	Constituency Development Committee
CLDP	Communal Land Development Project
CLS	Communal Land Support
DAPEES	Directorate of Agricultural Production, Extension and Engineering Services
DoF	Directorate of Forestry
DRWSSC	Directorate of Rural Water Supply & Sanitation Coordination
DVS	Directorate of Veterinary Services
FMD	Foot and Mouth Disease
FSP	Farmers' Support Programme
GIS	Geographic Information System
GIZ	Gesellschaft für Internationale Zusammenarbeit
GRN	Government of the Republic of Namibia
IRLUP	Integrated Regional Land Use Planning
IP	Investment Plan
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
M & E	Monitoring and Evaluation
NSA	Namibia Statistics Agency
PCLD	Programme for Communal Land Development
RDCC	Regional Development Coordinating Committee
SSCF	Small Scale Commercial Farming Traditional Authority
TA	Traditional Authority
VDC	Village Development Committee

Acknowledgement

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1. Executive Summary

This Investment Plan (IP) is a deliverable for the Environmental Investment Fund of Namibia (EIF) through the Ecosystem Based Adaptation (EbA) Project in the designated northern Namibia' landscapes of North-Central, Kavango East and West, Zambezi East and Zambezi West implemented by Mulela Investments CC using Stakeholders Consultative meetings and Local Level Participatory Planning (LLPP).

The IP presents various aspects of potential Investments Initiatives undertaken under the EbA projects for the above-mentioned northern landscapes focal areas in order to establish or improve existing community' livelihood projects in those identified landscapes. The IP includes but not limited to the following: - background of the EbA project and Socio-Economic profiling of the 4 landscapes i.e location, rainfall, wildlife, soil and topography, infrastructure, primary and secondary industries, etc.

The potential Investments Plans developed in the four northern landscapes is based on the initial communities investments needs assessment and vulnerability assessments of the EbA Project' focal landscape area which was conducted by EbA Project.

Minimum of 30 grants are envisaged to be distributed amongst 8 landscapes and two villages/settlements.

Awarding and implementation of grants under 2 Investment windows:

Restoration and Climate Proofing (Landscape strategies /restoration)
US$ 100,000 to US$ 300,000 – Landscape specific

- Conservation and restoration of forest
- Agro-ecological farming and agroforestry
- Traditional water and land management practices

Eco-Enterprise Adaptation Investments
US$ 100,000 to US$ 400,000 – Small scale enterprises

- Beekeeping, poultry production
- Crafts, tourism ventures

Grant/project duration: 2 years

2. Methodological approach

2.1 Review of existing studies and strategies

In developing the EBA Cluster 2 Plan, several reports were reviewed including, but not be limited to focal target landscapes such as documents and consultations generated thus far under the SAP006.

2.2 Focal Landscape Consultations

Key stakeholders and community consultations in the four targeted landscapes through a participatory rural appraisal was undertaken to inform the EbA project' Investment Plan and Management Strategies.

3. Introduction and background information

The largest portion of more than 70% population in rural target landscapes depends on environmental resources, whose continued utilisation and productivity is threatened by climate and non-climate driven factors. Climate-and non-climatic factors that affect productivity of environmental resources result in degraded land, reduced water in the ground, reduced ability for land to support plant and livestock populations and loss of biomass production, failed soil fertility, and reduced land's ability to provide adequate livelihood options, which increases community vulnerabilities. Livelihoods depend on the healthy status of the services provided by ecosystems i.e., economic value through agro-productive use (grazing for livestock and health soils for agriculture).

The Environmental Investment Fund of Namibia (EIF), in 2015, obtained accreditation from the Green Climate Fund (GCF). The GCF is a unique global fund, established within the rubric of the United Nations Framework Convention on Climate Change (UNFCCC), as a response to climate change for investing in low-emission and climate-resilient development. The status of accreditation makes EIF eligible for accessing climate change funding from the GCF.

In February 2019, the 22nd GCF Board meeting approved the first Ecosystem-based Adaptation (EbA) project proposal entitled "Building resilience of communities living in landscapes threatened under climate change through an ecosystem-based adaptation approach in Namibia". The EbA concept involving the conservation, sustainable management and restoration of ecosystems are cost-effective solutions that can help people adapt to the impacts of climate change.

The EbA project's overall objective is to increase the climate change resilience in productive landscapes in Namibia through the implementation of ecosystem-based adaption actions that strengthen social and ecological systems to sustain livelihoods at local levels and facilitate value chains of natural resources. The project is being implemented in eight landscapes that are managed by registered Community-Based Organisations (CBOs), gazetted Communal Conservancies, Community Forests, Water Point Committees, Farmers Associations amongst others.

The project implementation is guided by the three (3) components below in eight landscapes:
Component 1: Development and Implementation of climate change resilient ecosystem management and product practices that reduce the vulnerability of communities
This component aims to provide technical assistance and training:

- Creating institutional landscape governance systems and/or strengthening them through participatory knowledge sharing at the local level.
- Enhancing institutional capacity for ecosystem landscape management and climate change resilience at sub-national & local levels.

Component 2: Increase the resilience of productive landscapes to support ecosystem goods and services that improve livelihoods for local communities in Namibia

This component aims to establish and implement a ring-fenced grant facility targeting the ecosystem-based adaptation activities by providing grant funding through two (2) investment windows following the eligibility criteria and procedure described in the funding proposal (Addendum VII – Funding proposal package for SAP OO6) and GCF Investment and Results Management Frameworks:

- Ecosystem-based Adaptation of 8 landscapes
- Climate-resilient infrastructure
- Natural Resource Enterprises

Component 3: Documentation, dissemination and uptake of lessons learned

Establishing an integrated information system to effectively manage results in informed decision-making at all levels. The integrated information system will enable the;

- Developing knowledge products, e.g. Photo-stories & Presentations.
- Conducting annual policy advocacy activities & local forums.
- Developing a national EbA strategy in consultation with the NDC & NAP teams under the guidance of the NDA.

Producing a policy-based assessment report.

3.1 Brief overview of the EbA Project

The Ecosystem – Based Adaptation (EbA) project, the first to be approved in the ecosystem restoration, is a project of the Ministry of Environment, Forestry and Tourism (MEFT), implemented by the Environmental Investment Fund of Namibia (EIF) through a Project Management Unit (PMU), and is spearheaded by a multi-stakeholder Project Steering Committee (PSC). It is a product of the proposal "Building resilience of communities living in Landscapes threatened under climate change through an Ecosystem-Based Adaptation approach in Namibia".

The project aims to increase climate change resilience of productive landscapes in Namibia through implementation of Ecosystem-Based Adaption actions that strengthen social and ecological systems to sustain livelihoods at local levels and facilitate value chains of natural resources.

The project' action responds to declarations and processes of the Rio Earth Summit and UN Framework Convention on Climate Change (UNFCCC) that promotes investing in low-emission and climate-resilient development that have high impact on local development and community livelihoods while increasing conservation of the ecosystem.

The EbA project **Cluster 2** is implemented in four (4) landscapes northern Namibia - in the North Central Regions, Kavango East & West, Zambezi East and Zambezi West which are managed by registered Community Based Organisations (CBOs), gazetted Communal Conservancies, Community Forests, Water Point Committees, Farmers Associations and other organised community formations.

The project seeks to use large scale Ecosystem-based Adaptation (EbA) approaches as cost effective and low risk approach in enhancing community resilience to vulnerabilities and impacts from climate change, as a means to change (shift in paradigm).

The assignment (facilitation of adoption of investment potentials and strategies for managing eco-restoration) responds to project objective 1 /Component 1 for developing and Implementing climate change resilient ecosystem management and product practices that reduce the vulnerability of communities, by enhancing technical assistance and training for creating and enhancing institutional landscape governance systems through participatory knowledge sharing at local level and enhancing institutional capacity for ecosystem landscape management and climate change resilience at sub-national & local levels.

Accordingly, the assignment mobilised and increased community consensus on what constitute investment potentials in the target landscapes, facilitated the process of assessing benefits and risks associated with such investments and mechanism for gaining access to financial resources for supporting such investments by carrying out cost and benefit assessment, as well as assessing associated management, financial and technological implications and assumptions as basis for adapting Investment Plans and management strategies.

3.2 Objectives of assignment

To increase climate change resilience of productive landscapes in the north-central regions of Namibia through implementation of ecosystem-based adaptation actions that strengthen social and ecological systems to sustain livelihoods at local level and facilitate value chains of natural resources.

The specific objectives of the project are:

(a). To enhance the resilience of natural resources and livelihoods sensitive to climate change impacts through improving community adaptive capacities to sustainably manage natural resources; and
(b). To maintain and enhance ecosystem integrity to continue to support the generation of food and income in order to reduce the severity of negative socio-economic impacts of climate change on vulnerable rural households.

3.3 Why landscape Investment Plan/ Management Strategies

Investment planning helps both donors and beneficiaries to choose the right investments as per financial goals and objectives. According to the funds available, EbA project through its grants once available it will invest in these community plans to obtain desired goals and objectives towards EbA project.

The global climate is changing rapidly thus, as nations and the international and bilateral organisations and processes that support them plan how best to adapt to climate change, they need evidence on where to focus adaptation efforts and direct financial resources accordingly. The main approach to climate change adaptation to date has tended to involve investment in engineered interventions, such as smart agricultural technologies and the adoption of integrated landscape management strategies and rewarding Nature-Base Innovation rewards. The envisaged Ecosystem-based Adaptation (EbA) project shall provide the optimal adaptation solutions to the targeted landscapes of the North-Central, Kavango East/West, Zambezi East and West where 70% of rural communities are more dependent on natural

resources for their lives and livelihoods. This calls for innovative approaches to ensure that ecosystem-based adaptation is invigorated. While EbA integrates the use of biodiversity and ecosystem services into an overall strategy to help communities adapt to the adverse impacts of climate change, strategies on sustainable management, conservation and restoration of ecosystems to provide services to assist rural communities are crucial to assist communities to adapt to both current climate variability and climate change.

4. Socio-Economics of the Four Landscapes

In selecting landscapes, consideration were given to landscape's ability to meet local needs of the population and ability of the population to use the ecosystem resources to conserve biodiversity.

Cluster 2 (North-Central, Kavango East, Kavango West, Zambezi West, Zambezi East and Zambezi West)

4.1 North Central Landscape

The region 'Central North' includes the four political regions Oshikoto, Ohangwena, Omusati and Oshana. About half of Namibia's population lives in the Central North and compared to the rest of the country the population density is relatively high. The Central North is bordered by the Etosha Pan in the south, by the Kaokoveld in the west, by Angola in the north and by the Kavango Region in the east. Targeting 3 conservancies of Uukwaludhi, Uunkolokhadi, and Sheyashuushona. The landscape is predominantly agricultural and wood product resource-rich, as opposed to wildlife management.

- The landscape size is 25,036km^2.
- It is located in sections of Omusati, Ohangwena, Oshikoto and Oshana regions and cuts across 9 political constituencies of Okaknkolo, Omuthiya, Okongo, Ruacana, Onesi, Tsandi, Okahao, Otamanzi and Uuvudhiya.
- It borders Angola to the north, Kavango West Region to the East, Kunene Region to the west and Etosha National Park to the south.
- It covers six(6) conservancies, namely Okongo, King Nehale, Iipumbu ya Tshilongo, Sheya Shuushona, Uukwaluudhi and Uukolonkadhi, and
- Nine (9) Community Forests (Uukolonkadhi, Uukwaluudhi, Ongandjera, Otshiku tshIithilonde, Ohepi, Oshaampula, Okongo, Ehangano, and Omufitu Wekuta).

4.1.1 Omusati Region

Is one of the fourteen regions of Namibia. The Omusati region is one of the smallest regions in the country in terms of surface area and has the third highest population density. The region is adjacent to Kunene in the west and south, Hardap in the north, Oshana and Ohangwena in the east and Angola in the north. The region is also the birthplace of Sam Nujoma, the first post-independence president of Namibia and a 15-year mandate. The administrative capital of the region is Outapi. According to 2011 data, 242,900 people live in the region. The area is the largest in the country with a surface area of 26,551 square kilometers.

Location & size: The Omusati Region is one of the northern regions with a very dominant population of the Mopani tree species and a few Makalani palm trees, which decrease rapidly in number as one moves westwards from the border with the Oshana region.

Omusati is predominantly an agricultural region in which mahangu is successfully cultivated as a staple food. A canal, which carries water from the Ruacana river to Oshakati, passes through the town of Outapi, the region's capital. Water from this canal is used for irrigation of the large government-run farm at Etunda, where crops such as maize, watermelons, tomatoes, potatoes, and bananas ,amongst other fruits and vegetables, are grown. Omusati Region borders the Kunene Province of Angola in the north, while domestically it shares borders with Ohangwena region in the north-east, Oshana region in the east and Kunene region in the south-west.

Population: The 2011 Namibia Population and Housing Census results show that Omusati region has a population of 243 166 people of which 133 621 are women and 109 545 are men. The grew at an annual rate of 0.6 percent between 2001 and 2011. More than 90 percent of the population lived in rural areas compared to only 5.7 percent of the population who lived in urban areas. There were 46 698 households in the region with an average size of 5.2 persons per household.

4.1.2 Oshana Region

The region is located in the central north of Namibia. To the north, the region is bordered by the Ohangwena Region, to the east it shares a common border with Oshikoto Region, to the south, the region borders onto the Kunene Region while the Omusati Region borders to the west. The Region has a surface of 8653 km2, including a portion of the Etosha National Park where Okaukuejo Rest Camp is situated.

The northern portion of the region, inclusive of the three urban centres of Oshakati, Ongwediva, and Ondangwa is densely populated as opposed to the central part of the region which is sparsely populated and characterized by subsistence farming. English is the official language while the predominantly spoken language in the region is Oshiwambo. Other languages such as Afrikaans, Portuguese and other Namibian languages are sparsely spoken.
The extremely flat topography of the Oshana Region is characterized by the Oshana system, which dominates the central area. This is a complex ephemeral system of broad, shallow, vegetated channels that flows south out of Angola after good rains, meandering through the sandy soils and mostly ending in large pans.

Population: According to the National census report of 2011; Oshana Region has a population of 176,674 of which 96, 559 are female and 80, 115 are male. The population annual growth rate is 0.9 percent. 55% of the population lived in the rural areas while 45% lived in the urban areas.

4.1.3 Ohangwena Region

The region is one of the fourteen regions of Namibia. Ohangwena region is the second smallest area after the Oshana region in terms of area and has the second largest density in terms of population. Ohangwena is the second most populated region after the Khomas region, including the capital Windhoek. The region is adjacent to Omusati in the west, Oshana and Oshikoto in the south, Kavango in the east and Angola in the north. The administrative capital of the region is Eenhana.

Population: According to 2011 data, 245,100 people live in the region. The region is the second smallest region of the country with a surface area of 10,706 square kilometers.

4.1.4 Oshikoto Region

The region is one of the fourteen regions of Namibia. The Oshikoto region is one of the smallest areas of the country in terms of surface area and has the fifth largest density in terms of population. The region is adjacent to Oshana in the west, Ohangwena in the north, Kavango in the east, Otzojondjupa in the southeast, and Kunene in the southwest. Omuthiya is the administrative capital of the region.

Population: According to 2011 data, 181,600 people live in the region. The area is the largest in the country with an area of 38,685 square kilometers.

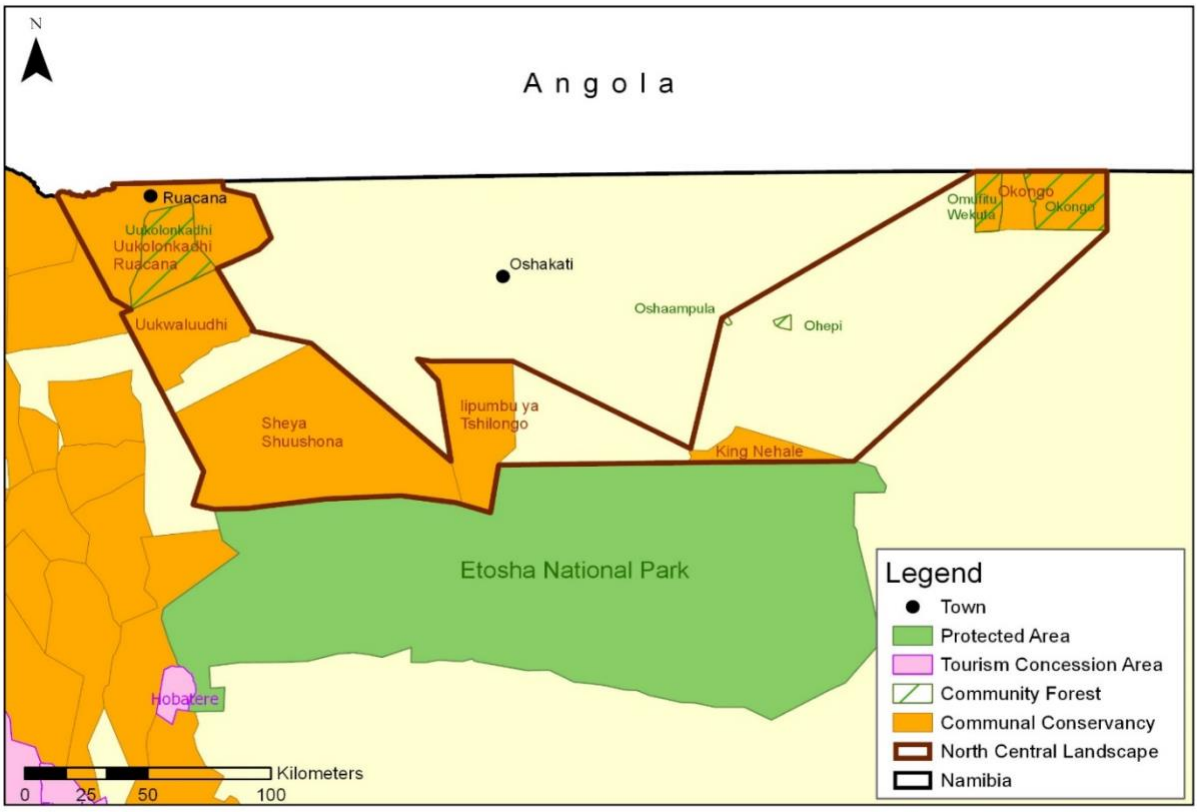

Figure 1: Map of the North-Central Landscape

4.1.1 Livestock farming and Animal Health in the North-Central Regions

Although livestock, including cattle, goats and sheep are kept throughout all four regions, subsistence farmers in eastern Ohangwena, Oshikoto and southern Oshana regions specifically depend on livestock, as crop production is poor in these areas. Hotter and drier climates may have a negative impact on the productivity of specific livestock breeds and yields may be poor. Certain livestock species may not be able to cope with higher temperatures or could produce less meat and milk and have poor reproduction rates. On the other hand, increased rainfall could lead to improved pastures and an improved fodder situation.

Animal health may be affected by disease. A number of animal diseases were observed in the last rainy seasons, caused by extended and heavier rains and floods. Problems such as rotten hooves, heavier infestations of mosquitoes that are said to kill goats, tsetse flies and other pests common in northern Namibia, including Ohangwena, Omusati and Oshana regions.

4.1.2 Water Resources

Groundwater quality in many areas in Oshana, western Oshikoto and some part of Ohangwena regions is poor and unfit for consumption by humans and in some cases even livestock, with very high levels of salinity. The expected climatic changes may aggravate this situation, with higher evaporation rates leading to increased salinity. Run-off from the oshanas will produce seasonal water resources, which may increase or decrease depending on rainfall in southern Angola. In eastern Ohangwena Region there is groundwater, but this is often only accessible from deeper than 60 m. Water is recharged from southern Angola and is considered to be of quite good quality – not sharing the problem of salinity with other areas in northern Namibia. Eastern and southern Oshikoto Region contains some hilly landscapes and water supply in the region is mainly accessed through deep boreholes. How aquifer recharge will be affected by the climatic changes is not yet fully understood, but Africa-wide studies indicate that southern Africa will be mainly affected by increased water scarcity.

4.1.3 Forest resources, wildlife and biodiversity

Eastern Ohangwena and a part of Oshikoto contain large-scale forest areas or so-called Kalahari woodlands. These are considered to be in a healthy condition with limited deforestation. They are important for maintaining healthy grazing, to provide non-forest natural products and alternative foods and livelihood opportunities for the people living in this area. Presently, one community forest and one conservancy in eastern Ohangwena Region at Okongo support good governance of the forest and wildlife resources in the area. Oshikoto Region embraces most of Etosha National Park and contains conservancies such as the King Nehale Conservancy, which directly benefits from tourism and wildlife resources associated with the park. Omusati Region houses several conservancies, but Oshana, Oshikoto and Ohangwena have limited proclaimed conservancies in place. Among the many animals found in northern Namibia are: lions, elephants, giraffes, hippopotamus, cheetas, black and white rhinos, wildebeest, hyenas, vultures, black backed jackals, ostriches, zebras, seals, dikdiks (a tiny antelope species), baboons, springboks, wild dogs, kudus and oryx (or oryxes).

The use of wild fruits and plants as food, e.g. wild spinach (omboga – from which ekaka is made), wild berries (eembe) and marula is especially important during the dry season and during droughts. Additionally, numerous wild plants are used as traditional medicines. During climate change, the distribution of wild plants for both food and medicines may be affected and their occurrence in specific areas and their ability to reproduce and grow there may not be guaranteed. The value we place on these products may be seriously affected and we need to investigate alternative products for their potential value.

On the other hand, different important wild species may become more abundant in the same area, although this potential change of distribution is not very well understood at present.

Infrastructure and public services Impacts on infrastructure are generally caused by flooding and heavy rainfall, although increased temperatures may also have an effect. Over the past years the extreme floods in the Oshanas has led to homes as well as public infrastructure such as schools and clinics being damaged. In the large towns such as Oshakati, Ongwediva and Ondangwa many houses in informal settlements and peri- urban areas were badly affected by the floods. Many roads, especially gravel roads, were washed away and individuals and villages were cut off from the outside world for prolonged periods. Schools were closed and learners missed classes, hindering their performance in school exams. There are a number of

other sectors and sector themes that are very important in Ohangwena, Oshana and Oshikoto regions.

4.1.4 Rainfall

The rainiest area of Namibia is the north-east, where rainfall ranges from 500 to 600 millimeters per year. Winter is dry everywhere, while in non-desert regions (north and east) it rains in summer, from November to March, usually in the form of showers or thunderstorms in the afternoon.

4.1.5 Climate change vulnerabilities

Namibia's climate is generally hot and dry with variable and unpredictable rainfall patterns. This situation will become worse as a result of climate change. The country is highly dependent on climate sensitive natural resource-based sectors such as agriculture, fisheries and mining, which accounted for 24% of the total Gross Domestic Product (GDP) in 2008 (Central Bureau of Statistic, National Planning Commission, 2009).

4.1.4 Key challenges

Include high levels of Human-Wildlife Conflict with high financial costs from human-wildlife interactions especially with roaming elephants and lions from Etosha National Park.

4.2 Kavango East and Kavango West Landscapes

The two landscapes share similar geographical, as well as socio-economic characteristics of vegetation and human settlement patterns, mainly influenced by the Okavango River Basin. The seasonal activities of the river basin mainly determine the nature and level of agricultural production as well as availability of water and eco-tourism activity.

- The Kavango East and West Landscape is 10,311 km^2 in size and straddles the two Kavango Regions, 13 constituencies (Kapako, Mankumpi, Mpungu, Musese, Ncamangoro, Ncuncuni, Nkurenkuru, Tondoro, Mashare, Ndinyona, Rundu Rural and Ndonga Linena)
- Including five (5) conservancies (Markus Nakero, Muduva Nyangana, George Mukoya, Shamungwa and Joseph Mbambangandu) and
- Twelve (12) community forests (Hans Kanyinga, Likwaterera, Cuma, Ncaute, Gwcatjinga, Mbeyo, Ncamangora, Ncumcara, Katope, Kahenge, Muduva Nyangana and George Mukoya

4.2.1 Socio-Economics Profile

On account of its higher rainfall than most other parts of Namibia, this region has agricultural potential for the cultivation of a variety of crops. There is also potential for organised forestry and agroforestry, which should stimulate furniture making and related industries. The towns of Rundu and Nkurenkuru are the only proclaimed towns within this landscape.

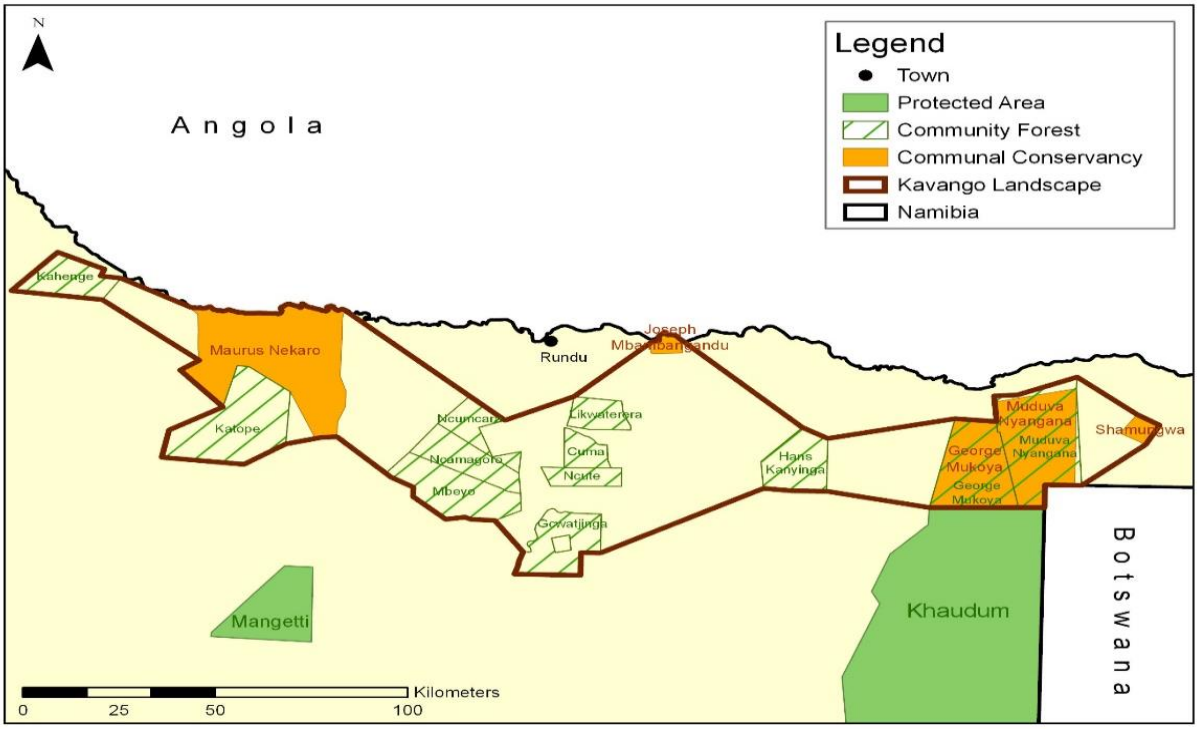

Figure 2: Map of the North-Central Landscape

4.2.2 Location & size

The Kavango East and West Landscape is 10,311 km^2 in size and straddles the two Kavango Regions, 13 constituencies (Kapako, Mankumpi, Mpungu, Musese, Ncamangoro, Ncuncuni, Nkurenkuru, Tondoro, Mashare, Ndinyona, Rundu Rural and Ndonga Linena) including five conservancies (Markus Nakero, Muduva Nyangana, George Mukoya and Joseph Mbambangandu) and twelve community forests (Hans Kanyinga, Likwaterera, Cuma, Ncaute, Gwcatjinga, Mbeyo, Ncamangora, Ncumcara, Katope, Kahenge, Muduva Nyangana and George Mukoya – the latter 2 coinciding with conservancies.

4.2.3 Population

The total population in the proposed landscape is estimated around 111,676 people with 71% living in rural areas and 43% of the whole population being less than 15 years of age. There are about 36,741 households, with an average size of 6.0 persons per household. The main language groups are Kwangali, Gciriku, Hambukushu, and Mbuza.

4.2.4 Landscape: Soils and topography

The topography is northern Kalahari sandvelds typically characterized by extreme flatness with a gradient towards the Okavango river in the north and towards the Makgadikgadi Depression in northern Botswana. Drainage is also typically poorly developed with only a few drainage lines between some of the dunes, are locally known as *omurambas*. A few flow paths are traceable on the sandy surface, but very little run-off occurs even after heavy rainfall.

The Okavango River serves as the major source of water along the entire northern boundary of the 2 regions while a regional aquifer serves as a very reliable source of groundwater accessed through boreholes, as the water table is seldom shallower than 25 meters.

4.2.5 Rainfall

The mean annual rainfall of 348-871mm is received 90% of the time. Lowest rainfall recorded was only 288mm and the highest of 1,005mm gives an indication of the variability in the region's rainfall. The southern part of the region can expect a rainfall of 321-828mm (90% of the time) although extremes of 171mm and 1,038 mm have been recorded. Average potential evaporation for the region is estimated at 2,500mm per year. Evapotranspiration (loss of water from vegetation) is also very high, further reducing the amount of water stored in the soil.

4.2.6 Vegetation

The vegetation of the area comprises of dry medium to tall woodland and savannah associated with the featureless plains. Dominant vegetation types are *Baikiaea plurijuga, Terminalia spp, Combretum spp, Burkea africana, Pterocarpus angolensis, Lonchocarpus spp* and *Guibourtia coleosperma*.

4.2.7 Wildlife

Elephant, giraffe, lion, spotted hyena, African wild dog are among the key species found in the area. The unfenced Khaudum National Park lies immediately to the south east of the landscape. The area to the west of the park forms a wet season dispersal area for species such as elephant, roan and giraffe. Khaudum National Park and the surrounding area is one of the last sanctuaries for African Wild Dog (an endangered species) in Namibia.

4.2.8 Land tenure

Land is entirely communal and is being administered by various traditional authorities.

4.2.9 Sources of livelihoods

Farming accounts for 35.57% of household income followed by 26.31% earn from wages and salaries. Under agriculture crop farming accounts for 60.15% and livestock farming 26.06% of household income. A well-established and active regional farmers' association, which is affiliated to the national farmers' union, advocates for the small farmers.

4.2.10 Wildlife and tourism

Tourism activities and developments (lodges and campsites) are presently concentrated on the eastern part of the landscape around largely along the Okavango River. These follow the concentration of the biodiversity, wildlife and scenic areas in the eastern part of the landscape especially the wetland systems of the Bwabwata National Park. Well established community-level enterprises exist where producers sell handy crafts, thatch grass, baskets and even hand-made wooded furniture and wood carvings to tourists. There is a lower level of tourism investments in conservancies away from the Okavango River and also generally lower overall.

4.2.11 Climate change vulnerabilities

It is predicted that a 10% decrease in rainfall will be experienced in the northern and southern regions of Namibia, and a 20% decrease in the central regions, by 2050 . These figures are expected to worsen to 20% and 30% respectively by 2080 (Tripe et al. 2010). For the Kavango Regions, the likely long-term impacts of the increasing frequency and intensity of bush fires as well as what is likely to happen to the Okavango River, which receives most of its water from the Angolan highlands remain 2 critical areas of concern.

4.2.12 Infrastructure

The landscape has relatively good infrastructure, but most of the infrastructure is focused in central points or settlements areas. The area is relatively well served with an electricity network, although limited electricity within the remote areas of the region.

A network of roads is also fairly well-distributed although most of these roads are gravel or sandy roads. The Trans-Caprivi Highway that links the Walvis Bay port to eastern countries such as Zambia, Zimbabwe, northern Botswana, the south-east of Angola and the south east of DRC (also known as the Walvis Bay-Ndola-Lumbabashi corridor) (UNOHRLLS, 2007) plays an important role in the trade potential of the region. Recently-built Rundu-Ondangwa all-weather trunk road (B10) serves as the major artery for connecting Namibia's populous central northern regions with the north-eastern regions. Rundu airport serves as regional aviation hub that also accommodates Air Namibia's 4 weekly flights on Windhoek, Rundu and Katima Mulilo route. Several smaller airstrips cater for the tourism sector especially in the eastern part of the region.

The Okavango River is the main source of water for the majority of people living within proximity to the river. The communities living far from the river depend mostly on water from boreholes supplied by MAWF. They collaborate with MAWF through community-based waterpoint committees.

4.3 Zambezi East Landscape

Its strategic location at the confluence of major river systems has influence on the landscape's ability to sustain natural resources and ecosystem provision which supports development of nature- and agro-based based enterprises in agriculture, water, marine ecology and tourism. The landscape's ability has direct bearing on sustaining human livelihoods and wildlife habitats. The conservancies in this landscape include Kasika, Impalila, Sikunga, Salambala and Bamunu, all in the influenced by Chobe and Zambezi Rivers.

- The total size is 2,869km^2 and it shares borders with Zambia, Botswana and the Zambezi West Landscape.
- The landscape covers sections of 4 out of the 8 of the constituencies of the Zambezi Region i.e. Sibbinda, Katima Rural, Kabbe South and Kabbe North.
- Eight (8) conservancies (Bamunu, Salambala, Nakabolelwa, Lusese, Kabulabula, Kasika, Sikunga and Impalila) and
- Three (3) community forests (Bukalo, Zilitene and Sikanjabuka) are found in the landscape.
- The area is identified as one of the key wildlife corridors and dispersal routes between Botswana, Angola and Zambia and for this purpose, forms part of the Kavango Zambezi Trans frontier Conservation Area (KAZA TFCA). KAZA TFCA,
- It is the world's largest conservation area, spanning five southern African countries; Angola, Botswana, Namibia, Zambia and Zimbabwe.

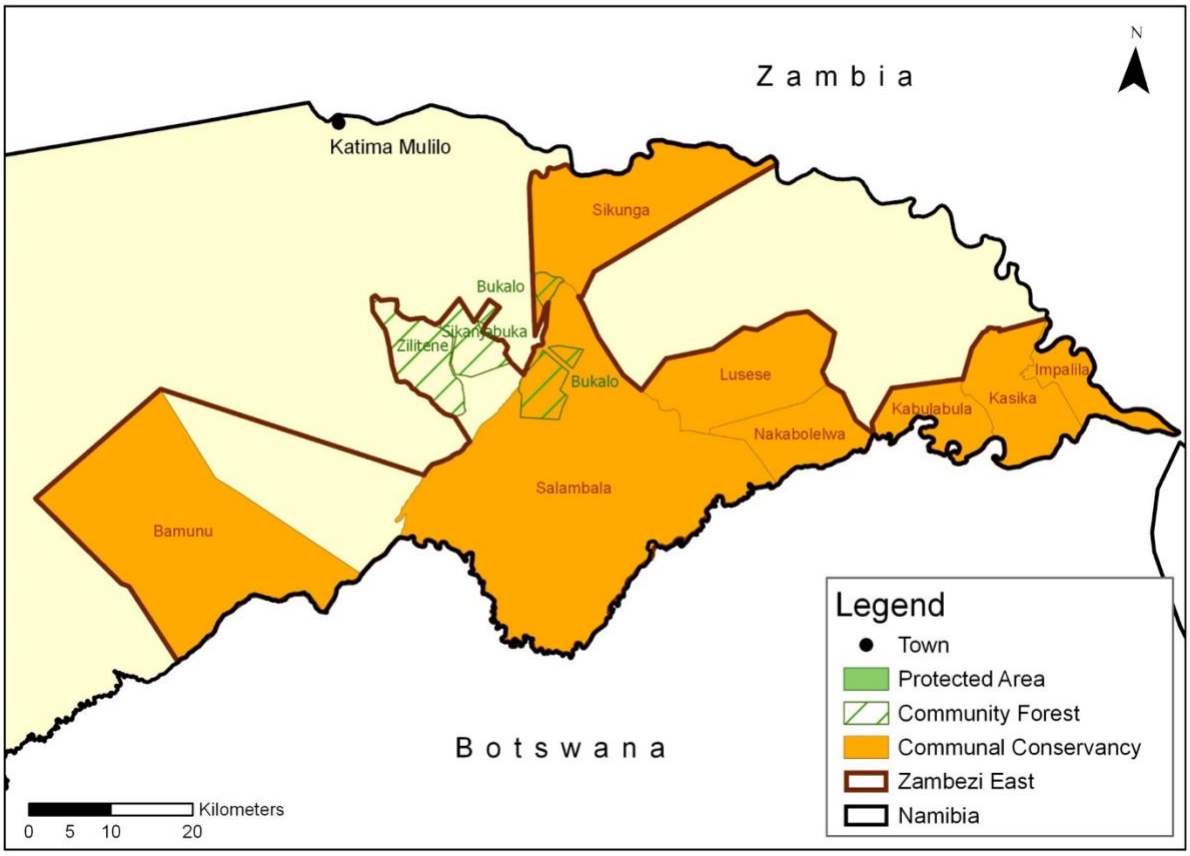

Figure 3: Map of the Zambezi East Landscape

4.3.1 Location & size

The total size is 2,869km^2 and it shares borders with Zambia, Botswana and the Zambezi West Landscape. The landscape covers sections of 4 out of the 8 of the constituencies of the Zambezi Region i.e. Sibbinda, Katima Rural, Kabbe South and Kabbe North. Eight conservancies (Bamunu, Salambala, Nakabolelwa, Lusese, Kabulabula, Kasika and Impalila) and 3 community forests (Bukalo, Zilitene and Sikanjabuka) are found in the landscape. The area is identified as one of the key wildlife corridors and dispersal routes between Botswana, Angola and Zambia and for this purpose, forms part of the Kavango Zambezi Transfrontier Conservation Area[1] (KAZA TFCA).

4.3.2 Population

Landscape forms part of the Zambezi Region where an estimated 55% of the population is in age group of 15–59 years with 61% of these urbanized. Younger people are urbanized with the elderly remaining/returning to the rural areas to continue with farming activities. (NSA, 2014). There areas is inhabited by Masubia with Lozi, Mafwe, Mayeyi, Hambukushu and Kwe peoples.

4.3.3 Landscape: Soils and topography

Soils are predominantly Kalahari sandveld mainly of Aeolian sand type mantle and tertiary calcretes and sediments. The topography is characterised by extreme flatness. The Zambezi River runs along the northern boundary of the landscape occasionally feeding the inland lake Liambezi with water throughnthe Bukalo channel. The low-lying eastern flood plains are

[1] KAZA TFCA, is the world's largest conservation area, spanning five southern African countries; Angola, Botswana, Namibia, Zambia and Zimbabwe.

prone to seasonal floods when the Zambezi bursts its banks following good rainfalls in the catchment areas.

4.3.4 Rainfall

Annual mean is 348 – 871mm expected 90% of the time while lowest rainfall recorded is 288mm and the highest 1,005mm. Potential evaporation is estimated at >2,500mm per year. The average boreholes depths range between 20-50 meters indicating high water table by Namibian standards. Average yields from boreholes in the study area can be expected to be $4m^3$/hour at depths ranging from 22m to 61m.

4.3.5 Vegetation

Mopane woodlands indesprse with Burkea, Aristida and Terminalia combinations. Dominant species include *Colophospermum mopane, Burkea Africana, Terminalia sericea, Euclea divinorum, Diospyros lycioides, Ximenia americana* and *Croton gratissium*. Grasses are of variable quality, but are generally of low grazing value. The greatest value of this particular vegetation resource is as a source of durable construction wood and an important source of fuel wood.

4.3.6 Wildlife

Wildlife is moves freely across the landscape in the conservancies and also dispersing into the neighbouring Chobe National Park in Botswana. Major species include Cape buffalo, lion, leopard, spottedhyena, cheetah, Capewildog, hippopotamus, crocodile, sitatunga , meerkats, redlechwe, sableantelope, eland, giraffe, common impala, Burchell's zebra, wilde beest and spotted-neckedotter. Sable antelope, giraffe and eland were re-introduced into the area.

4.3.7 Socio-Economics Profile

The Integrated Regional Land Use plan for Caprivi (now Zambezi) earmarked the area for small-scale commercial farming i.e. dry-land crop production and for mixed subsistence farming and controlled commercial grazing. Two farming units have been allocated to a private company - Namibia Agriculture and Renewables.

4.3.8 Land tenure

Largely communal land administered by traditional authorities.

4.3.9 Sources of livelihoods

Agriculture - approximately 26.3% of the population depends on livestock and 52.9% on crop cultivation (NSA, 2012). Livestock owners in this landscape tend to keep larger herds of cattle compared to the western landscape. Typically, households' plant between one and four hectares of mostly mahangu, sorghum and maize through dryland cropping that is dependent on the rainfall for water. Government institutions (schools and clinics), tourism establishments and conservancies provide job opportunities. A regional farmers' association represents the interests of the farmers and is affiliated to the national farmers' union. According to the 2011 Zambezi Regional Profile the main source of energy for cooking, lighting and heating for households in the Zambezi Region was from wood, while only 14% made use of grid electricity for cooking purposes. The majority of households (61.5%) utilised candles for lighting purposes.

4.3.10 Wildlife and tourism

Rich wildlife resources, perennial rivers and lush vegetation makes wildlife-viewing tourism, trophy hunting and fishing activities major activities. Community members earn income from sale of crafts, thatching grass and through cultural villages. There are several tourism establishments in the landscape area.

4.3.11 Climate change vulnerabilities

It is expected that flooding will become more, the onset of the rainy season will also become more variable and dry spells more prolonged. These will affect agricultural activities, making it difficult to decide on when to prepare fields and when to plant. Increased flooding will not only have an impact on agriculture production but will also have impacts on settlements, infrastructure provision and health. Increased flooding in the Zambezi Region will lead to more agriculture land being lost for longer periods, growing periods will be shorter and yields will therefore be lower. On the positive side, increased floods will lead to increased fertility of the floodplains as sediments and organic matter are carried by the floods.

4.3.12 Infrastructure

The Trans-Caprivi Highway links region with the rest of the country as well as with Zambia, Botswana, Democratic Republic of Congo and Zimbabwe with Ngoma and Wenela border posts serving as major international border facilities. The regional airport, Mpacha, at Katima Mulilo has the international status and handles Air Namibia's scheduled flights from Windhoek to Katima Mulilo four times a week.

The Rural Electrification Programme of the Ministry of Mines and Energy (MME), together with NamPower, has implemented a number of rural electrification projects in the Zambezi Region including in the landscape under discussion. NamWater and the Ministry of Agriculture, Water and Forestry (MAWF) under the Directorate of Rural Water Supply, are responsible for providing water to rural communities. NamWater supplies water in bulk mostly to urban centres while the MAWF is responsible for rural water supply.

4.3.13 Challenges

The riverine ecosystem (influence by river systems) supports rich vegetation, abundant water, fish and tourism, the landscape is able to sustain rich agricultural production, with challenges ranging from unsustainable practices on land, to inadequate infrastructure and inadequate capacity and low capital base for improving agriculture, water and tourism development.

4.3.14 Intervention

To consider looking at enhancing management practices that improve agricultural productivity, as well as enterprises in fish and tourism development, as well as how to enhance capital base. Also to consider investment strategies that would enhance climate resilient agricultural enterprises – Conservation Agriculture, alternative energy for water and other enterprises, enhancing value chain development, infrastructure, partnerships and knowledge management.

3.4 Zambezi West Landscape

The landscape is renowned for being a seasonal wildlife migratory route, which makes it a core wildlife management area with rich wildlife tourism development as key source of community livelihood support. Low levels of agricultural production exist, though not as in Zambezi East landscape. Conservancies in the landscape include Mayuni, Balyerwa, Kwando, Dzoti, Mashi, Sobbe, Wuparo, influenced by the rivers Linyanti and Kwando/Cubango.

- The total size is 5,499 km^2.
- It borders Zambia and Botswana, Mudumu and Nkasa Rupara National Parks,
- It covers seven (7) conservancies namely (Kwando, Mayuni, Mashi, Sobbe, Balyerwa, Wuparo and Dzoti) and
- Four (4) community forests.
- The area is identified as one of the key wildlife corridors and dispersal routes between Botswana, Angola and Zambia and for this purpose, forms part of the Kavango Zambezi Trans frontier Conservation Area (KAZA TFCA). KAZA TFCA.
- It is the world's largest conservation area, spanning five southern African countries; Angola, Botswana, Namibia, Zambia and Zimbabwe.

Socio-Economics Profile: The Integrated Regional Land Use plan for Caprivi (now Zambezi) earmarked the area for small-scale commercial farming i.e. dry-land crop production and for mixed subsistence farming and controlled commercial grazing. Two farming units have been allocated to a private company - Namibia Agriculture and Renewables.

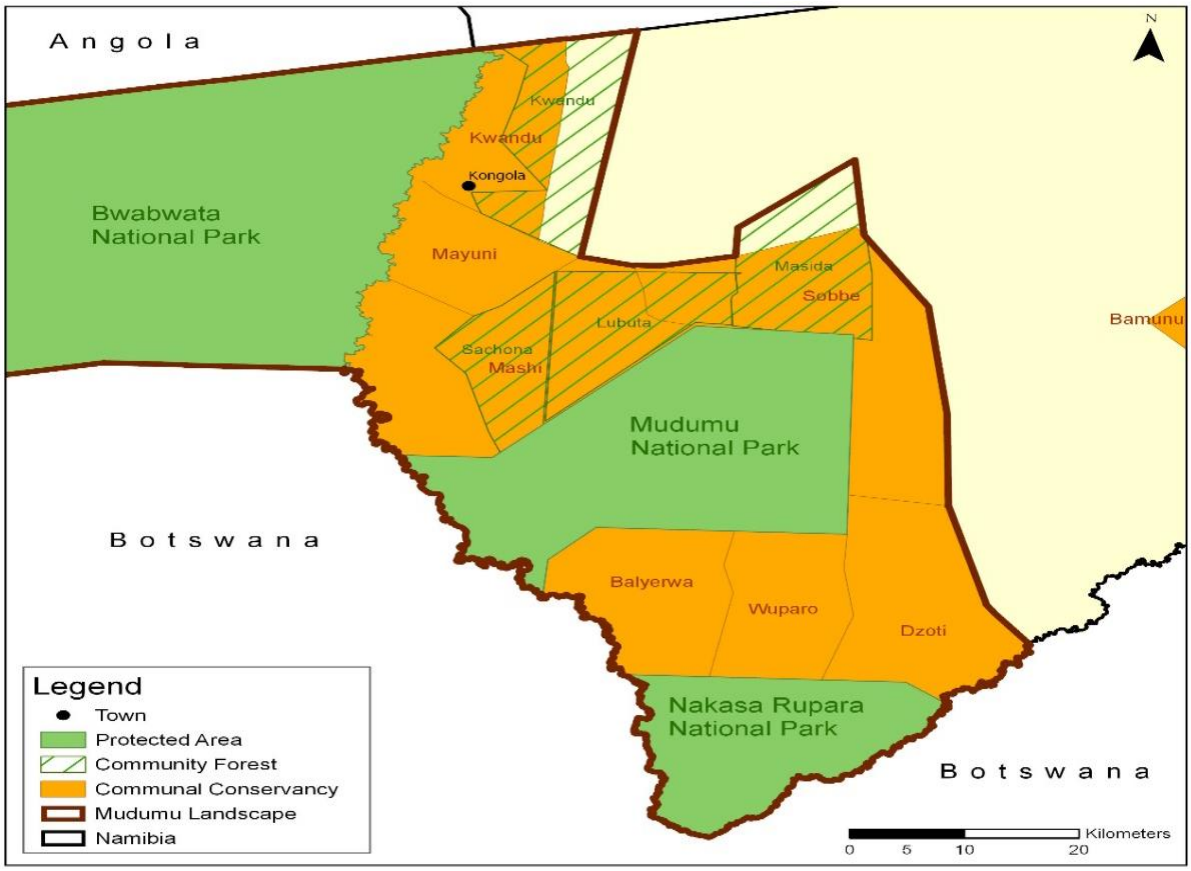

Figure 4: Map of the Zambezi West Landscape

3.4.1 Location & size

The total size is 5,499 km^2. It borders Zambia and Botswana, Mudumu and Nkasa Rupara National Parks, covers 7 conservancies (Kwandu, Mayuni, Mashi, Sobbe, Balyerwa, Wuparo and Dzoti) and four community forests. The area is identified as one of the key wildlife corridors and dispersal routes between Botswana, Angola and Zambia and for this purpose, forms part of the Kavango Zambezi Transfrontier Conservation Area[2] (KAZA TFCA).

3.4.2 Population

Kongola and Judea Lyaboloma Constituencies form the core of the landscape with population densities ranging from 1.4 to 3.2 persons per km² respectively. Landscape forms part of the Zambezi Region where an estimated 55% of the population is in age group of 15–59 years with 61% of these urbanized. Younger people are urbanized with the elderly remaining/returning to the rural areas to continue with farming activities. (NSA, 2014). There areas is inhabited by Mafwe, Mayeyi, Hambukushu and Kwe communities. Kwe are regarded as vulnerable minorities.

3.4.3 Landscape: Soils and topography

Soils are predominantly Kalahari sandveld mainly of Aeolian sand type mantle and tertiary calcretes and sediments. Flat plains and ancient longitudinal dunes presently covered by vegetation are also common features. The topography therefore is characterised by extreme flatness with no significant drainage system to either the Kwando or Linyanti rivers.

3.4.4 Rainfall

Annual mean is 348 – 871mm expected 90% of the time while lowest rainfall recorded is 288mm and the highest 1,005mm. Potential evaporation is estimated at >2,500mm per year. The average boreholes depths range between 20-50 meters indicating high water table by Namibian standards. Average yields from boreholes in the study area can be expected to be 4m^3/hour at depths ranging from 22m to 61m.

3.4.5 Vegetation

Mopane woodlands indispose with Burkea, Aristida and Terminalia combinations. Dominant species include *Colophospermum mopane, Burkea Africana, Terminalia sericea, Euclea divinorum, Diospyros lycioides, Ximenia americana* and *Croton gratissium*. Grasses are of variable quality, but are generally of low grazing value. The greatest value of this particular vegetation resource is as a source of durable construction wood and an important source of fuel wood.

3.4.6 Wildlife

Wildlife is largely concentrated in the 2 protected areas but increasingly is also distributed in the conservancies and areas outside the parks (Chase 2009). Major species include Cape buffalo, lion, leopard, spotted hyena, cheetah, Cape wild dog, hippopotamus, crocodile, sitatunga, meerkat, red lechwe, sable antelope, eland, giraffe, common impala, Burchell's zebra, wildebeest and spotted-necked otter. Sable antelope, giraffe and eland were re-introduced into the area.

[2] KAZA TFCA, is the world's largest conservation area, spanning five southern African countries; Angola, Botswana, Namibia, Zambia and Zimbabwe.

3.4.7 Land tenure

largely communal land administered by traditional authorities with the exception of the 2 national parks mentioned earlier.

3.4.8 Sources of livelihoods

Agriculture - approximately 26.3% of the population depends on livestock and 52.9% on crop cultivation (NSA, 2012). Typically, households' plant between one and four hectares of mostly mahangu, sorghum and maize through dryland cropping that is dependent on the rainfall for water. Regional farmers' association works for the interests of the farmers and is affiliated to the national farmers' union. Government institutions (schools and clinics), tourism establishments and conservancies provide job opportunities. According to the 2011 Zambezi Regional Profile the main source of energy for cooking, lighting and heating for households in the Zambezi Region was from wood, while only 14% made use of grid electricity for cooking purposes. The majority of households (61.5%) utilised candles for lighting purposes.

3.4.9 Wildlife and tourism

Rich wildlife resources, perennial rivers and lush vegetation makes wildlife-viewing tourism, trophy hunting and fishing activities major activities. Community members earn income from sale of crafts, thatching grass and through cultural villages. There are about 3 tourism establishments in the landscape area.

3.4.10 Climate change vulnerabilities

It is expected that flooding will become more, the onset of the rainy season will also become more variable and dry spells more prolonged. These will affect agricultural activities, making it difficult to decide on when to prepare fields and when to plant. Increased flooding will not only have an impact on agriculture production but will also have impacts on settlements, infrastructure provision and health. Increased flooding in the Zambezi Region will lead to more agriculture land being lost for longer periods, growing periods will be shorter and yields will therefore be lower. On the positive side, increased floods will lead to increased fertility of the floodplains as sediments and organic matter are carried by the floods.

3.4.11 Infrastructure

The Trans-Caprivi Highway links region with the rest of the country as well as with Zambia, Botswana, Democratic Republic of Congo and Zimbabwe. The C49 road was recently upgraded from Lisle -Linyanti-Kongola Singalamwe road (212km) to a bitumen road and links the landscape area with the regional nucleus of Katima Mulilo where the regional airport, Mpacha, is located. Air Namibia has four scheduled flights from Windhoek to Katima Mulilo per week from this facility.

The Rural Electrification Programme of the Ministry of Mines and Energy (MME), together with NORED, has implemented a number of rural electrification projects in the Zambezi Region including in the landscape under discussion. Ministry of Agriculture, Water and Forestry (MAWF) under the Directorate of Rural Water Supply, are responsible for providing water to rural communities.

3.4.12 Key challenges

Some of the key challenges include high levels of Human-Wildlife Conflict with high financial costs from human-wildlife interactions.

3. 4.13 Intervention

Possible intervention will aim at strengthening mechanisms (visions, aspirations and strategies) for mitigating Human-Wildlife Conflict – enhancing conservancy management efficiency/performance, increasing evidence-based systems for monitoring, reporting and responding, enhancing conservancy and landscape capacity, and knowledge and institutional coordination. Also to consider investment strategies with potential to strengthen mitigatory measures, wildlife-tight infrastructure, education and knowledge regarding human-wildlife co-existence.

5. Management Strategies for CLUSTER 2

1. Develop community or constituency adaptation strategies: a first step in addressing climate change is to identify the problem and then develop a systematic plan of how to deal with the challenge. This is best done with community members or even at a constituency level.

2. Land-use planning and promotion of climate-compatible land use and associated production systems: land-use options that are better adapted to the prevailing variable and dry sub-humid climates of northern Namibia should be promoted. A shift from rain-fed and even irrigated small-scale crop production or livestock production to wildlife-based production systems is an example that might be useful in the Northern regions, as demonstrated by the creation of conservancies and community forests.

Conservation-Agriculture and more diversified rural land-use systems, such as promoting agro-silvo- pastoral uses may provide practical coping mechanisms. Formal and collective land-use planning can help farmers manage resources better and reduce their vulnerability to climate change.

3. Improved crops, food security and nutrition: given the projected future climate scenarios**,** it is unlikely that Namibia will ever be fully food self-sufficient. Farmers need to be flexible and able to adapt crops from season to season.

Additionally, promoting vegetable gardens for improved household nutrition can be a powerful strategy. Green leafy vegetables and fruits are important for healthy diets and contribute essential minerals and vitamins to a largely meat-based diet.

4. Water management: water conservation is a top priority of adaptation actions in northern regions where water is already a scarce resource. Appropriate water harvesting initiatives and storage capacities could be developed to take advantage of occurrences such as the large rainfall run-off from flood events and could potentially be used during lower rainfall seasons. Applying conservation tillage methods can help improve soil water content as well as soil nutrient status, in particular.

5. Integrated silvo-pastoral systems: in the northern Namibia, fruit trees are interspersed on cropland and should be conserved in woodlands in other areas as well, as these natural resource products can provide additional or alternative food. This is especially important during times of drought. This strategy also promotes environmental sustainability. Investing in planting and rearing fruit trees is a very strategic adaptive measure and could potentially be extended into the eastern woodlands.

6. Flexible grazing areas: seasonal movement of livestock is generally advocated as an appropriate range management tool in dryland areas – but also applies to areas where seasonal flooding is common. Devising well-planned, integrated animal husbandry and management systems throughout the regions will provide useful opportunities for climate adaptive grazing management. It is clear that the regions experience grazing shortages during periods of too much rain as well as during drought. It is important that the existing land be sustainably managed and rehabilitated to ensure that increasing livestock numbers of both small and large stock can be maintained. Groundwater availability for providing stock with drinking water is of particular importance.

7. Prevention of land degradation and investing in rehabilitation: land degradation is a major problem in most of Namibia's northern regions, and is particularly pertinent in highly populated northern Oshana, western Ohangwena and along the main road in Oshikoto. Land degradation seriously undermines adaptive capacities. Any investment in sustainable land management (SLM) and rehabilitation of degraded areas will also have climate change adaptation benefits.

8. Using appropriate livestock breeds and investing in animal health: different livestock types and breeds have different adaptive capacities. Farmers can select breeds that are better adapted to prevailing climatic conditions, i.e. warmer and drier climates or more humid situations. New breeds may be better adapted to increased temperatures (a crossbreed between Sanga and Brahman is currently being tested), or traditional breeds could be improved to yield better production levels. It is also important to investigate breeds that are more resistant to newly occurring animal diseases. Healthy animals perform better and thus focussed investment in animal health will be an advantage.

9. Updating of Integrated Community-forestry areas and or conservancies' Management Plans: this process will assist communities and state to better manage forest These alternative land uses or land management forms potentially generate income and raise the value of non-timber forestry and biodiversity products and the sustainable use of wood as well as grazing. Some wildlife species, for example, can thrive in drier and hotter climates and may change their usual distribution ranges naturally with changing rainfall patterns. They are generally better adapted to the highly variable local conditions than livestock, and can be utilised commercially – as tourist attractions, meat sources and for commercial hunting.

10. Managing veld fires*:* the woodlands of northern Namibia regions are already prone to veld fires and drier and hotter climates may lead to increased fire occurrence and threats. Methods to prevent fires and improve management of wildfires when they do occur, can be highly effective and need to be investigated and invested in through strong community organisations such as community forests or conservancies.

11. Settlements and land uses outside of flood-prone areas*:* Northern regions are particularly densely populated and some of Namibia's largest urban settlements, such as Oshakati, Ongwediva and Ondangwa are situated in flood-prone areas. Although it is common knowledge that the oshanas periodically fill up with flood waters from the catchment in Angola, people often expand activities and even settlements into these flood-prone areas.

12. Flood resilient buildings*:* in flood-prone areas it may be necessary to re-think the way houses are constructed. Other ways of protecting houses from flooding would be to continue building on higher land areas, where available, and to build protective walls and stone dykes around houses. Important public infrastructure such as clinics and schools should undergo detailed flood safety checks and appropriate improvements should be made with community involvement. New buildings should undergo a 'climate risk' check, and be situated in appropriate areas with relevant building precautions.

be converted into real benefits in terms of large-scale fresh water storage, for example.

13. Personal health actions*:* there are a number of things that can be done for increased personal health. To guard against malaria, for example, it is important to be responsible about using mosquito nets and also invest in covering windows and doors with netting. Critical medication should be stored at home, to ensure that even in flood situations, when access to the nearest health facility may be cut off, sufficient supplies are available. Ablution facilities should be established and utilised. They must be built in such a way that they do not pose a health risk under flood conditions, increasing the potential of diseases such as cholera.

14. Improved Early Warning Systems (EWS) and information on CC and CCA*:* in all northern Namibian regions, as with most rural communities, it is clear that there is a need for basic information on climate change and adaptation.

6. Investment Plans per Landscape

Deliverables: Stakeholder meetings, consultations, enhanced consensus and adoption of key investment potentials and their distribution modalities, as well as approaches for managing them.

Deliverable 3: Identification of innovative approaches and technologies for support through EbA project for investment funding

Outcomes:

a) Facilitate identification and adoption of cost-effective (cost-saving) and climate-smart initiatives for enhancing community resilience against climate change vulnerabilities
b) Facilitate cost and benefit analysis of initiatives and determining of viability, profitability and implications
c) Support development of funding access mechanisms (business plans, funding proposals,)

Deliverables: List of potential projects, with business plans and funding proposals (4 per landscapes)

Deliverable 4: Compile activity report on enhanced consensus and decisions on adapting Investment potentials and management strategies for the landscapes

Outcomes

a) Draft report detailing functional description of landscapes, updated stakeholder profiles for each landscape, overview of existing investment plans, assessment of challenges and opportunities, profile of potential projects and their management strategies, and recommendations for possible funding.
b) Present report to EbA PMT, EIF and NACSO, and integrate observations accordingly.

6.1 Investment Plans for North-Central Landscape

Priority rating	Project Title	Project Description
1.	Rehabilitation of community water points from diesel machines to solar powered system.	Diesel machines are environmentally unfriendly causing air pollution and expensive maintain thus, solar energy is recommended for as alternative source of energy.
2.	Harnessing the power of nature to mitigate the use of candles and diesel through introduction of a renewable energy project community forests and conservancies while preserving forest resources	This project will look at establishing either a solar plant at identified conservancies or sustainable renewable energy system for 50 households that depends on fossil fuel based and wood for their cooking and livelihood. The idea is to minimize pressure on firewood for cooking and lighting.
2.	Integrated Forest Fire Management Project	Forests plays an important role to sequestrate carbon dioxide. A project looking at cutlines, capacity building on forest management and mitigation measures of forest fires is desired.
3.	Rehabilitation of 8 water points	A combination of borehole rehabilitation and rainwater harvesting to support both rangeland and sustainable livelihoods through livestock farming
3.	Promoting of drought resilient crops and livestock breeds	Drought resilient crops and livestock breeds do not demand much of chemical use or feeds as they are easily adaptable to the local environment and hence less impact on the ecosystem
3	Community Enterprise development projects	Sustainable community investment projects such as poultry farming, harvesting grass for fodder and thatch.

6.2 Investment Plans for Kavango East and West Landscape

Priority rating	Project Title	Project Description
1.	Rehabilitation of 8 community water points from diesel machines to solar powered system.	Diesel machines are environmentally unfriendly causing air pollution and expensive maintain thus, solar energy is recommended for as alternative source of energy.
1	Harvesting thatching grass	Harvesting of thatching grass and store it in safer place. Grass is a product that supports thousands of rural communities' livelihoods and if not harvested it has a potential to veld fire risks that are detrimental to the ecosystems. Construct warehouse for storing thatch grass, one facility in each region
2	Harnessing the power of	This project will look at establishing either a solar

	nature to mitigate the use of candles and diesel through introduction of a renewable energy project at George Mukoya and Muduva Nyangana conservancies while preserving forest resources.	plant at community villages or sustainable renewable energy system for 63 households that depends on fossil fuel based and wood for their cooking and livelihood. The ideas is to minimize pressure on firewood for cooking and lighting
2.	Plantation of Devils claws	Restoration of devils' claws in conservancies and community forests.
3.	Integrated Forest Fire Management Project	Forests plays an important role to sequestrate carbon dioxide. A project looking at cutlines, capacity building on forest management and mitigation measures of forest fires is desired.
3.	Rehabilitation of 5 water points	A combination of borehole rehabilitation and rainwater harvesting to support both rangeland and sustainable livelihoods through livestock farming
3.	Promoting of drought resilient crops and livestock breeds	Drought resilient crops and livestock breeds do not demand much of chemical use or feeds as they are easily adaptable to the local environment and hence less impact on the ecosystem

6.3 Investment Plans for Zambezi East Landscape

Priority rating	Project Title	Project Description
1.	Management of sustainable water flow to support ecosystem integrity and livelihood.	Sustainable management of wetlands and floodplains for maintenance of water flow and quality for the Chobe/Zambezi River systems and other tributaries. This project identifies river flow natural channels that are either disturbed by human development or natural such as sand pilling that disturbs water floor. The communities will include aquaculture fish farming in these areas.
1	Eco-Enterprise Adaptation Investments	Beekeeping, crafts, eco-tourism etc
1.	Integrated Agroforestry and livelihood diversification at Kabulabula floodplains.	Establishment of diverse agroforestry systems providing flexible livelihood options to cope with increased risk from changed climatic conditions and have potential to support greater biodiversity. This Project will be at Kabulabula and areas of Kasika whereby a 40-hectare piece of land could be identified at two localities. At Kasika and Kabulabula, the local headmen have allocated land for this project, it fences off the land, have

		agroforestry production (fruits and vegetables), aquaculture and apiculture area.
2.	Integrated livestock and wildlife management in four community conservancies through the establishment of a meat abattoir	Salambala conservancies receives annual culling quotas of their wildlife. The idea is to construct an abattoir that will be shared by the four conservancies and process both meat products from livestock and wildlife sources. This reduces pressure on grazing, rangeland and ultimately ecosystems.
2.	Integrated Forest Fire Management Project	Forests plays an important role to sequestrate carbon dioxide. A project looking at cutlines, capacity building on forest management and mitigation measures of forest fires is desired.
2.	Rehabilitation of 9 water points	A combination of borehole rehabilitation and rainwater harvesting to support both rangeland and sustainable livelihoods through livestock farming
2.	Promoting of drought resilient crops and livestock breeds	Drought resilient crops and livestock breeds do not demand much of chemical use or feeds as they are easily adaptable to the local environment and hence less impact on the ecosystem.

6.4 Investment Plans for Zambezi West Landscape

Priority rating	Project Title	Project Description
1.	Management of sustainable water flow to support ecosystem integrity and livelihood.	Sustainable management of upland wetlands and floodplains for maintenance of water flow and quality. This project identifies river flow natural channels that are either disturbed by human development or natural such as sand pilling that disturbs water floor. We could include fish farming in these areas.
1	Eco-Enterprise Adaptation Projects	Beekeeping, poultry farming, fish ponds etc
1.	Integrated Agroforestry and livelihood diversification at Linyati village	Establishment of diverse agroforestry systems providing flexible livelihood options to cope with increased risk from changed climatic conditions and have potential to support greater biodiversity. This Project could be at Linyanti and areas of Kongola whereby a 20-hectare piece of land could be identified at two localities. At Linyanti, the Induna has allocated land for this project, you could fence off the land, have agroforestry production (fruits and vegetables), bee keeping area.
2.	Harnessing the power of nature	This project will look at establishing either a

	to mitigate the use of candles and diesel through introduction of a renewable energy project at Maunga while preserving forest resources	solar plant at community villages or sustainable renewable energy system for 63 households that depends on fossil fuel based and wood for their cooking and livelihood. The ideas is to minimize pressure on firewood for cooking and lighting.
2.	Integrated livestock and wildlife management in four community conservancies through the establishment of a meat abattoir	Conservancies together with the three adjacent ones receives annual culling quotas of their wildlife. The idea is to construct an abattoir that will be shared by the four conservancies and process both meat products from livestock and wildlife sources. This reduces pressure on grazing, rangeland and ultimately ecosystems.
3.	Integrated Forest Fire Management Project	Forests plays an important role to sequestrate carbon dioxide. A project looking at cutlines, capacity building on forest management and mitigation measures of forest fires is desired.
3.	Rehabilitation of 13 water points	A combination of borehole rehabilitation and rainwater harvesting to support both rangeland and sustainable livelihoods through livestock farming
3.	Promoting of drought resilient crops and livestock breeds	Drought resilient crops and livestock breeds do not demand much of chemical use or feeds as they are easily adaptable to the local environment and hence less impact on the ecosystem

6. Recommendations

a) Funding guidelines to be developed and shared with CBOs and targeted grantees;
b) Feasibility studies to be conducted for all potential Investment Activities;
c) Value addition on the enterprises such as honey production, devils' claw processing, marula oil production and game meat should be locally executed/processed.
d) Validation meetings with identified communities during stakeholders' consultations;
e) To strengthen the genotype of local farmers ,Nguni breeds need to be considered as an adaptation mechanism for livestock and rangeland management projects.Retrofitting and rehabilitation of boreholes to address water scarcity in target landscapes with carbon neutral environmentally friendly solar water pumping and storing facilities should not be done as a stand-alone activity.
f) The tourism aspect needs to be taken into consideration since it is a large contributor to local employment and income.
g) Conservancies with joint venture contracts needs to be assisted with capacity building trainings on tourism business management trainings. The partnerships between parties involved is not conducive and at times without a proper exit strategy thus institutions who support the communities needs to build that component within their submissions.

This will allow communities to manage their contracts and partnerships and great revenue for reinvestments.

Table 1: Community consultation (Landscape-level)

Deliverables	When
1. Inception meeting with EIF/MEFT	Detailed concept and work plan. This includes an agreed stakeholder list for consultations.
2. North-Central Landscape (Meeting in Ondangwa)	12th – 23th September 2021 - Community meetings with key local CBOs, government officials responsible for extension services related to Integrated Landscape Management, Agriculture, Tourism, Natural Resource Management. This process served to identify ILM management strategies and investment initiatives per landscape based on a prioritisation process.
3. Kavango West Landscape (Meeting in Nkurenkuru)	
4. Kavango East Landscape (Meeting in Rundu)	
5. Zambezi West Landscape (Meeting in Mayuni)	
6. Zambezi East Landscape (Meeting in Salambala)	
7. Zambezi East Landscape (Meeting in Katima Mulilo)	
8. Validation Workshop	October 2021 - Refined strategy, implementation model, and proposed investment plan