NAMIBIA WATER SECTOR SUPPORT PROGRAM (NWSSP)

SUMMARY OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

NAMIBIA

November 2019

Programme: Namibia Water Sector Support Program (NWSSP) – Phase 1

Country: Namibia

Program Number: P-NA-E00-005

1. BACKGROUND TO THE PROGRAM

1.1 Introduction

The Government of the Republic of Namibia through the Ministry of Finance and the Ministry of Agriculture, Water and Forestry (MAWF) has approached the African Development Bank to support the implementation of the Namibia Water Sector Support Program (NWSSP). The aim of the program is to increase access, quality, security and sustainability of water supply and sanitation services in Namibia. The program implementation is planned in two phases; The Phase I which is planned to cover all the 14 regions of Namibia is scheduled to be implemented in the next 5 years (2020 – 2025) and Phase II immediately after the completion of Phase I. Phase I is intended to address short term, immediate water solutions and Phase II will focus on long term solutions to the water shortage. Twenty-five sub-projects are proposed under NWSSP.

1.2. Program, Objectives and Components

Namibia is the driest country in the Sub-Saharan Africa (SSA). The frequent occurrence of prolonged droughts has threatened the water security. This has severely affected the water supply both in rural and urban centres across the country, creating a strong need for the government to invest in the water and sanitation sector. Due to the severity of the situation, the Government of Namibia, approached the African Development Bank with a list of mixed short term and long-term water solution projects for funding. Several high level meetings were organized between the Bank and the Government of the Republic of Namibia to discuss possible interventions in the water sector. Development partners working in Namibia were also engaged and appraised by the Bank and the GRN on the proposed interventions

The proposed program is designed to enhance water security for human consumption, agriculture (livestock) and industrial development in Namibia.

To achieve the above objective, the proposed NWSSP will focus on four components: i) Climate-resilient bulk water infrastructure development implemented by NamWater, ii) Wastewater treatment and reclamation implemented by City of Windhoek, and iii) Rural water supply and sanitation implemented by MAWF and the cross-cutting soft component iv) Institutional capacity building and program management aimed at improving the implementation of NWSSP. The table below shows the expanded NWSSP Components.

No.	Component	Details
1	***Climate Resilient Bulk Water Infrastructure Development***	- Rehabilitation and expansion of critical and urgent major water bulk water infrastructure including, water treatment plants, conveyance systems, canals, and pipelines
2	***Climate Resilient Sanitation Infrastructure Development*** - *Wastewater treatment and reclamation*	- Rehabilitation, upgrading and expansion of critical and major sewerage networks, wastewater treatment and reclamation systems in Windhoek city.

No.	Component	Details
3	***Rural Water Supply and Sanitation***	- Construction of Water Supply Schemes, including upgrading of purification plants, construction of tanks, distribution lines with manifolds and water points. Strengthening WASH "water, sanitation and hygiene" service delivery through advocacy, sensitization, promotion of decentralized sanitation & hygiene education, - Development of gender responsive training and promotional material, - Construction of climate resilient inclusive sanitation facilities for vulnerable people who are not able to access or afford a sewerage connection., undertake WASH Friendly school campaign (hand washing and sanitation facilities, responsive to gender and disability), integration of the Leave No-one Behind" (LNOB)in the rural areas, Community Led Total Sanitation (CLTS) & Sanitation Marketing.
4	***Institutional Strengthening and Capacity Building and Program Management***	- Enhance the capacity of the sector institutions (MAWF, DWAF, NamWater and City of Windhoek) - Inter-sector coordination, especially between line sectors (environment, health, water supply and sanitation, nutrition, education, local economy and local governments authorities - Support to Monitoring & Evaluation (M&E) and Information Systems and accountability frameworks to track progress - Preparation of studies for Phase II projects - Decentralization and strengthening local level management' - Community sensitization and mobilization including formation and training water committees, review and update of the Community Based Management (CBM), updating of the IWRM Plan, development of the country wide water master plan, mainstreaming Gender, Environment, Climate Change & Cross Cuttings Issues - Support to Environmental Department to enhance its capacity for monitoring environmental and social issues during and beyond project implementation, Operationalising Water Resources Monitoring Network - Training of national, and municipal staff in sector investment framework, water resources, sanitation and environmental health operationalization of gender guidelines on Water sector - Skills training and empowerment of women and youth - Provision of technical assistance for design, supervision and program implementation in accordance with good project management practices, program auditing, project mid-term review; Program M&E and Reporting (including baseline and end-line), Program Implementation Manual.

1.3. Program Environmental and Social Risk Categorization

The preparation of the NWSSP and the categorization of its environmental and social risks was guided by the African Development Bank's policy requirements and the relevant Namibia legal framework. The scope and nature of works to be undertaken under the NWSSP was assessed and it is expected that NWSSP will generate a multitude of socio-economic positive impacts but also some limited Environmental and social negative impacts. The identified likely impacts, which are well articulated in this ESMF can easily be mitigated through a series of appropriate mitigation measures that will be further assessed and instituted in site specific ESMPs. The environmental and social risk characteristics of this project places it in the environmental category 2 according to the Bank's Integrated Safeguard System (ISS). On the basis of the fact that the lending is structured as a program and considering that feasibility studies and detailed designs are still underway for some of the sub-projects' whose sites

are situated in different geographical locations in the country and due to the fact that these sub-projects are far apart, and have different baseline conditions in terms of physical, ecological and social attributes, the Bank and the GRN opted to prepare a Strategic Environmental Impact Assessment (SESA) together with an Environmental and Social Management Framework to identify the likely environmental and social impacts associated with the program and establish appropriate mitigation and measurement measure for the impacts. The use of a SESA/ESMF is aligned to the Bank's Environment and Social Assessment Procedures.

The Namibian Environmental Management Act does not provide for distinct project categorization. However, the initial assessment by the Ministry of Environment and Tourism (MET) considered the project not to pose high E&S risks in a range that would require a full brown ESIA, hence the Ministry recommended that a SESA and subsequently site specific Environmental Management Plan (EMPs) be prepared for the sub-projects within the domain of the Namibian laws. These requirements are commensurate with the AfDB's category 2 requirements.

1.4. The Purpose of the Environmental and Social Management Plan (ESMF)

The purpose of this ESMF, which will form an integral part of the loan covenant, is to describe the processes, procedures and actions that will be followed and taken by the GRN to enhance positive impacts and to avoid, minimize, mitigate, and where necessary compensate/offset negative impacts associated with the NWSSP. The ESMF will also be used to guide the monitoring of the planned activities.

The specific objectives of the ESMF :

- Establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of sub-projects to be financed under the program.
- Specify appropriate roles and responsibilities and outline the necessary reporting procedures for managing and monitoring environmental and social risks related to subprojects.
- Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF.
- Establish project funding required to implement the ESMF requirements.

1.5. Public disclosure requirements.

Namibian Environmental Management Act (EMA) of 2007 makes public review of Environmental Assessment Reports mandatory but is silent on disclosure of the documents. The absence of this provision in the Namibian environmental law will therefore be addressed by applying the AfDB's requirements for both consultation and disclosure as stipulated in its Disclosure and Access to Information (DAI) policy and ISS. In this regard therefore, ESMF summary will be disclosed by the Bank on its website for 30 days to allow public review and comments

1.6. Relevancy of a SESA to NWSSP

The implementation of NWSSP triggered the need to conduct a Strategic Environmental and Social Assessment (SESA) to determine the effects of the program on the downstream environment and to establish appropriate mitigation measures to avoid, reduce, offset, minimise and compensate the impacts. The SESA was prepared as part of the extensive Environmental and Social Assessment (ESA) process to evaluate the broader, upstream, more long-term strategic perspective of the program. The aim is to integrate strategic environmental and social considerations systematically into the preparation and execution of NWSSP particularly into the

preparation of the water sector mater plan which is a major component of the program. The SESA concluded that the program activities are deemed to be of medium environmental and social risk.

The SESA report which remains an integral part of the reports informing the implementation of Environmental and Social requirements on the program provides the country's legal and policy framework that the NWSSP activities should abide as well as the Bank's policies to be complied with. The institutional capacity of the implementing /agencies to manage Environmental and Social Safeguards on the program was assessed to determine the capacity building needs which have eventually been outlined and budgeted for in the various project preparations documents. National key stakeholder consultation and public disclosure was conducted and the outcomes are well reflected in this ESMF summary and the main ESMF report.

2. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

African Development Bank Policies

The design, implementation and monitoring and evaluation modalities for the program have been informed by the Bank's environmental and social policies and guidelines. Considerations are premised on expectations for assessing and addressing environmental and social impacts in line with the Bank's Integrated Safeguards System (ISS) (2013). The overarching goal of the Banks ISS is to preserve and enhance the ecological capital and life-support systems across the continent. Based on the projects feasibility reports, all the five Operational Safeguards (OS) embedded in the ISS were considered and triggered, and these are;

- **Operational Safeguard 1:** Environmental and social assessment, which is the overarching Operational Safeguard that mainstreams environmental and social considerations in all Bank operations
- **Operational Safeguard 2:** Involuntary resettlement land acquisition, population displacement and compensation. Although the land take on the project is limited, OS2 was taken into consideration in the management of the compensation of the 3 individuals whose land in affected by the project.
- **Operational Safeguard 3:** Biodiversity, renewable resources and ecosystem services which reflects the objectives of the Convention on Biological Diversity to conserve biological diversity and promote the sustainable management and use of natural resources.
- **Operational Safeguard 4:** Pollution prevention and control, hazardous materials and resource efficiency, which is intended to achieve high quality environmental performance, efficient and sustainable use of natural resources, over the life of a project
- **Operational Safeguard 5**: Labour conditions, health and safety that basically protects workers right.

The Bank's policy provision on information disclosure and access is also triggered. It requires that all the people residing in the given areas of a project have the right to be informed of the proposed development project in their respective areas.

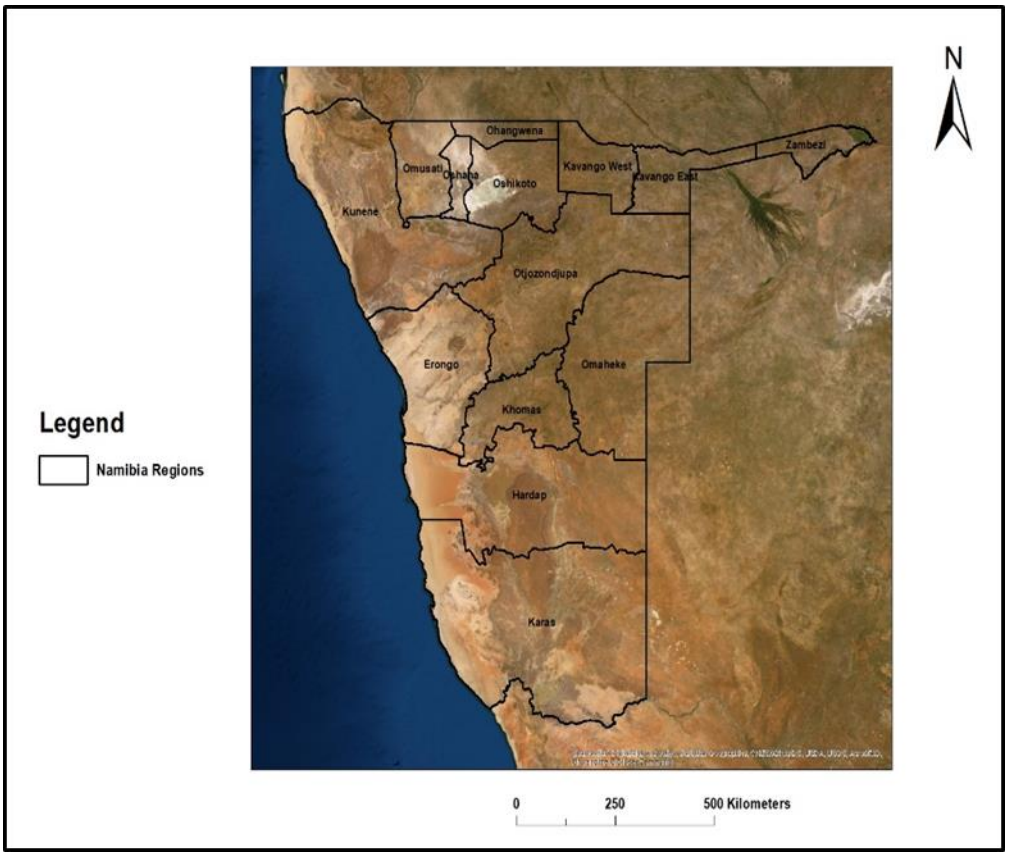
Namibia Policy, Legal and Administrative Framework

The ESMF was prepared with reference to key legal national instruments including the Constitution of the Republic of Namibia, the Environmental Assessment Policy (1995) and the Namibia's Environmental Management Act of 2007. All these pieces of legislation collectively promote sustainable social and economic development through the sound management of the environment and natural resources. Both the Environmental Assessment Policy (1995) and the Namibia's Environmental Management Act of 2007 recognize the trade-offs between economic development and environmental degradation and calls for the use of EIA and environmental monitoring as tools for minimizing impact of development on environment. The NWSSP will

integrate the principles of the environmental policy into the program activities so that work is done in an environmentally responsible manner. Other policies and guidelines of relevance to the project include the National Land Policy of 1998; Water Resources Management Act 2004, the 5th National Development Plan (NDP5), all of which provide sectoral frameworks for the mainstreaming of thematic areas into the development process.

3. ENVIRONMENTAL AND SOCIAL BASELINE DATA

NWSSP phase 1 will consists of 24 water supply projects to be implemented in the 13 regions of Namibia and a sanitation program to be implemented in 14 regions. Namibia lies along the south-western coast of Africa, and is bordered by Angola in the north, Zambia and Zimbabwe in the northeast, Botswana to the east, South Africa in the south, and the Atlantic Ocean to the west. It occupies an area of 824 290 km2. NWSSP activities will have project activities in each of the regions and local communities will benefit from the positive impacts but are also likely to face negative implications of these projects. The map below shows the 14 regions in which NWSSP activities will take place.

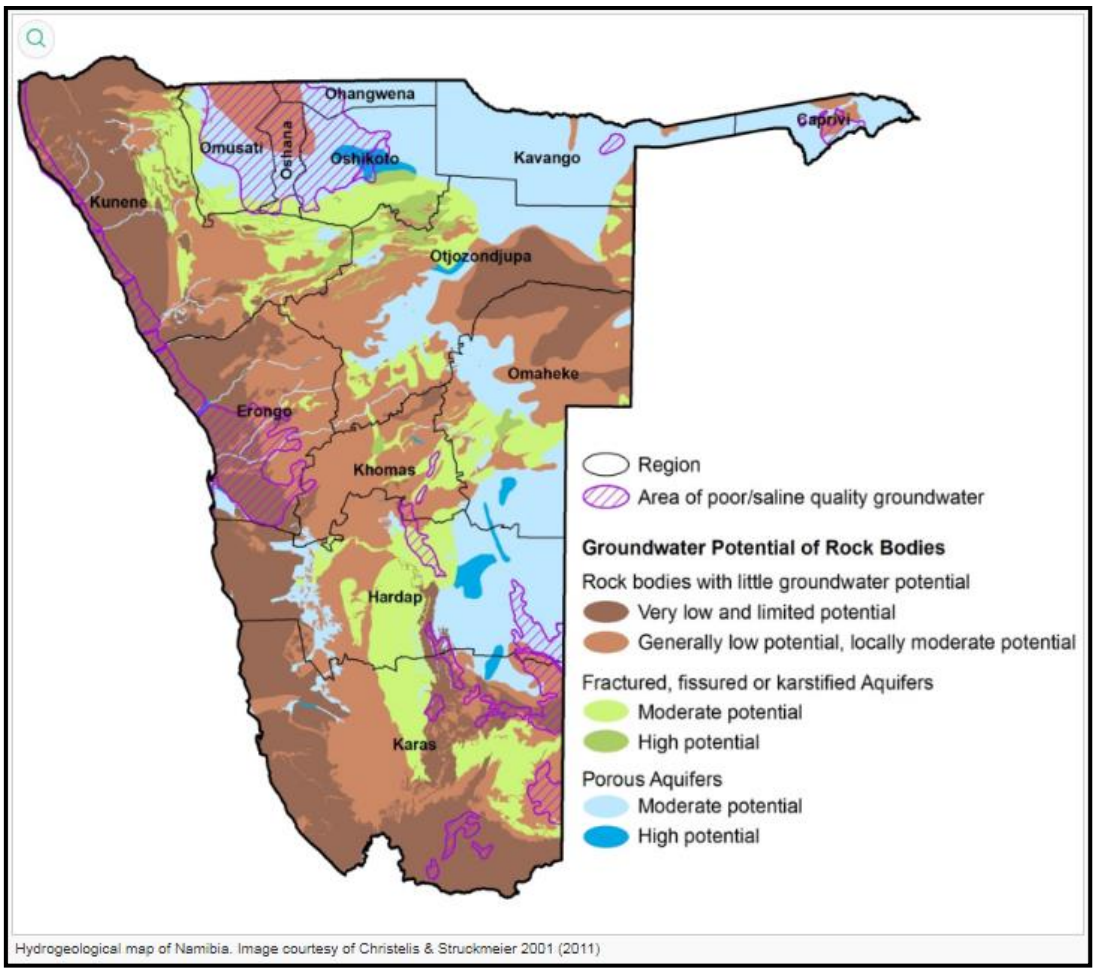


Climate data

Mean annual temperatures for Namibia are below 16 °C along the southern coast, between 20 °C and 22 °C in large parts of the country's interior and the eastern parts, and above 22 °C in the north. Mean annual rainfall for Namibia is estimated to be 285 mm making it the driest country in the region. Of the total rainfall, 83% evaporates, 14% is used up by vegetation, 1% recharges groundwater and only 2% becomes runoff and may be harnessed in surface storage facilities. It is therefore, important that the Government of Namibia invest on water infrastructure that is sustainable, climate resilient to support their growing population during the moments of droughts.

Hydrology/Groundwater Occurrence and Surface Water Resources

The occurrence of groundwater in Namibia is closely associated with the rock formations making up the crust of the earth. Groundwater plays a critical role in the provision of both domestic and agricultural water in Namibia. A significant population in Namibia relies on groundwater as source. It is therefore important to investigate details of the groundwater resources and its quality in relation to NWSSP development. Below is a map showing groundwater potential in Namibia based on the hydrogeological landscape.



Hydrogeological map of Namibia. Image courtesy of Christelis & Struckmeier 2001 (2011)

In terms of groundwater, Namibia has been divided into 12 hydrogeological regions unlike the 11 surface river basins. Several NWSSP sub-projects will use groundwater as the source of water. The map above shows that in regions around Karas and Hardrap it would be difficult to exploit groundwater hence there is need to convey water from surface water resources over long distances. Regions in the North can utilise groundwater because there have good reserves. Groundwater can be conveyed from these regions to the central regions where both surface and groundwater resources are scarce. Namibia has 11 surface river water catchments that supply huge amounts of water for both human consumption and economic activities across the country. Many NWSSP projects will utilise the surface water resources. The table below shows data about the surface water resources and their regional location.

Region	Surface Water Resources/Catchment	Main Water users
Erongo	Ugab-Huab catchment; which is mainly Ugab and Huab rivers. Water comes from ephemeral rivers, boreholes and wells. NWSSP sub-projects will use	Water is used mainly for domestic and small scale farming. Livestock also use huge quantities of water. Mines also use a large portion of water in this region (Navachab, Rossing and Langer Heinrich

Region	Surface Water Resources/Catchment	Main Water users
	both surface and groundwater resources in this region. Swakop-Omaruru Catchment: Omaruru Delta that supply water to Omaruru town and coastal towns (Swakopmund and Walvisbay)	Mines uses its water for its gold (Navachab) and uranium production.)
Hardap and Karas	Orange fish and Tsondab-Koichab Catchments; basin is bordered by the Atlantic Ocean on west, with the Kuiseb and Orange Fish river basins. The region is among the driest hence the need for NWSSP intervention is high.	Water use is mainly domestic and livestock and wildlife use (Sperrgebiet National Park and Namib-Naukluft park). Private farms pump water from boreholes for household and stock farming (including ostriches and camels) purposes. Approximately 60 farms are found in this area. Water is also used in mines.
Kunene	Lower Kunene Catchment with major supply from Angola northwestern part of Namibia. The region is not covered in the phase one of the NWSSP water supply sub-projects but sanitation facilities will be installed.	The entire land is communal farmland with small-scale livestock farming activities. Tourism plays a major role for the economic development within the basin compared to the situation in the Etosha and Huab-Ugab basins.
Oshana	Cuvelai-Etosha catchment with high potential of rain season surface flooding that can be utilised by NWSSP to provide small scale water infrastructure (Dams)	Domestic and field cultivation but usually rain-fed cultivation. Some water is used for wildlife particularly in the Etosha Park
Khomas	Swakop-Omaruru Catchment: most urbanized and popular tourist destinations in the country. Therefore water is critical needed for economic reasons. Several surface dams are found in this region.	Domestic and highly economic uses (industrial uses in Windhoek). Large-scale commercial farming mostly with cattle and goats. Game farming is also practiced on a commercial basis.
Omusati	Cuvelai-Etosha catchment with high potential of rain season surface flooding that can be utilised by NWSSP to provide small scale water infrastructure (Dams)	Domestic and field cultivation but usually rain-fed cultivation. Some water is used for wildlife particularly in the Etosha Park
Ohangwena	Cuvelai-Etosha catchment with high potential of rain season surface flooding that can be utilised by NWSSP to provide small scale water infrastructure (Dams)	Domestic and field cultivation but usually rain-fed cultivation. Some water is used for wildlife particularly in the Etosha Park
Kavango East and West	Kavango-Omatako Basin - comprises the surface catchments of the perennial Okavango River and its main tributary on Namibian ground, the Omuramba Omatako. Okavango River is a perennial river and forms the northern border of the basin.	Water use is mostly domestic purposes: Towns in the basin include Grootfontein. Subsistence and small-scale farming: this includes both livestock and crop farming with mahangu, maize and sorghum as the main cereals, supplemented with vegetables. Large-scale commercial farming: The basin is a prime farming area, dominated by cattle and goats.

Region	Surface Water Resources/Catchment	Main Water users
Omaheke	Eiseb-Epukiro Catchment - basin spreads across the Kalahari semi-desert into Botswana, it covers Gobabis town and several eastern constituencies. Water comes from surface water collected in excavation dams in the ephemeral water courses and ground water and the most significant aquifer is in the Eiseb 'Graben' area.	Water-use activities in the basin are mostly attributed to large-scale commercial farming activities, supplying water to estimated 450 000 cattle, sheep, goats, donkeys and horses. Towards the eastern part of the basin, borehole water is difficult to access due to thick layers of Kalahari deposits, making it difficult to find water for abstraction
Zambezi	Zambesi-Kwando-Linyanti Catchment- the basin includes the intra-Namibian surface catchments of the Kwando, Linyanti and Zambesi rivers. Water comes from perennial rivers, ephemeral water courses (mulapo's) and groundwater sources.	The majority of the rurally based people survive on fish and crop and stock farming, and surrounding settlements mainly use water for domestic and gardening (vegetables) purposes. There are several irrigation projects in the basin, which include rice and sugar cane farming. The basin is rich in wildlife and game. The Caprivi Game Reserve is protected from uncontrolled hunting.
Otjozondupa	Ugab-Huab catchment; which is mainly Ugab and Huab rivers. Water comes from ephemeral rivers, boreholes and wells. NWSSP sub-projects will use both surface and groundwater resources in this region.	Water is used mainly for domestic and small scale farming. Livestock also use huge quantities of water.

Socio-Economic Baseline

The population estimate for Namibia is 2.4 million with female 51% and male 49%; and with the race is 87.5% black, 6% white and 6.5% mixed race (Legal Assistance Centre, 2017). Of the population 43% lives in urban whilst 57% live in rural areas (Namibia Statistics Agency, 2012). The population growth rate of the country is slowing, having changed from 2.6% between the first census in 1991 and the second census in 2001, to 1.4% between the second census in 2001 and the third census in 2011. This increase in population has put pressure on local water supply sources, thus the need for the implementation of the NWSSP.

Unemployment is particularly acute for rural women. Just over 44% of the female rural labour force was unemployed in 2016 compared to 34% in urban areas (a 10% spread); for men, the 2016 unemployment figures were 34% in rural areas compared to almost 27% in urban areas (a 7% spread) (LAC, 2017; NSA, 2013). Overall, the largest sector of economic activity in both 2014 and 2016 were agriculture, forestry and fishing (29% in 2014 and 20% in 2016), followed by wholesale and retail trade (14% and 10% respectively). Therefore, the provision of water through NWSSP intervention is critical as it boost the economy of Namibia.

In terms of HIV/AIDS and diseases, the reliability of drinking water supplies and improved water management in human settlements contribute to reducing spread of HIV/AIDS, malaria and dengue fever transmission risks (WSSCC, 2004). The compromised immune system of people living with HIV/AIDS can increase their sensitivity to other diseases, such as tuberculosis and heat stress. Furthermore, a reduction in stagnant water storage translates into less breeding places for mosquitoes, reducing Malaria mostly in Zambezi Region. In addition, safe drinking water and basic sanitation help

prevent water-related diseases, including diarrhoeal diseases such as cholera, gastroenteritis, Hepatitis E that has outbreak in the informal settlements of Windhoek, Namibia.

Climate resilient programs

The NWSSP is aimed at addressing impacts of climate change on water supply and scarcity in the different regions across Namibia. The country being one of the hardest hit countries in terms of climate change induced droughts; the country has witnessed devastating effects of climate change on the socio-economic folds of communities. Therefore the intervention in water sector through NWSSP significantly improves the situation. The 2018/ 2019 rainfall season has been extremely poor and was seen in the form of delayed of the rainfall season, sporadic and erratic rainfall patterns as well frequent prolonged dry spells compounded by extremely high temperatures that exacerbated evaporation of the little moisture received.

NWSSP is aimed at addressing challenges facing the country some of which are a result of climate change effects. Climate change has affected the different aspects of the Namibia economy some notable impacts include; livestock losses, reduced grain/crop production and yields, human wildlife conflict migration of animals severe water scarcity due to droughts and increased temperatures. Agriculture, human health and well-being, energy, infrastructure, biodiversity and ecosystems, rangelands are all affected. During the stakeholder consultation process, recommendations on ensuring that there is sustainable water supply to the communities was emphasized as necessary to endure the drought in Namibia; Some communities lack portable water availability. However, it must be noted that the government of Namibia is implementing other initiatives to counter the climate change and shortage of water situation. An example of such of such effort is n regions like Kunene where the government is implementing the conservation techniques like Conservation Agriculture.

4. ASSESSMENT OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS OF SUB-PROJECTS

The program activities are associated with different potential environmental and social impacts (either positive or negative) on the immediate and surrounding receiving socio-economic and biophysical environment. The following tables shows the social, environmental and biological impacts both positive and negative as identified during the Environmental and Social Assessment (ESA) Process

Detailed impact significance rating and analysis was performed and submitted in a separate SESA and ESMF reports. The proposed mitigation and management options in this executive summary are based on the impact significance rating of the SESA report. The significance impact rating process used the International Finance Corporation (IFC 2012) significance impact rating method and the AfDB environmental and social operational safeguard policies.

Table showing the social, biological and environmental impacts identified during SESA study that are associated with program implementation.

Environmental Impacts	Social Impacts		Biodiversity Impacts
	Negative	Positive	
- Vegetation loss - Vehicular Traffic Safety - Noise and vibrations - Dust impact (air quality) - Health and safety - Land disturbances, (pollution of soils and water) - Waste generation - Visual impact - Odour	- Spread of HIV and STIs due to influx of out-of-area people into the project area - Pressure on Resources due to vast influx of out-of-area people into the project area - Loss of assets or access to assets including farmlands - Damage to or intruding of private or public properties - Land Use and land rights issues - Social Intrusion: (impact on the local young women and girls) - Occupational Safety and Health - Loss of assets or access to assets - Loss of income sources, and or means of livelihood - Conflict over limited freshwater resources - Lack of water supply security - Over-exploitation/abstraction of water resources - Involuntary resettlement of people to pave way for the project activities - Lack of capacity building among implmenting agencies to operate and manage project infrastructures - Lack of project coordination among stakeholders - Lack of communities involvement in decision making and mainstreaming of indigenous knowledge in the planning process through consultations	- Economic Productive Time Usage - Community Labour Component - Improved community health - Empowerement of woman and children - Job opportunities - Skills transfer and employment (Construction phase) - Access to safe reliable water and basic sanitation - Permanent Employment and Skills Transfer (Operational and maintenance phase)	- *Biodiversity - (loss, fragmentation and degradation of habitat, and severance of animal migration routes and pathways)* - *Loss of plant species and habitats of conservation interest*

Proposed mitigation and enhancement measures (ESMP)

The following management measures are proposed for the impacts identified to avoid, minimise, offset and compensate the identified negative impacts in the previous section.

Impact	Mitigation/Management measures	Performance indicator	Responsibility
Excessive water abstraction and use	- Apply for and obtain water abstraction and use permits prior activities that use significant amounts of water - Adherence to water volume allocations in the permits as well as permits' renewal according to stipulated periods throughout projects' operations. - Implement grey and wastewater reuse and recycle during construction activities	- Water abstraction and use permits are issued and conditions contained therein are adhered to - Volume of water use for specific activities - Proof/ recording/ quantification of water abstracted on an annual basis - Water resources management awareness in rural and urban communities	MAWF; Department of Water Affairs NamWater
Land use conflicts	- If there are known existing infrastructure in the project areas, the programmes' Public Relations Officer (PRO) should consult with the local communities and their leaders to help in locating buried services such as electricity cables and water pipelines in the area in order to avoid damage.	- On-going engagement and consultation with local leaders and communities - No records of land use conflicts	Ministry of Land Reform Local Leadership
Cultural or heritage sites	- Consult communities in cases where the sub-project activities pass next to or close to places of cultural value to the communities. - Avoid where possible the heritage and cultural sites - Careful site selection and siting of all project components, taking account of community consultation/specialist surveys. - Development of a Cultural Heritage Management Plan covering tangible and intangible (e.g. local traditions and practices) cultural heritage. - Implementation of a “Chance Finds” procedure during construction.	- No record of complaints or conflicts between the communities and implementing agencies or contractors	Local Leadership Ombudsman
Land use permits/agreements and or leaseholds	- The Implementing Agencies (IA) should consult with the landowners and traditional authorities to obtain consent about land issues before construction. - All relevant land permits and leaseholds documents should be obtained from the landowners or authorities.	- No land complaints from landowners and authorities with regards to unfair and unauthorised land uses	Ministry of Land Reform Local Leadership Implementing Agencies (IA)

Impact	Mitigation/Management measures	Performance indicator	Responsibility
	- Proper consultations should be done with the affected landowners and authorities with regards to land use and NWSSP projects.	- All land use agreements and permits should be obtained prior to utilizing the land	
Occupational Health and Safety	- Appropriate personal protective equipment (PPE) for the construction contractors be made mandatory requirement - The Labour Act and its regulations should always be complied with. - Good construction site "housekeeping" and management procedures (including site access). - Risk assessments and emergency response planning to consider impacts on local communities	- Number of injuries recorded	Ministry of Health and Social Services Ministry of Labour Industrial Relations and Employment Creation
Dust impact (air quality)	- Sensitive site selection and siting of project components. - Use of modern equipment meeting appropriate emissions standards, and regular preventative maintenance. - Dust control and suppression measures such as dampening, watering of dust sources, use of vegetation hedges etc. - No use of ozone depleting substances during construction. - Ensure sewage storage and treatment facilities are adequately contained; cover sludge with lime/earth at disposal sites.	- No complaints from the public about excessive dust generation.	Ministry of Environment and Tourism
Vegetation Loss	- All areas of interest should be clearly marked to prevent damage to areas unintended for the projects' footprints. - Where clearing and/or damage is unavoidable, permits for clearing protected plant species should be obtained from the Forestry Department. - With regards to the vegetation on or within proximity of site, the following mitigation measures should be implemented: (a) Even if certain vegetation is found within actual site footprints, this does not mean that it should be removed. Therefore, care should be taken when preparing the site without destroying the vegetation. (b) Vegetation found on the sites, but not on the site infrastructure footprints should not be removed or disturbed in any way but should be left to preserve biodiversity on the site.	- No signs of soil erosion due to soil erosion - Existence of bare surfaces after project work start - Number of tress cut - No disturbance to unmarked areas.	MAWF; Department of Forestry

Impact	Mitigation/Management measures	Performance indicator	Responsibility
	Environmental awareness on the importance of biodiversity preservation should be provided to the project workers.		
Land Disturbances (Water and Soil Pollution)	- Ensure that drainage and discharged wastewater complies with discharge standards and treat wastewater; accordingly, plan discharge of wastewater in accordance with the absorbing capacity of receiving water bodies. - Installation of sewage treatment to meet required standards. - Implementation of standard good wastewater and sewage sludge management procedures, including monitoring quality of receiving waters and soils. - Conserve vegetation along water bodies and near wetlands, especially at wastewater discharge points. - Provide education to local communities and workforce on hygienic conditions and behaviours.	- No complaints of contaminants in the water as a result of construction activities - No visible oil spills on the ground or contaminated spots.	Environmental Control Officer
Noise and vibrations	- Sensitive local access road route selection and siting of construction facilities accompanied where necessary by noise attenuation measures. - Use of modern, well maintained equipment fitted with abatement devices (e.g. mufflers, noise enclosures). - Strict controls of timing of activities, e.g. blasting and other high noise emissions; prohibition on night working. - Observance of seasonal sensitivities (e.g. breeding seasons), and alteration of activity to reduce noise levels at that time.	- No complaints from the public about excessive dust generation.	Ministry of Environment and Tourism Local Leadership
Visual (sense of place)	- Where required, infrastructures should be camouflaged to cause less of a nuisance in project areas. - All the necessary options to improve the aesthetic of the infrastructures should be considered and incorporated in the designs. This should be done so that the water infrastructures blend in with the surrounding areas or at least enhance it for a better appeal to the public.	- No complaints of sight/visual nuisance from the neighbouring landowners or local communities	MET Ombudsman
HIV and AIDS	- The workers should be engaged in health talks and training about the dangers of engaging in unprotected sexual relations which results in contracting HIV/AIDS and other sexual related infections. - Provision of condoms and sex education through distribution of pamphlets. These pamphlets can be obtained from local health facilities.	- Number of new infections recorded linked to project workers.	Ministry of Health and Social Services Operational NGOs like UNICEF

Impact	Mitigation/Management measures	Performance indicator	Responsibility
Solid Waste Generation	- If capacity is insufficient in the temporary storage area on site, additional temporary storage for hazardous wastes, fully bunded and covered, shall be required in order to safely contain the wastes until they can be disposed of safely and legally. - Waste containers shall be stored above ground and under covering. - Domestic waste shall be contained, and storage areas shall be contained to prevent scavenging by local persons or animals.	- No improper disposal of waste on the project sites or in the surrounding areas - Waste is sorted and stored in respective waste containers, i.e. according to waste type	Ministry of Environment and Tourism Environmental Control Officer

5. SUB-PROJECTS SCREENING

As part of the appraisal evaluation process the Bank requires due diligence process throughout the project cycle guided by the Bank's policies and the borrower's national environmental and social management laws and policies.

Out of the five AfDB's Operational Safeguard policies designed to ensure that projects financed by the Bank are environmentally and socially sustainable, the main OS 1 (Environmental and Social Assessment) is trigged by the program. OS1 sets out the Bank's overarching requirements for borrowers or clients to identify, assess, and manage the potential environmental and social risks and impacts of a project, including climate change issues. The assessment covers all the stages of the project, from construction and operation through to closure/decommissioning. The objective is to mainstream environmental and social considerations including those related to climate change vulnerability into Bank operations and thereby contributes to sustainable development in the region.

The specific objectives of sub-projects screening are to:

- Mainstream environmental, climate change, and social considerations into Country Strategy Papers (CSPs) and Regional Integration Strategy Papers (RISPs)
- Identify and assess the environmental and social impacts and risks including those related to gender, climate change and vulnerability of Bank lending and grant-financed operations in their areas of influence
- Avoid or, if avoidance is not possible, minimise, mitigate and compensate for adverse impacts on the environment and on affected communities
- Provide opportunity for stakeholder participation during the consultation process so that affected communities and stakeholders have timely access to information in suitable forms about the Bank operations, and are consulted meaningfully about issues that may affect them; and
- Ensure the effective management of environmental and social risks in projects during and after implementation.

A five-step screening process of sub-projects should be followed, these are:

i. *Step I:* Screening of NWSSP activities and sites (the Bank will conduct screening process of all the 25 sub-projects identifying potential environmental and social impacts, determining their significance, assign the appropriate environmental category, layout the proposal of appropriate environmental mitigation measures).
ii. *Step II:* Assigning the appropriate Environmental Categories: this involve the assignment of the appropriate environmental category to a sub-project activity based on the information provided in the environmental and social screening forms.
iii. *Step III:* Carrying out Environmental Work; After analysing the data contained in the environmental and social screening forms the Bank will make a recommendation to establish whether: (a) no environmental work will be required; (b) the implementation of simple mitigation measures will be enough; or (c) a separate environmental and social management plan (ESMPs) will be carried out to mitigate the impacts. This should comply with the borrower's national environmental assessment and management regulations and laws.
iv. *Step IV:* Review and Approval; Review: the assessment reports (ESMPs) will be reviewed by Ministry of Environment and Tourism (MET) at national level, and at Donor Level by the AfDB.

v. *Step V:* Environmental Monitoring and Follow Up; Environmental monitoring should aim at checking the effectiveness and relevance of the implementation of the proposed mitigation measures. The Bank's Operational Safeguard Specialist would be participating in monitoring and checking compliance in collaboration with the Environmental and Social Consultant that prepared the ESMF/SESA reports and the ESMPs.

6. MONITORING PLAN AND SUB-PROJECT SUPERVISION

The implementing agencies have a responsibility to implement the ESMF and participate in various monitoring programs making sure that the ESMF requirements are met to address specific adverse impacts of their sub-projects. Other government departments and competent authorities will participate in monitoring to ensure that environmental and social issues are addressed properly. Supervision of activities is important because it will allow the various contracted institutions to comply and implement the ESMF.

Monitoring activities are recommended to be done in two parts **internal and external monitoring**.

Internal monitoring (conducted as part of NWSSP implementation) would be applied to various aspects of the ESMF including:

i. The project screening process (to ensure it is working effectively and efficiently)
ii. Environmental and social monitoring of NWSSP sub-projects implementation in terms of:
    - Changes to baseline conditions,
    - Compliance with required protection and compensatory measures, and with recommendations made by environmental and social studies carried out for the project such as ES, ESIA, ESMP,
    - Environmental or social impacts, particularly to ensure that they do not exceed expected limits
iii. Ensuring that necessary safeguard measures have been duly implemented and the efficacy of mitigation measures, and suggesting further mitigation measure to control impacts, where needed; and
iv. Implementation of training and capacity building.

External monitoring should be undertaken as an independent process on a periodic basis (say every 5 years) as part of a periodic review of progress of the overall NWSSP in Namibia.

Areas to be monitored shall include:

- Soils
- Vegetation
- Loss of natural and cultural heritage
- Wildlife
- Marginal lands/fragile ecosystems
- Chemical pollution
- Water resources
- Ambient air quality
- Socio-Cultural Issues
- Noise and Vibrations

ESMF Areas that need Monitoring and the responsibilities

Parameter to be monitored	Where is the parameter to be measured	When is parameter to be monitored/ frequency of measurement or continuous?	How is parameter to be monitored/ type of Monitoring Equipment?	Unit of Measure	Project Phase	Responsibility
Vegetation loss	Area of vegetation cleared	Before commencement of works and after works	Survey area where vegetation is cleared due to construction	No. of trees cut, or sq. meters of grass removed.	Construction	MAWF (Directorate of Forestry), Ministry of Environment and Tourism
Soil erosion	Construction site and surrounding areas	Before and after commencement works	The depth of topsoil removed	m_3	Construction	MAWF Ministry of Environment and Tourism
Loss of farmland, property and crops	Communities where infrastructure is passing	Before and after commencement of civil works.	Area of land lost	Hectare (Ha)	Construction	Ministry of Land Reform, MAWF
Ground water pollution.	Well fields, surrounding communities, construction site	Monthly	Water quality testing	Faecal coliform counts,	Construction and Operation	Ministry of Environment and Tourism, MAWF, Contractors, ESMF Environmental and Social Consultant
Construction site waste and drilling waste	Construction site, surrounding communities	Daily, Weekly and Monthly	Amount of debris	m_3	Construction	Contractor, Ministry of Environment and Tourism, ESMF Environmental consultant
Accidents, health and safety of workers at both construction and operational phase	Construction site	Daily	Record of cases reported and treated	No. of accidents or near miss.	Construction and Operation	Ministry of Health and Social Services (MoHSS), Organisations like RED CROSS, Contractor
Increase of STD and HIV/AIDS due to the presence of construction workers	Local communities	Bi-annual	Record of the cases reported at a local clinic	No. of reported of STDs and	Construction	Ministry of Health and Social Services

Parameter to be monitored	Where is the parameter to be measured	When is parameter to be monitored/ frequency of measurement or continuous?	How is parameter to be monitored/ type of Monitoring Equipment?	Unit of Measure	Project Phase	Responsibility
				HIV/AIDS cases.		
Noise and dust made by vehicles and construction equipment from excavations.	Construction site and Settlements close to construction	During use of heavy machinery, monthly During use of heavy machinery, monthly	Number of times working areas are watered. Use of a noise measuring meter	bd, kg/m^3	Construction	Ministry of Environment and Tourism Contractors
Groundwater over extraction and excessive river water abstraction	River system and Aquifer	Monthly	Reduction of water flows in a river or borehole discharge and recharge measurements	m^3/day	Operation	NamWater and MAWF
Water treatment waste like aluminium sludge is toxic to the environmental.	Surrounding areas	Quarterly	Weigh the waste released	Kg	Operation	NamWater City of Windhoek Ministry of Environment and Tourism
Cross contamination of water in the distribution pipelines	Communities receiving water	Quarterly	pH, turbidity	Faecal coliform counts	Operation	NamWater and MAWF
Contamination of Reservoirs tanks and tanks at the clients' premises.	Surrounding communities	Annually		Faecal coliform counts	Operation	NamWater

Reporting and responsibilities for program ESMF implementation

Auditing of activities and enforcing compliance will be treated as an integral part of the ESMF implementation. The roles and responsibilities of project staff and associated agencies in the implementation of the ESMF will be as follows (refer to table below).

Organisation	Roles and Responsibilities
Implementing Partners - MAWF - NamWater - City of Windhoek	Broad supervision responsibilities of implementing agencies (MAWF and NamWater National Office) include: *At National Level* - Ensure that the required assessment (screening process) and assessment reports and the required management plan(s) (an ESMP and/or stand-alone management plan, as above) are developed, disclosed for public consultation and approved, and management measures are adopted and integrated during sub-projects implementation; - Report, fairly and accurately, on sub-project progress against agreed work plans in accordance with the reporting schedule and required formats to the Bank - Ensure all requirements of AfDB OS and national regulatory/policy frameworks and relevant international standards have been addressed; and - Hold responsibility and accountability to AfDB for overall management of the program, including compliance with AfDB OS. *Regional and Sub-Project Level* - Supervise and manage implementation of measures defined in the ESMF - Assign specific responsibilities for implementation of the ESMF, including monitoring, and community consultations on the draft management plans to a staff member(s) of the MAWF regional offices; the DRWSSC - Maintain relevant records associated with management of environmental and social risks, including updated OSPs, impact assessments, a log of grievances together with documentation of management measures implemented - Report to the National Office on the progress implementation of the ESMF - Ensure that all service providers/contractors are informed of their responsibilities for the day to day compliance with the ESMF; and - Maintain stakeholder engagement and grievance redress mechanisms active.
Technical Assistant	The implementing agencies will appoint a Technical Assistant (TA) to assist on technical project management issues. The main responsibilities of the TA would be: - Monitor implementation of the ESMF and compliance with national and international regulations, and AfDB social and environmental standards - Decision making for the adoption of necessary measures including full integration of management measures within project Outputs and annual work plans - Establish and support GRM mechanism to address any grievances; and - Report to and advise their implementing agencies on the status of ESMF implementation.
African Development Bank (AfDB)	- Provide oversight on all matters related to safeguards - Ensure that the Compliance Review and the Independent Review Mechanism are operational during the lifetime of the projects - Ensure adhere to the OS for project activities implemented using funds channelled through AfDB accounts, and undertake appropriate measures to address any shortcomings

Organisation	Roles and Responsibilities
	- Verify and document that all AfDB OS requirements have been addressed; and - Provide technical guidance on implementation of the ESMF and administrative assistance in recruiting and contracting expert safeguards services (as required), and monitor adherence of each sub-project to the ESMF and AfDB policies and procedures.
The Bank's Environmental and Social Safeguards Specialists	- Annual or more frequent mission visits to ensure compliance with project safeguard requirements. - Review various management reports to monitor progress and identify issues that may arise. - Monitor the implementation in accordance with the Bank safeguard policies and advise on corrective measures as needed.
Environmental and Social Consultant (The Consultant that developed the ESMF and SESA)	- Screening of sub-projects in consultation with MET, MAWF to allow phase two of environmental and social impact assessments of sub-projects - Drafting terms of references for site specific management plans for contractors - Undertaking environmental and social impact assessments of sub-projects - Coordinating, managing and monitoring the implementation ESMPs at national and sub-project level - Reporting environmental performance to MAWF and AfDB (construction) and PM (operations) - Reviewing environmental management content of method statements during construction of Sub-Projects for Contractors - Ensuring that best environmental practice is undertaken throughout the duration of the project - Undertaking checks of the construction site and construction activities - Undertaking checks of maintenance works during operations - Provisioning of environmental awareness/management training and inductions - Responsible for the management, maintenance and revisions of this ESMF and subsequent environmental plans (e.g. Waste Management Plan); and - Timely distribution of any relevant environmental documentation, including revisions to this ESMP, to all construction managers and contractors.
Ministry of Environment and Tourism (MET)	MET as the regulating authority their role in the ESMF implementation is to: - Enforce compliance to specific sections of the ESMF - Monitor compliance to the national environmental laws and regulations - Approve environmental assessments (ESMP) of sub-projects, review the reports and award environmental authorizations; and - Periodic reviews of the separate supporting management documents that constitute this ESMF, i.e. ES, ESIA, ESMP for sub-projects.
Contractor's Responsibility regarding environmental protection	Construction/Rehabilitation Contractors are responsible for: - Undertaking all activities related to environmental protection during construction and rehabilitation works. - During the ESMP preparation phase, potential negative environmental impacts will be identified and implementing agencies will be obliged to ensure implementation of adequate mitigation measures by contractors. - The Contractor appoint a person responsible for environment protection with adequate experience to be responsible for the implementation of all demands of environment protection and the Environment Monitoring Plan implementation. - Ensure compliance to all the environmental and social needs, permitting and licenses (e.g. vegetation clearance permit, water abstraction permit, archaeological permit.) - They will report to TA of respective implementing agencies and to the implementing agencies.

7. ACCOUNTABILITY AND GRIEVANCE REDRESS MECHANISMS

Social accountability will need to be strengthened through the effective GRM. Therefore a Grievance Redress Mechanism (GRM) will be established to provide an effective avenue for expressing complaints and achieving remedies for project affected parties. The GRM will ensure that complaints are directed and expeditiously addressed by the relevant agencies . A Grievance Redress Panel (GRP) will be set up at central and constituency levels. Its functions shall include but not be limited to the following:

- Redressing grievances of project affected persons (PAPs) in all respects
- Rehabilitation and resettlement (R&R) assistance and related activities
- Dealing with or hearing issues related to R&R and individual grievances

Each sub-project will be required to establish a project-level Grievance Redress Mechanism (GRM) at the start of implementation. The full details of these GRMs will be agreed upon during the assessments for each project. Interested and affected stakeholders may raise a grievance at any time to the authorities. Councillors and traditional authority will be expected to facilitate communities/individuals to identify and articulate grievances at the local level and the tabling of issues with the Constituency-level GRP, chaired by the Chief Constituency Officer. At the community, constituency and regional levels, the GRM will not develop parallel structures but make use of existing and locally recognized grievance redress systems

Complaints/Grievance Logging Procedure

A complains shall be received/reported to local GRP and recorded in the compliant logbook/sheet. The process of the complaint resolve will be tracked and once it is completed, the decision will be recorded. The GRP will responsible for determining the eligibility of the case, and will establish actions to resolve the complaint.

Accountability Mechanisms

AfDB recognize that even with a robust planning and stakeholder engagement, unanticipated issues are likely to still arise. Therefore, the Bank established an Independent Review Mechanism (IRM) that ensures individuals, peoples, and communities affected by projects have access to appropriate grievance resolution procedures for hearing and addressing project-related complaints and disputes.

The aim of IRM is to provide people adversely affected by a project financed by the AfDB, with an independent mechanism through which they can request the AfDB to comply with its own policies and procedures.

Further information, including how to submit a compliant to IRM, is found on the AfDB website at: https://www.afdb.org/en/about-us/organisational-structure/independent-review-mechanism-irm

8. CAPACITY BUILDING TO ENABLE ESMF IMPLEMENTATION

Implementation of the NWSSP will require that appropriate and effective institutional structures and management mechanisms are in place at national, regional, constituency and local/community levels. It is assumed that, wherever possible, existing structures and mechanisms will be harnessed, and strengthened where necessary. But some new ones may also be necessary.

The institutional structures and mechanisms to implement the ESMF will need to be accommodated as an integrated part of these arrangements. They will also be required at national, regional, constituency and local levels. The ESMF describes key institutional, requirements, structures and responsibilities.

Strengthening implementing agencies

Capacity building of implementing agencies will be achieved through:

i. Training programs for the existing staff of the implementing agencies.

ii. Technical Assistance: knowledge sharing and on-the-job training and mentorship.

9. BUDGET ESTIMATES FOR ESMF IMPLEMENTATION

Funding for the implementation of the ESMF should be included when costing the sub-projects by contractors that will be involved in sub-projects civil works. The indicative cost for preparing regional ESMPs is N$2 910 000.00 and each regional ESMP will give indicative budget to implement proposed measures and monitor implementation of the specific sub-projects. The indicative budget to implement this ESMF is N$1 105 000.00 as shown in the table below. The total cost is N$4 015 000.00.

No.	Activity	Cost (N$)
1	Environmental and Social Safeguard awareness and sensitization training sessions for project communities	N$375 000.00
2	Capacity building for safeguard implementation for safeguard focal persons and other relevant project staff	N$280 000.00
3	E&S screening activities at sub-project level and preparation of sub-project ESMPs as and when required	N$2 910 000.00
4	Environmental & social safeguard monitoring including bi-annual environmental audit and reporting to MET	N$450 000.00
Total		N$4 015 000.00

10. CONCLUSION

The program has potential to bring several positive benefits to not only to those living and working directly in the project areas but the entire country. Some of the benefits include; improved potable water supply, livelihood, healthy and economic boost. Adverse impacts identified in the ESA will be minimized, avoided and mitigated if the management options proposed in the ESMF are correctly implemented and monitored during the implementation process. To improve the management of impacts at sub-project level and local level, Environmental and Social Management Plans at regional will be prepared guided by the Namibian laws and AfDB policies. This aligns with country requirements. Based on the findings of the SESA and the ESMF reports, it is recommended that:

- ✓ Environmental and Social Management Plans be prepared and submitted to MET and competent authority for approval to satisfy the country's requirements before implementation
- ✓ The ESMPs should address adequate mitigation and management options to reduce, avoid, mitigate or compensate adverse impacts
- ✓ Implementing agencies should train staff that would be responsible for the implementation of the ESMF and other management plans or immediately appointed consultant whilst gradually train their staff to improve longevity and sustainability of the program
- ✓ Institutional capacity strengthening of implementing agencies and key institutions involved is required and very necessary
- ✓ Timely monitoring of activities is needed and implementing agencies should have capacity to monitor these activities. Strong reporting mechanisms are required and should be set prior implementation; and
- ✓ Grievances Redress Mechanism should ensure that affected and grieved parties are properly addressed, the Grievance Redress Panel should be set up starting from local to national level. At community, constituency and regional levels, the GRM will strive not to develop parallel structures but make use of existing and locally recognized grievance redress systems.

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