



## United Nations Development Programme Project Document

Project title: Support to the Orange-Senqu River Strategic Action Programme Implementation	
Country: Botswana, Lesotho, Namibia, South Africa	Implementing Partner: Orange-Senqu River Basin Commission (ORASECOM)
<b>Management Arrangements:</b> IGO Implementation	
UNDAF/Country Programme Outcome: N/A	
UNDP Strategic Plan Output: Output 2.5: Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use and access and benefit sharing of natural resources, biodiversity and ecosystems, in line with international conventions and national legislations.	
UNDP Social and Environmental Screening: Low Risk	UNDP Gender Marker: GEN 2
Atlas Project ID/Award ID number: 00088725	Atlas Output ID/Project ID number: 00095267
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Planned start date: April 2017	Planned end date: September 2022 (66months)
LPAC date: 13 July, 2016	
<b>Brief project description:</b> The overall objective of this project is the strengthening of joint management capacity for implementation of the basin-wide IWRM Plan and demonstrating environmental and socioeconomic benefits of ecosystem-based approach to water resources management through the implementation of SAP priority actions in the Orange-Senqu River basin. Although it is not realistic to separate the IWRM Plan into distinct	

components, it is fair to say that the SAP largely represents the environmental component of the overall IWRM Plan. The SAP is aimed at dealing with the four main threats as identified by the TDA, i) increasing demand on water resources, ii) changes to hydrological regime; iii) declining water resources quality and iv) land degradation. Improving environmental monitoring will be a critical part of SAP implementation and will be important in tackling the first three of these threats. Getting agreement on E-flows basin wide will underpin addressing changes to the hydrological regime and dealing with alien species will contribute to reducing land degradation

Financing Plan		
GEF Trust Fund or LDCF or SCCF or other vertical fund	USD 10,815,137	
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<b>(1) Total Budget administered by UNDP</b>	<b>USD 10,815,137</b>	
PARALLEL CO-FINANCING (all other co-financing that is not cash co-financing administered by UNDP)		
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ORASECOM	USD 1,876,000	
UNDP (CapNet)	USD 400,000	
GIZ	USD 981,047.94	
GWP-SA	USD 568,500	
UK DFID/CRIDF	USD 855,000	
<b>(2) Total co-financing</b>	<b>USD \$738,953,599.94</b>	
<b>(3) Grand-Total Project Financing (1)+(2)</b>	<b>USD \$749,768,736.94</b>	
Signatures		
<b>Signature:</b>  print name and title below	Agreed by Government of Botswana	Date/Month/Year:
<b>Signature:</b>  print name and title below	Agreed by Government of Lesotho	Date/Month/Year:

<b>Signature:</b>  print name and title below	Agreed by Government of Namibia	Date/Month/Year:
<b>Signature:</b>  print name and title below	Agreed by Government of South Africa	Date/Month/Year:
<b>Signature:</b>  print name and title below	Agreed by UNDP	Date/Month/Year:

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## II. DEVELOPMENT CHALLENGE

### Context

#### General Context

The Orange - Senqu River takes its source in the highlands of Lesotho and runs for over 2 300km to the Atlantic Ocean. The total catchment area is 972,783km<sup>2</sup> and encompasses all of Lesotho, the majority of South Africa and large parts of Botswana and Namibia. Situated in a largely semi-arid region, precipitation decreases sharply from east to west, from source to outflow. The river system is not only transboundary, but also forms some of the borders between its riparian states. The largest part of the basin (64.2 %) falls within South Africa. Lesotho occupies only 3.4% of the basin but contributes 41.5% of the systems surface runoff.

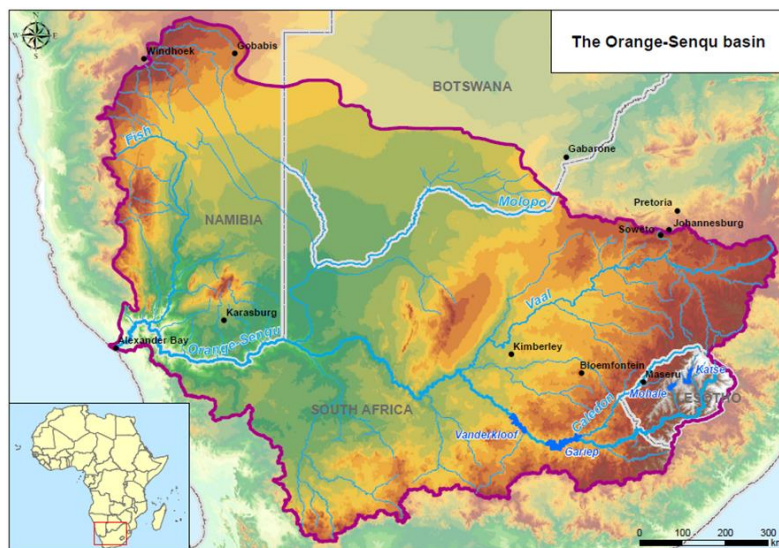


Figure 1: Topography of the Orange – Senqu River Basin

Table 1: Summary of basin characteristics

Country	Proportion(%) of basin area	Contribution to natural runoff (%)	Proportion (%) of basin population	Water use in 2005 (Mm <sup>3</sup> )
Botswana	7.9	0.3	0.3	Negligible
Lesotho	3.4	41.5	15.4	20
Namibia	24.5	5.2	2.6	76
South Africa	64.2	53.0	81.7	5,389

(Source: Orange-Senqu River Basin Transboundary Diagnostic Analysis, ORASECOM Report 002/2014)

While socio-economic activities vary enormously across the basin, water plays a vital role in supporting more than 14 million people within the basin and at least a further 5 million living outside of it through water transfers to adjacent basins (2013 data). The four basin countries rely to varying degrees on the system’s water resources for agriculture, industry (mining and manufacturing), energy, domestic and subsistence needs, conservation and tourism. The basin within Botswana is very sparsely populated and the limited demand is almost entirely fed by locally developed groundwater sources. The vast majority of water resources development in Lesotho has thus far been for export either as raw water via the LHWP or through the generation of hydroelectricity. As part of the Lesotho Lowlands Water Supply project, the Metolong Dam was recently completed and further developments may follow.

The Orange-Senqu River basin is of major economic importance to South Africa, supporting both the urban/industrial heartland of Gauteng and large areas of irrigation, producing crops for local consumption and

export. The water resources are also of strategic importance, producing both hydropower and providing water at a high level of assurance for the cooling of thermal power plants. Water is also exported out of the basin to other parts of the country, although these “exports” are partially compensated for through imports from other basins. The north eastern part of the basin in Namibia is largely given over to stock farming, dependant on rainfall and groundwater. Elsewhere in the basin, irrigation plays an important economic role using both surface and groundwater. A number of mines also depend on the basin’s water resources.

**Climate and water resources**

Average annual precipitation decreases from more than 1000mm/a in the source areas of the basin to less than 50mm at the mouth. This varies considerably from year to year. The naturally high inter-annual and intra-annual variability of both precipitation and runoff in the Orange-Senqu basin makes it difficult to distinguish these periodicities from long-term climate change trends. Nonetheless, a detailed assessment, through the global climate change model downscaling exercise commissioned by ORASECOM (2011), of the occurrence, extent and possible effects of climate change in the basin predicted a high degree of warming over the next 30- 50 years. Albeit with a high degree of uncertainty, a decrease of precipitation for the large majority of the basin is predicted, but for some parts of the source areas, increased mean annual precipitation is tentatively projected. An increased level of variability is widely anticipated which could result in more frequent and intense extreme events (floods and droughts). The assessment highlighted the need for adaptation measures and efforts to improve the quality and coverage of the climate and hydrological data collection efforts.

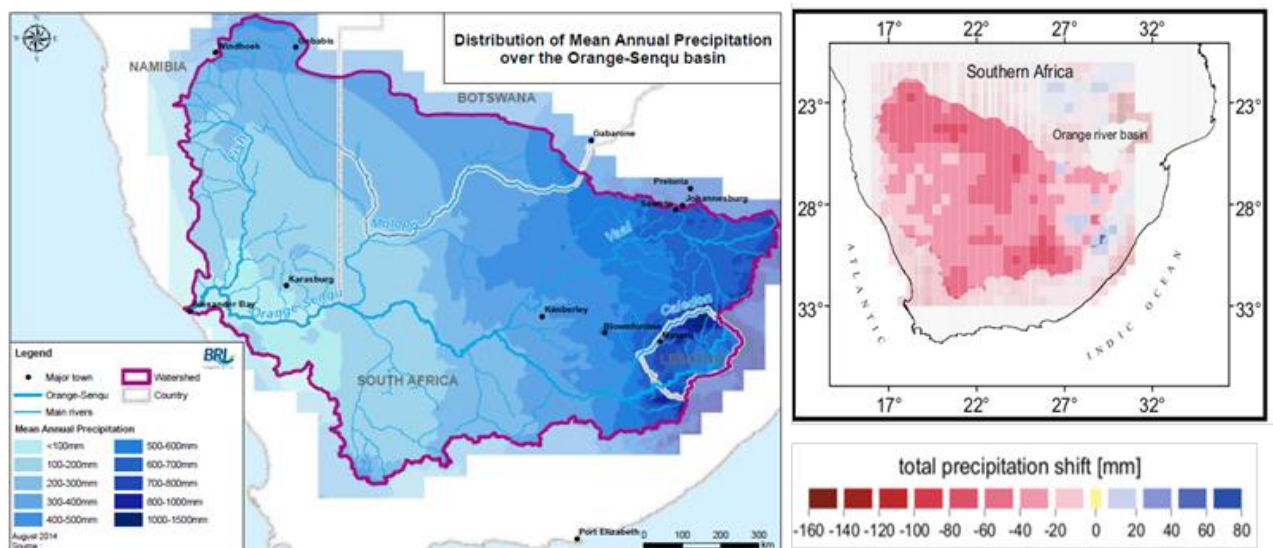


Figure 2: Predicted Change in annual precipitation comparing 1971-2000 (left) and 2031-60 (right)

The large majority of surface runoff is generated in the upper parts of the Senqu and its main tributaries, and the Vaal River. Significant quantities are generated in some of the drier areas but with a high level of inter and intra-annual variability, making their development difficult and costly. Based on the latest hydrology, the best estimate of the naturalised mean annual runoff of the Orange-Senqu Basin is 11 544 Mm<sup>3</sup>.

The Orange-Senqu river basin is a highly complex and integrated water resource system characterised by a high degree of regulation and a large number of major inter-basin transfers. Only in the source areas, mainly in Lesotho, are the flows not subject to regulation. Otherwise, The Orange-Senqu system is regulated by more than 30 major dams. The most downstream of these dams, the Vanderkloof Dam is more than 1 500 km upstream of the river mouth but the flow regime for much of the year is largely driven by releases from this dam. The Gariep Dam (5 675 Mm<sup>3</sup>) and Vanderkloof Dam (3 237 Mm<sup>3</sup>) on the Orange River downstream of Lesotho are the largest reservoirs in the system. Both dams are used to regulate the river flow for irrigation purposes as well as to generate hydro-electricity during the peak demand periods with a combined installed capacity of 600 MW, or 36% of the current total hydropower generation capacity in the basin.

The most significant inter-basin transfers include the transfer of water from the Lesotho highlands to the Vaal sub-basin and from the Gariep Dam on the Orange River to the Eastern Cape. Storage and inter-basin transfers are necessary because of the mismatch between location of abundant water resources and the location of greatest demands. This intensive development of the river system is also the underlying cause of many of the ensuing transboundary issues.

The most highly utilised tributary of the Orange-Senqu system is the Vaal River which supplies water to the industrial heartland of Southern Africa in Gauteng. The Vaal River System also provides water to 12 large thermal power stations producing 90% of South Africa’s electricity, as well as several large gold, platinum and coal mines.

Further downstream, the Fish River sub-basin, entirely located within Namibia accounts for two (Hardap, Naute Dams) of the seven dams regulating the flows coming from Namibia.

Even with the implementation of a range of measures including water conservation and water demand management, the desalination (rather than dilution) of acid mine drainage water and the eradication of unlawful use, there is very little “spare” water in the system. Figure 3 and Figure 4 summarize the situation for the two main components of the overall system, the “Integrated Vaal System) and the Lower Orange system (downstream of Vanderkloof Dam). Figure 3 shows that the demand and available yield were shown as being the same around 2014 and that after this, surplus yield until around 2020 would only be maintained by a range of conservation and water demand measures. After 2020 transfers from the planned Polihali Dam in Lesotho would be required.

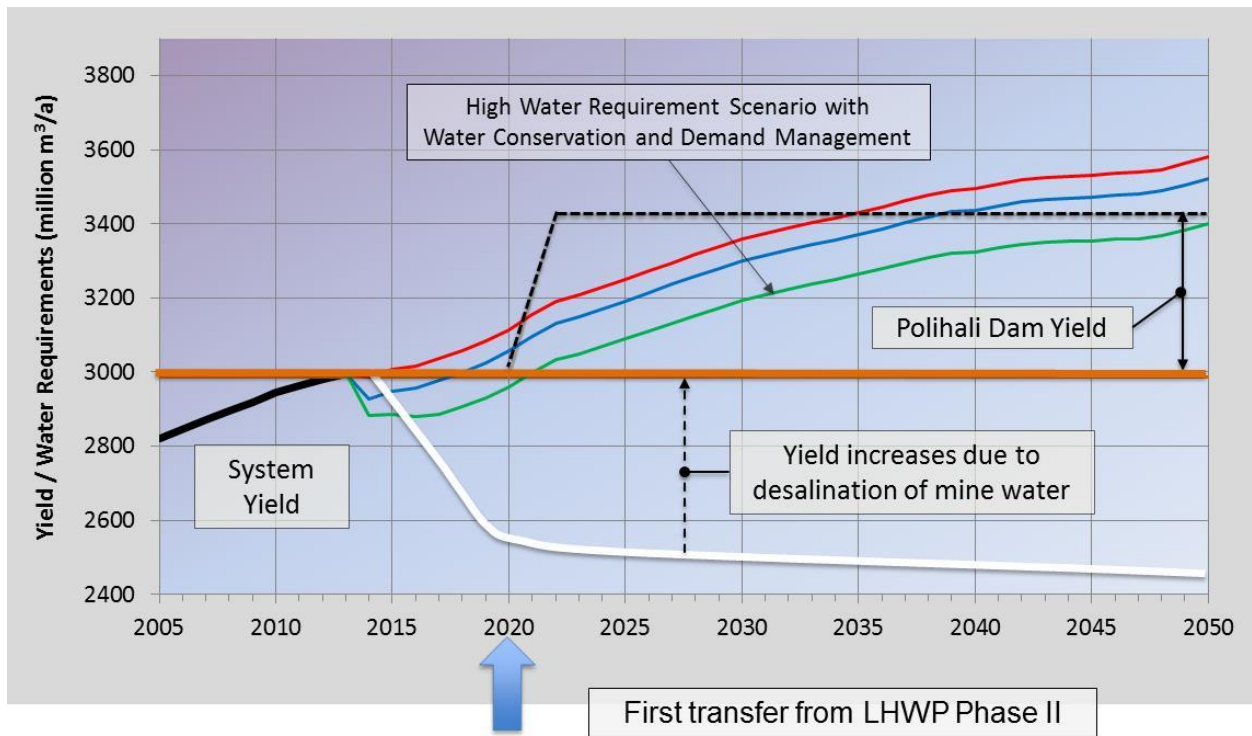


Figure 3: The Integrated Vaal system balance using high demand projection with WC/WDM, the removal of unlawful irrigation and desalination of the acid mine drainage water (source: IWRM Plan, 2014)



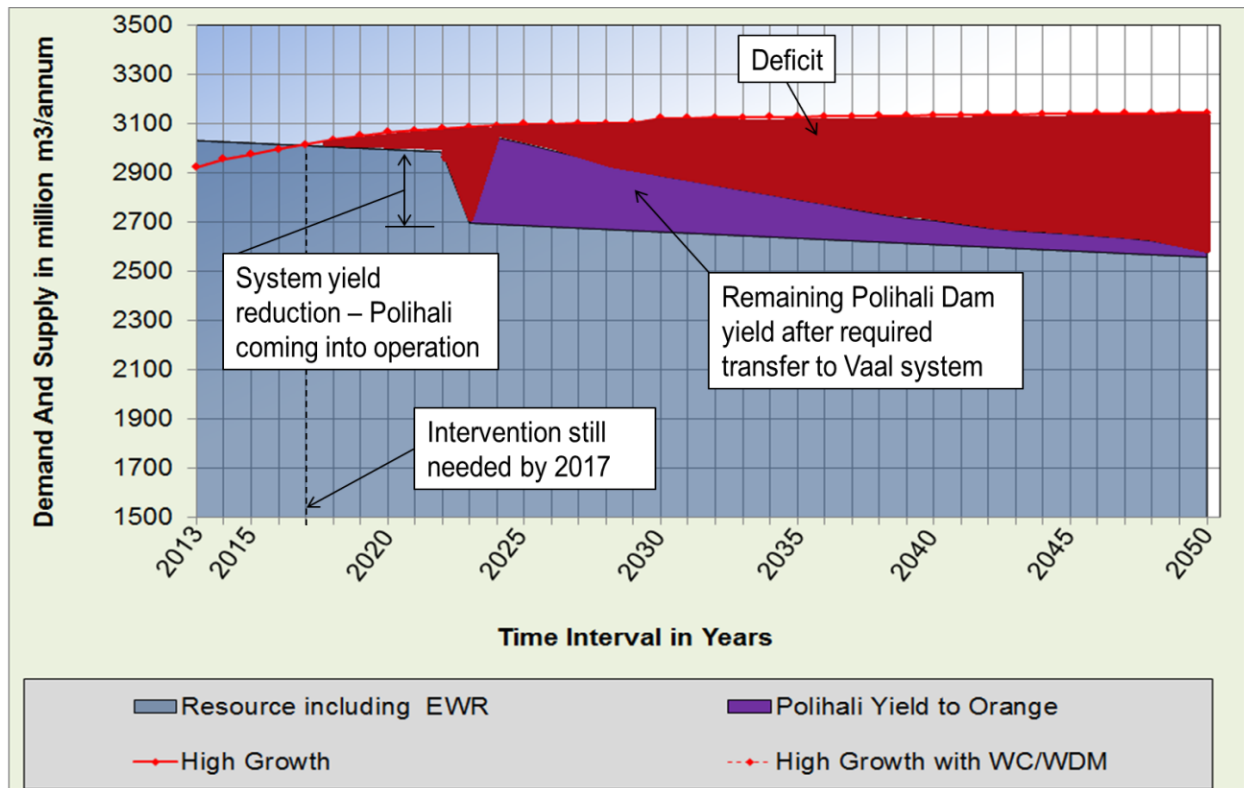


Figure 4: Future water balance of ORP with LHWP Phase II and no further interventions (source: IWRM Plan, 2014)

For those dependent on the Orange River downstream of the Gariep and Vanderkloof Dams, a deficit situation is anticipated by 2017. There are already plans to increase the yield of Vanderkloof Dam and better operational management of the dams through real-time monitoring systems is now in place. Thereafter, demand would have to be met by releases from the planned Polihali Dam in the Lesotho Highlands (part of LHDP II) and other measures including the possible construction of the Vioolsdrift Dam much further downstream.

It is important to note that the demand shown in Figure 4, includes allowance for environmental flows according to existing rules, which can be generally seen as inadequate.

One of the most significant impacts of the highly altered hydrological regime has been on the environment. As reported in the Transboundary Diagnostic Analysis (TDA), these changes in the hydrological regime impact downstream ecosystems, including the estuary – a Ramsar site – resulting in a loss of ecosystem services. There is increasing recognition of this fact and getting agreement on a consolidated set of environmental flow requirements in the lower part of the system, as well as starting to implement them, are high on the ORASECOM agenda. Linked to the management of the basin's water resources is the issue of catchment management to fight against land degradation. Inadequate land management associated mostly with agriculture and mining in parts of the Orange–Senqu River basin has led to loss of wetland storage and aquifer recharge, increased sediment loads, deteriorating water resources quality, loss of biodiversity and lowered land productivity. The occurrence of groundwater is determined largely by geology and its direction and rate of flow by topography. Groundwater is recharged by either rainfall infiltrating downwards or by seepage from rivers and lakes. Recharge also results from leakage from adjacent aquifers and can be enhanced artificially. Recharge rates are indicated in Figure 5. The four transboundary aquifers in the basin are shown in Figure 5

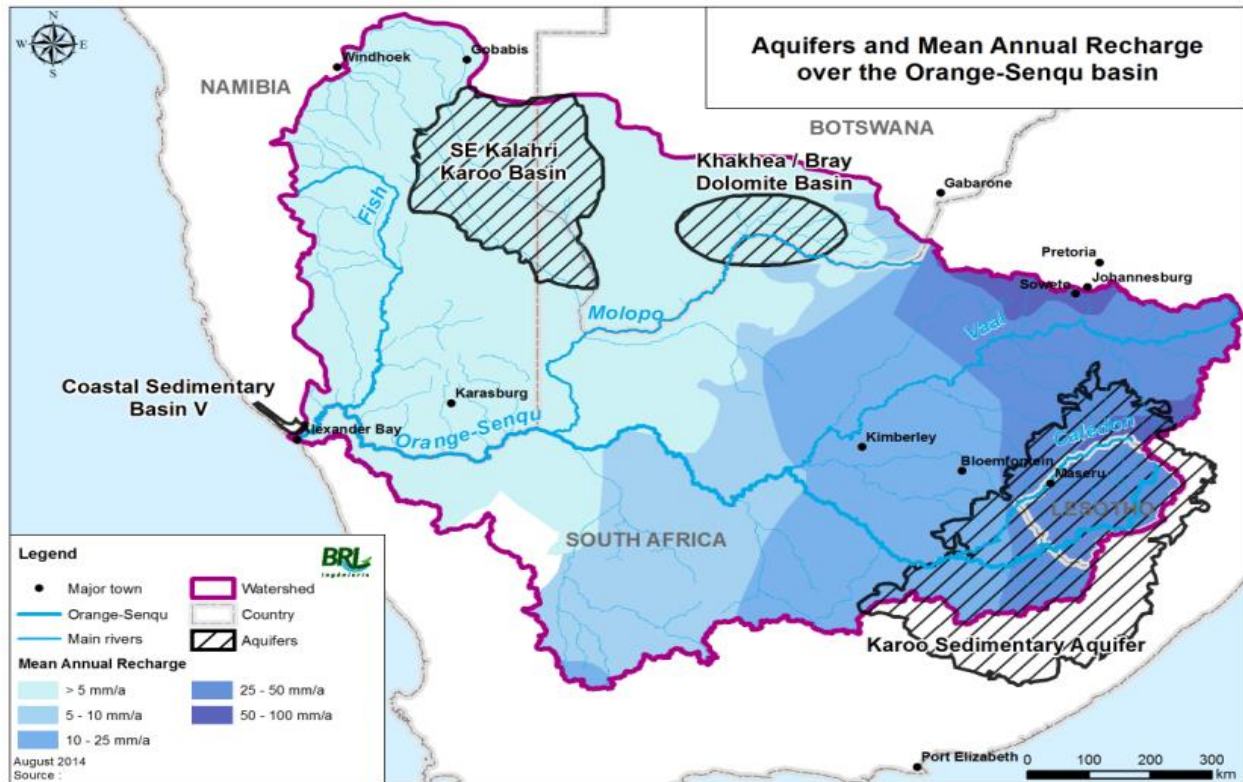


Figure 5: Transboundary aquifers of the Orange-Senqu Basin (Source: IWRM Plan, 2014)

The importance of groundwater has generally been understated in the past. It is only in recent years that the significance of groundwater at the regional level is being given due consideration. This is important for the following reasons:

- Groundwater and surface water are closely linked. This is especially true in the wetter source areas where the strengths of springs and the base flows of perennial streams are closely related to the condition of the water table.
- There are four transboundary aquifers in the basin. Shared management is clearly essential.
- The conjunctive use of groundwater and surface water storage can contribute to improved water conservation and an improved overall sustainable yield for the system.

Basin-wide water quality surveys have been organized by ORASECOM in 2010 and 2015 and were highly successful. According to ORASECOM’s basin-wide IWRM Plan, these surveys should be repeated every five years.

The key water resources quality issues in the Orange–Senqu River system have been identified as nutrient enrichment, primarily linked to increased phosphorus and nitrogen concentrations from agriculture; increased salinity from acid mine drainage and irrigation return flows; microbial contamination from urban settlements and poorly operated sewage treatment works; and increased sediment concentrations resulting from run-off from degraded land. In addition, radionuclides, heavy metals and persistent organic pollutants, while not currently posing a basin-wide risk, do show high concentrations in certain localised areas. Pollution and declining water quality is most severe in the Vaal sub-basin in South Africa.

### Land Degradation

Inadequate land management associated mostly with agriculture and mining in parts of the Orange–Senqu River basin has led to loss of wetland storage and aquifer recharge, increased sediment loads, deteriorating water resources quality, increased distribution and abundance of alien invasive plants, loss of biodiversity and lowered

land productivity. While increasing numbers of people are faced with dividing up the land into smaller pieces, they are also faced with land being less productive. In some parts of the basin, livestock production is in decline; opportunities for community-based natural resource management and alternative livelihood options are inadequately considered. Land degradation is generally perceived as a problem in the basin, and Lesotho specifically regards this as a high priority challenge.

### **Biodiversity**

Several areas of the basin are of significant importance for their biodiversity conservation. The Drakensberg–Maloti Mountains are a biodiversity hotspot of high-altitude flora, of which 30 % of an estimated 3,100 species are endemic to this area. This endemic zone also supports an extensive network of high altitude wetland bogs and sponges, crucial in the hydrological cycle of the Senqu River and its tributaries. The Lower Orange River passes through the Succulent Karoo biome which contains the highest diversity of arid flora globally and is also a declared biodiversity hotspot. In addition, the river basin supports a number of declared Ramsar sites, namely, the Orange–Senqu River mouth shared between Namibia and South Africa, Barberspan, Blesbokspruit and Seekoeivlei Nature Reserve in South Africa and Lets’eng-la-Letsie in Lesotho.

As a result of development and high rates of abstraction, some of these wetlands and areas of conservation importance are under threat. The volumes of water and frequency and timing of floods have been altered. Furthermore, water quality is impaired in many areas by seepage, runoff and point-source discharges of municipal, industrial and agricultural effluents, and by high sediment loads from land degradation in many areas of the basin.

### **Knowledge**

Water is abstracted for irrigation, industry and mining, urban use and livestock farming. In the face of increasing demand, the ecosystems are at risk. This is aggravated by inadequate knowledge of flows and a deteriorating monitoring system. This applies to an even greater extent to groundwater. Cross-cutting issues related to assuring water supply that contribute to the problem include i) inefficient use across most water-use sectors; ii) losses of water due to poor maintenance and aging infrastructure; iii) a limited appreciation of the value of water among many users; and iv) insufficient demand-management interventions and incentives to use less water. Additional transboundary elements which contribute to the problem are: i) the transfer of water out of the system; ii) deteriorating water quality; iii) limited research and implementation of alternative sources and improved technologies; and iv) reduced recharge to groundwater.

### **Legal Policy Contexts**

The SADC Regional Water Policy (RWP) and the Regional Water Strategy (RWS) lay down the regionally agreed policy guidelines concerning water resources management, covering a wide range of topics from infrastructure development, information exchange, capacity building to gender aspects and stakeholder involvement. The RWP provides the broad statements of intent as to how water resources will be managed and developed. The RWS gives effect to the RWP and this is done primarily through the SADC Regional Strategic Action Plans (RSAP), as well as through the implementation of national IWRM plans.

The Revised SADC Protocol provides the basis for transboundary water management in the SADC region. Whereas the RWP and RWS are important guideline documents, the Revised SADC Protocol is the framework agreement for transboundary water management in the region and does so by providing a suite of generic rules for managing these shared rivers. The Revised SADC Protocol thus, as a framework agreement provides the general direction and principles for any future watercourse agreements concluded in the SADC region, and importantly allows for a basin to reflect key aspects and characteristics that are pertinent within their own agreement (Ashton et. al., 2006; Beekman and Pietersen, 2008).

The ORASECOM Agreement was concluded in November 2000 and was ratified by Botswana, Lesotho, Namibia and South Africa during the same year. The Agreement is not expressly based on the Revised SADC Protocol (signed in August of the same year) but within the agreement there are specific references to the Revised SADC Protocol such as in Articles 7.2 and 7.3 that discuss the terms “equitable and reasonable” and “significant harm”.

It is important to note that the objective of the Council is indicated as “technical advisor to the Parties on matters relating to the development, utilisation and conservation of the water resources in the River System...” (ORASECOM, 2000). This is further explored in Article 5 of the agreement which then details the matters upon which the Council make recommendations. These are specifically relevant to the Council and it is critical to note that the international legal rules that outline water management in the Orange Senqu basin and the framework within which the Commission needs to provide its advice are contained within the SADC Revised Protocol and the bilateral agreements, and not within the ORASECOM agreement.

### **Institutional Aspects**

At the regional level, the SADC Water Division has been tasked with creating an enabling environment for the sustainable management of shared watercourses. Supporting this approach are the Revised Protocol on Shared Watercourses and the Regional Strategic Action Plans.

The highest body of ORASECOM is the Council which consists of the participating country delegations, each having three members. The Commission mostly works through a subcommittees system of four Task Teams (Technical, Communications, Legal and Financial) of which the members are technical experts or advisors nominated by each delegation. Technical working groups are formed as required. Their work is facilitated by a Permanent Secretariat with offices established in South Africa.

ORASECOM, through the Council, serves as technical adviser to the riparian countries on the development, utilization, and conservation of the water resources of the basin. The Council has both “functions” and “powers”. The former are about advice and recommendations to the Parties; the latter about appointment of technical experts, ensuring the implementation of the functions and regulating costs. The Commission is mandated to develop a comprehensive perspective of the Basin, study the present and planned future uses of the river system, and determine the requirements for flow monitoring and flood management (Dikobe (Ed), 2013). The main objective is the realization of the principle of equitable and reasonable utilization, as well as ensuring the principle of sustainable development. It is critical to note that the executive functions remain with the relevant Water Authorities of the four member states.

A number of bilateral agreements pre-date and postdate ORASECOM. Bilateral agreements and institutions have come into existence for a specific reason, essentially to implement or manage a project. They include:

- The Lesotho Highlands Development Authority (LHDA) in Lesotho and the Trans-Caledon Tunnel Authority (TCTA) in South Africa supervise and coordinate the work on the Lesotho Highlands Project
- The Permanent Water Commission (PWC), formed by Namibia and South Africa in 1992, advises both governments on the development of the Lower Orange which forms their mutual border
- Following the signing of a Memorandum of Understanding between Lesotho-Botswana and South Africa (with Namibia having observer status) a Joint Study Management Committee (JSMC) has been established to oversee a study to determine the viability of water resource development options for Botswana to access water from the Lesotho Highlands by assessing engineering, costing, social, legal, environmental, economic and financial information. A reconnaissance level study has been completed but the findings have not yet been finalised for release.

The rights and obligations stipulated in bilateral agreements remain unchanged by the ORASECOM Agreement but there is a formal expectation that the institutions will communicate items that impact other members, as stipulated in the ORASECOM Agreement. The ORASECOM Agreement stipulates that agreements that came into force prior to the ORASECOM Agreement remain unaffected by the new agreement (GEF 2008).

The basin states have the primary responsibility for the development and management of water resources within their territory. The ORASECOM Agreement (in line with the Revised Protocol on Shared Watercourses in the SADC Region) obliges the parties to:

- utilise the resources of the River System in an equitable and reasonable manner with a view to attaining optimal and sustainable utilisation thereof, and benefits therefrom, consistent with adequate protection of the River System;

- take all appropriate measures to prevent the causing of significant harm to any other Party;
- exchange available information and data regarding the hydrological, hydrogeological, water quality, meteorological and environmental condition of the River System; and
- notify the ORASECOM Council and provide all available data and information on any project that may have a significant adverse effect upon any one of the parties.

Thus while the planning and execution of projects is carried out by the parties, the transboundary obligations are acknowledged.

The private sector plays an increasing role in the management of water resources, in particular with respect to water demand management initiatives.

The private sector, notably in irrigated agriculture, industry and mining, at both commercial and subsistence levels undoubtedly has an important role to play in ensuring that development is sustainable and that wastage is minimised.

## Conclusions on the Development Challenge

The detailed Transboundary Diagnostic Analysis carried out between 2007 and 2013 (preliminary and full) allowed the threats to the sustainable development and management of the Orange-Senqu basin's water and related natural resources. These can be summarised as follows:

- **Increasing demand on water resources**

As highlighted in the situational analysis the water resources, there is an ever-increasing demand on the water resources of the Orange-Senqu basin, especially the surface waters. While demand has slowed, and in particular irrigation demand in South Africa, overall demand is likely to continue to increase, mainly driven by an increasing population and an improved standard of living. This is in the face of the fact that the limits of currently developed surface waters have been reached.

- **Changes to hydrological regime**

As indicated in the situational analysis, it is anticipated that the region will be one of the hardest hit by climate change with a significant rise in temperature and a probable reduction in surface water runoff. There is some uncertainty about whether precipitation will increase or decrease in some of the highland sources areas. What does seem very likely is that rainfall events and resultant runoff are likely to become more extreme in nature. Anthropogenic factors are also having an impact on the hydrological regime. Changes to the groundwater regime are less well understood, but it is clear that the drivers of change are essentially the same for both surface and ground water.

- **Declining water resources quality**

Work carried out as part of the TDA and during the two basin-wide water quality surveys have highlighted issues of declining water resources quality with the issues having been identified as nutrient enrichment, increased salinity, microbial contamination and changes in sediment load. In addition, radionuclides, heavy metals and persistent organic pollutants, while not currently posing a basin-wide risk, do show high concentrations in certain localised areas. Although a common problem throughout the basin, pollution and declining water quality is most severe in the Vaal sub-basin in South Africa.

- **Land degradation**

Inadequate land management associated mostly with agriculture and mining in parts of the Orange-Senqu River basin has led to loss of wetland storage and aquifer recharge, increased sediment loads, deteriorating water resources quality, increased distribution and abundance of alien invasive plants, loss of biodiversity and lowered land productivity. Land degradation is generally perceived as a problem in the basin, and Lesotho specifically regards this as a high priority challenge. On the riparian zones the challenge of invasive alien species such as prosopis are a major challenge, especially with Namibia and South Africa.

### III. STRATEGY

#### Introduction

Understanding the proposed project strategy requires an appreciation of the work that has already taken place in support of development of the SAP and other related projects such as the ORASECOM basin wide IWRM Plan.

The TDA, the SAP and the four national environmental action plans provided important inputs to the ORASECOM basin wide IWRM Plan (ORASECOM, 2014). Review of the IWRM Plan and supporting documents has been of critical importance. Annex AA I Section XIII provides a listing of some of the studies and projects since 2004 which have in some way contributed to the creation of a solid foundation on which to implement the IWRM Plan of which the SAP forms a part.

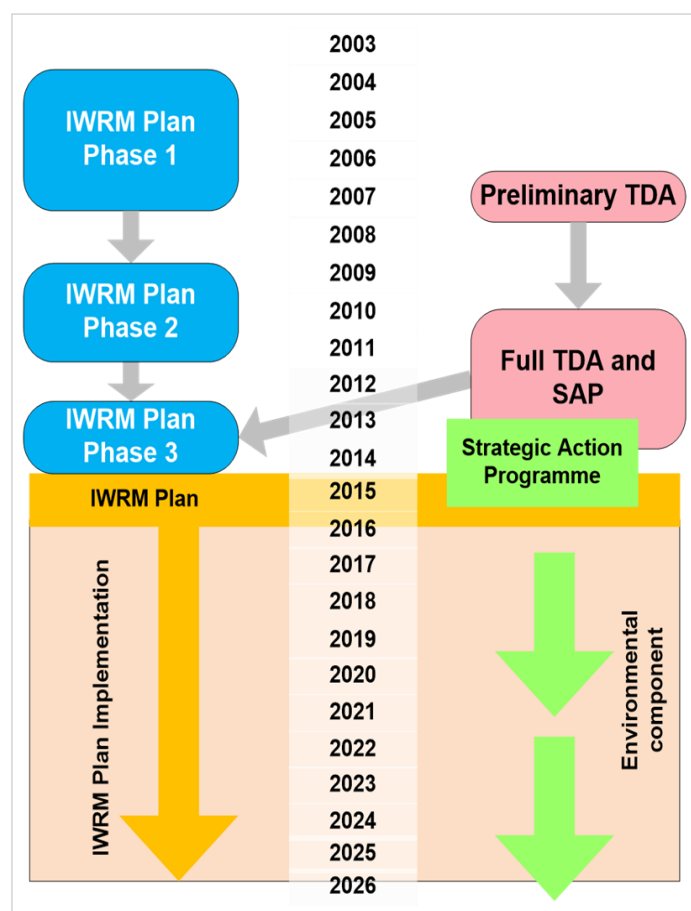


Figure 6: Parallel development of the SAP and the IWRM Plan

It is not possible to present the project strategy for implementation of the SAP without understanding the relationship between it and the basin-wide IWRM Plan. In 2014, the IWRM Plan and the Strategic Action Programme (SAP) for the Orange-Senqu Basin were finalized and endorsed.

Work on these two key projects had started in 2005. Figure 6 shows the parallel development of the two studies, both under the management of ORASECOM.

The IWRM Plan has four central themes:

- optimised sustainable management of the basin’s water resources,
- socio-economic upliftment and poverty eradication,
- environmental degradation (aquatic and terrestrial environment), and
- security from water-related disasters.

Taken together, the SAP and country environmental action plans constitute the third component of the IWRM Plan, i.e. actions related to addressing environmental degradation (while at the same time contributing to some of the other three central themes, particularly water resources management theme, given the inter-related nature of the plan).

The various draft interventions for implementation of the SAP, expressed in the form of SAP project concept notes and the National level action plan concept notes are fully integrated into the final version of the IWRM Plan which was finalised and endorsed a few months after completion and endorsement of the SAP. The detail of this integration is shown in Annex BB in Section XIII.

## Theory of Change for the Project

### Introduction

The proposed project has been built on the TDA which has carried out the necessary causal chain analyses in order to identify the transboundary threats to the sustainable development and management of the water resources of the Orange-Senqu Basin. Having identified and understood the threats and their causes, it was possible to identify the barriers which are preventing the removal of these threats, so that sustainable development/management of the basins water and related resources can proceed.

The SAP has then, through a stakeholder-driven process across all four countries, with discussions at the national and regional levels, drawn up an action plan aimed at removing these barriers, thus ensuring that the required changes can happen.

The barriers that have been identified are the following:

- **Barrier 1: Limited basin-wide understanding of available resources.** In order to manage and develop the resources in the basin, it is important to have a clear understanding of what is available, how this changes over time and what factors are important in maintaining a healthy system.

All four basin states have significant knowledge enhancement programme in place. These include the routine collection of climate and water resources data and the carrying out of various environmental surveys. Understanding of the water and related natural resources of the Orange-Senqu is good in comparison to many other transboundary river basins in the region. However, there are specific factors which mean that the understanding of available resources should, nevertheless, be regarded as limited:

- ⇒ The amount of surface water available is very limited. There are already deficits in some areas. Under these circumstances, it becomes critical to have the most accurate possible understanding of the available resources. Clearly, given the natural variability of climate in the region this is a challenge.
- ⇒ The potential impacts of climate change on surface and groundwater resources are still poorly understood. A lack of historic data and present day limitations of the models have made it difficult to carry out GCM downscaling with a satisfactory level of confidence.
- ⇒ Given the recognised increased importance of groundwater as a transboundary resource, it is generally accepted that the understanding of groundwater resources is far from adequate. This includes understanding of the interactions between surface and groundwater both in the wetter and drier parts of the basin.

- **Barrier 2: Limited potential for additional yields of water in the system.** The margin between water demand and water available is small. Using water more efficiently and effectively, especially in the irrigation sector, and exploring alternative sources, will make more water available. This can also will help make provision for environmental flow requirements and to address water quality issues, both of which will improve the health of aquatic ecosystems
- **Barrier 3: Deteriorated quality of water resources.** Declining water quality is perceived as one of the biggest threats to the basin's water resources. Acid mine drainage, inadequate sewage treatment and irrigation return flows are three areas that require continued intervention. Although many water quality issues are localised, they are common to all four basin states. Improved understanding of the sources, types and extent of water quality issues is required, and basin-wide water quality guidelines need to be provided. Improving water quality will make more water available and enhance the overall health of the system
- **Barrier 4: Adverse effects of a changed hydrological regime.** Decreased water in the system and the reduced size and frequency and timing of floods in the river system have had a negative effect on the functioning of the basin's riparian and estuarine ecosystems. The estuary (a Ramsar site) has also been affected by various developments and activities in the immediate vicinity. A number of environmental flow requirements studies have been carried out in different areas of the basin, each with valid yet not necessarily integrated recommendations

- **Barrier 5: Environmental degradation and unsustainable land use.** Environmental degradation and unsustainable land use: Land degradation affects people’s livelihoods, as well as the dynamics and quality of water in the basin. The effects of degradation on rangelands at the headwaters of the Orange–Senqu are of particular concern, as is degradation around pans in southern Botswana and invasion of the riparian zone by invasive alien plants. Addressing these areas of degradation will make the land more productive as well as improve water quality, hydrological functioning and water yields

While the Strategic Action Programme (SAP) and riparian countries’ Action Plans were drawn up through a consultative process to address the priority problem areas identified by the TDA, the specific actions and activities that form the ToR of the proposed project have been formulated with the removal of barriers in mind. This is evident in the basin wide objectives and targets that the countries have collectively set and which provide the framework for the project. These targets are to be met over a ten year period:

- Targets for addressing increasing water demand:
  - ⇒ Improved basin-wide hydrometeorological and geohydrological monitoring systems are established and data shared by the member states.
  - ⇒ Recommendations for transboundary environmental assessments are reviewed and adopted by the basin (member) states.
  - ⇒ Pilot initiatives for improving on-farm water efficiency are upscaled and implemented in priority areas.
  - ⇒ Potential for alternative options to meet water demand (demand management, expanded wastewater treatment, conjunctive re-use of surface and groundwater, etc.) in the basin have been defined.
  - ⇒ Understanding of groundwater use potential enhanced and efficiency of use improved
- Targets for addressing declining water resources quality:
  - ⇒ Basin-wide water resources quality objectives defined and monitoring system established/enhanced.
  - ⇒ Tools/incentives for reduced agrochemical application in the agriculture sector developed and implemented in pilot areas.
  - ⇒ Innovative methods for water resources quality improvements identified and implemented in pilot sites
- Targets for addressing changes to the hydrological regime:
  - ⇒ Basin-wide environmental flows regime agreed and implementation ongoing.
  - ⇒ Integrated management plan for the Orange–Senqu River mouth (Ramsar site) developed and implementation ongoing..
- Targets for addressing increasing land degradation:
  - ⇒ Local-level monitoring systems for rangeland conditions (including alien invasive species) developed and implemented.
  - ⇒ Catchment-protection initiatives upscaled and implemented in priority areas across the basin.
  - ⇒ Suitable rehabilitation methods and technologies for degraded areas of significance developed and implemented.
  - ⇒ Monitoring systems relevant to climate change maintained.

### **Project Components and Outcomes**

In line with the objectives above and the context provided in the previous chapter, the project has been divided into four (4) components

- **Component 1: Institutional and policy reform and technical capacity building towards enhanced transboundary basin planning and joint management.**



- **Component 2: Reducing stress on Water Resources Quality.**
- **Component 3: Addressing Changes to the Hydrological Regime through the source-to-sea application.**
- **Component 4: Addressing Land Degradation through community-based ecosystem management.**

In reaching the outcomes of each of these components the overall objective of the project will be achieved. How these outcomes will be reached requires change. This change is examined briefly in the following paragraphs:

### **Component 1 Outcomes**

The objective of Component 1 is to contribute to the enhanced transboundary basin planning and joint management of the basin. Realisation of this objective will especially contribute to the removal of Barrier 1, the limited basin-wide understanding of the available resources but also to removal of the other 4 barriers as a result of improved management. There are several targeted outcomes for Component 1.

- **Outcome 1.1: ORASECOM's capacity to develop innovative financing schemes strengthened.** This outcome recognises the importance of stakeholder and private sector involvement in the enhanced management of the basin's water resources and in particular the concept of stakeholder-driven water demand management initiatives and payment for ecological services (PES).

The project will support the strengthening of ORASECOM in identifying and developing innovative financing mechanisms for improved water resources management in the basin. The steps leading to change are as follows:

- ⇒ Review lessons learned and share with stakeholders aimed at identifying new PPP options/possibilities
- ⇒ Plan, design and implement WDM and PES schemes
- ⇒ Monitoring and evaluation of projects' success
- ⇒ Experience sharing aimed at replication and taking to scale

- **Outcome 1.2: ORASECOM's joint basin planning capacity strengthened through improved data and information management and basin management support systems.** Achievement of this outcome will play a major role in removing the barrier of limited basin-wide understanding of available resources and in so doing will enhance the basin planning and joint management of the basin. It recognises the importance of empowering ORASECOM's transboundary management capabilities through the strengthening of a shared information platform that will support transparent and integrated management. During the SAP design a Water Information System (WIS) was set up and implemented at the Secretariat. Further work is required to improve and transform this WIS so that it can play a key role in supporting improved data and information management and basin management support systems.

The steps leading to change are as follows:

- ⇒ Enhance the power, usefulness and sustainability of the existing ORASECOM WIS through improved functionalities, proper maintenance and promotion of the services offered by the WIS.
- ⇒ Integrate the basinwide environmental monitoring systems into the WIS such that the system can provide all the necessary information for transboundary planning and management
- ⇒ Carry out annual water resources modelling making use of up-to-date information provided by the WIS in order to support optimised operation of infrastructure for equitable allocation and provision of environmental flows
- ⇒ Integration of modelling results and management plans into the WIS

- **Outcome 1.3: SAP and country-specific Action Plans revised and updated for next 5-year cycle.** The SAP and Action Plan set environmental targets for a 10-year period and prioritise proposed interventions in sets of 5-year cycles. The IWRM Plan is also set out over a ten year period. It is important that the SAP and Action Plans are reviewed towards the end of the initial 5-year cycle and revised SAP and Action Plans are prepared for the next 5-year cycle. The inter-sectoral working groups that were at the centre of the initial SAP/ Action Plan development, and which still remain, will again be the key drivers of this process, facilitated by this project. The outcome will be achieved through the following steps:

- ⇒ Review SAP and country-based Action Plans through consultative process taking into consideration updated anticipated impacts from climate variability and change among other priorities
- ⇒ Basin States review and agree revised SAP and country-based Action Plans for the next 5 year cycle
- **Outcome 1.4: Transboundary Environmental and Social Assessment Guidelines endorsed by Basin States.** The development and endorsement of Transboundary Environmental and Social Assessment Guidelines will greatly enhance the transboundary basin planning and joint management of the basin. The project will support the ORASECOM Secretariat in facilitating the consultation process for the endorsement of the ORASECOM tb-ESA guidelines by Member States for application at basin-wide level. This effort will be pursued in close collaboration with SADC. The project will further assist ORASECOM and the Member States with technical support (in the form of short studies or expert advice, etc.) on particular issues relevant for the practical application of the tb-ESA guidelines. The steps leading to change are as follows:
  - ⇒ Review and update of work done to date both within the region and internationally
  - ⇒ Compile concept paper aimed getting understanding of and support for the approach and guidelines
  - ⇒ Provide capacity-building, technical support and experience sharing to Member States
  - ⇒ Tb-ESA Guidelines developed through a multi-sectoral, multi-disciplinary, multi-country consultation process
  - ⇒ Basin States review and agree revised SAP and country-based Action Plans for the next 5 year cycle
- **Outcome 1.5: ORASECOM's capacity on communication, knowledge management, south-south cooperation enhanced.** The recently (October 2014) completed Institutional Capacity Review of ORASECOM identified the Commission's communication functions as a weakness. The project will assist ORASECOM in documenting best practices and lessons learnt and communicate those widely to relevant stakeholders. This outcome will contribute to the removal of Barrier 1, but benefits will cut across the other barriers since improved communication and knowledge amongst stakeholders will support all aspects of improved resources management.

This outcome will be achieved through the following outputs.

The steps leading to change are as follows:

- ⇒ Share lessons learned and best practices on SAP implementation (esp. innovative approaches such as Tb-ESA Guideline application and Source-to-Sea applications) with African RBOs and Regional Economic Communities through ANBO and AMCOW and globally through IW:LEARN and other global fora, including the active participation in IW:LEARN related activities
- ⇒ Revise the ORASECOM Communication Strategy and Implementation Plan with monitoring and evaluation framework and implement
- ⇒ Produce and disseminate materials for range of stakeholders
- ⇒ Monitoring and evaluation of improved awareness and impacts thereof

### **Component 2 Outcomes**

The outcomes of Component 2 are mainly aimed at addressing Barrier 3, the deteriorated quality of water resources. Focus is on industrial pollution and groundwater resources but the importance of water quality monitoring is given emphasis. The component also address Barrier 2, the limited potential for additional yields in the system by looking at how groundwater resource can be better used and protected.

- **Outcome 2.1: Basin-wide water resources quality monitoring system established.** Through the TDA and SAP development process supported by the previous UNDP-GEF intervention and other cooperating partners, basin states have identified key water resources quality issues in the Orange–Senqu River system as nutrient enrichment, primarily linked to increased phosphorus and nitrogen concentrations; increased salinity from acid mine drainage and irrigation return flows; microbial contamination from urban settlements and poorly operated sewage treatment works; and changes in sediment load. In

addition, radionuclides, heavy metals and persistent organic pollutants, while not currently posing a basin-wide risk, do show high concentrations in certain localised areas and require increased monitoring.

The steps leading to change from the current situation are as follows:

- ⇒ Review and building on basinwide RWQOs and the development of water quality management guidelines.
- ⇒ Making of recommendations on improving the water quality network to support these guidelines
- ⇒ Make data more transparent and accesible, making full use of the enhanced ORASECOM WIS (see Component 1)
- ⇒ Improve reporting, dissemination of information and capacity of stakeholders and champions
- ⇒ Prepare and carry out the third (2020) basinwide joint water quality survey, making use of improved data collection, reporting, dissemination systems and enhance capacity (previous steps)
- ⇒ Using identified pollution hotspots, agree on priorities and develop high level mitigation action plans for implementation at pilot demonstration sites and subsequent monitoring and evaluation.

- **Outcome 2.2: Point source pollution in Lower Mohokare Catchment reduced and improved industry standards implemented.** This outcome is aimed at tackling hotspots of industrial pollution issues through pilot interventions and demonstration of benefits. The focus is on the Mohokare Rivers, one of the important upper tributaries of the Orange-Senqu and which forms part of the border between Lesotho and South Africa. Barrier 3

The steps leading to change are as follows:

- ⇒ Detailed diagnostic analysis
  - Locate and map point sources of pollution in the lower Mohokare. These will include industrial pollution, mining pollution, poor sanitation practices (pit latrines etc), impacts of sand mining
  - Document water quality status and environmental change and river ecosystem health, establishment of site specific and general river baseline, pollution database register and associated spatial mapping products.
- ⇒ Establish an appropriate water resource quality management system including the development of appropriate licensing systems. Development of appropriate management strategies
- ⇒ Consultative process aimed at implementing guidelines and licensing system in cooperation with stakeholders, for industry, mining, livestock farmers etc
- ⇒ Design and implement pilot demonstration sites and arrangements for experience sharing by communities
- ⇒ Development of monitoring and enforcement systems
- **Outcome 2.3: Quantity and quality of groundwater resources determined and low-cost groundwater desalination plants piloted in Botswana.**

Achieving this outcome will contribute to the removal of both Barriers 1, 2 and 3. Improving understanding of the quantity and quality of groundwater resources will contribute to removal of Barrier 1 (limited understanding of available resources, making use of marginal water will contribute to removal of Barrier 2 (limited potential for additional yields) and identifying and dealing with pollution sources will support removal of (Barrier 3, deteriorated quality of resources).

The steps leading to changing this situation are as follows:

- ⇒ Carry out an audit of existing well fields and use of idle boreholes
- ⇒ Carry out a detailed groundwater assessment (drilling, testing etc) and develop high quality groundwater database
- ⇒ Develop aquifer potential maps (yields and quality including identification of well-field protection zones

- ⇒ Planning, design and implement improved groundwater desalination technology at pilot sites, including monitoring and evaluation, capacity building and experience sharing aimed at taking to scale.

### **Component 3 Outcomes**

Component 3 focuses on Addressing Changes to the Hydrological Regime through the application of the “Source-to-Sea concept”. This will contribute in a critical way to the removal of Barrier 4, the adverse effects of a changed hydrological regime. As indicated in Section II, the hydrological regime has been highly altered.

Key areas will include agreement on environmental flows and their implementation and the implementation of measures to sustainably rehabilitate the Orange-Senqu River Mouth.

- ***Outcome 3.1: Basin-wide environmental Flows regime agreed and implementation supported.***  
Environmental flows assessments for most parts of the basin have been carried out. There is now sufficient information to set up and implement a basin-wide e-flows regime. This outcome aims at integrating and harmonising all relevant e-flows assessments to ensure comparability of results. Based on the existing work, agreement on the implementation of a basin-wide e-flows regime will be sought through a consultative process. The steps required to achieve this change are as follows:
  - ⇒ Harmonise all the existing work on E-Flows which will include information hydrology, water demand, ecosystem and resource use. Legal and administrative aspects will also have to be harmonised.
  - ⇒ Based on the harmonised existing e-flows work, a suite of basin-wide development scenarios will be developed, covering a range of socio-economic development options and showcasing the resulting ecosystem protection levels.
  - ⇒ These scenarios will be presented to the basin states in order to facilitate agreement on a basin-wide e-flows regime for implementation through a consultative process.
  - ⇒ Basin States agree on E-Flows regime
  - ⇒ Set up and implement the agreed E-Flows regime
  - ⇒ Put in place compliance monitoring system, together with adaptive management programme.
- ***Outcome 3.2: Critical ecosystem of the Orange-Senqu River Mouth rehabilitated and sustainably managed.*** The South African section of the Orange–Senqu River mouth (Ramsar site) was placed on the Montreux Record in 1995 following the severe degradation of the salt marsh habitat, a particularly important area for migratory birds. An assessment of the present ecological state of the Orange–Senqu River estuary indicated that it was in a largely modified state (Category D) as a result of large-dam development (reduction in floods and increase in winter low-flows) and a range of local non-flow related activities. The study also concluded that the estuary’s present condition can be significantly improved through mitigation of non-flow related activities. Flow-related activities must be achieved upstream (see Outcome 1) through application of the source to sea concept.

The proposed interventions were based on and aligned with the ‘Strategic Management Plan for the Orange River Mouth Ramsar site’ that has been produced through a consultative process under the auspices of the GEF funded BCLME project in support of the Benguela Current Commission (BCC). The BCC will be involved in an advisory capacity in the implementation of this part of Component 3. This plan has since been superseded by the Draft Orange River Mouth Ramsar Site Strategic Estuarine Management Plan (Oct 2015) which includes a preliminary zonation plan for the Orange River Estuary with associated activities and restrictions. This outcome will contribute to the implementation of the management plan and at the same to the removal of Barrier 4. The project will also support the Governments of Namibia and South Africa to seek cooperation with the Ramsar Convention Secretariat on aspects related to the Ramsar status of the area.

The main elements leading to the achievement of this outcome are local interventions that (i) improve the condition of the Orange–Senqu River mouth salt marshes; (ii) enhance the estuary nursery function to improve the stock status of collapsed/over-exploited fish species; and (iii) improve the water quality of the river flowing into the system.

The steps leading to change from the current situation to achievement of the outcome are as follows:

- ⇒ Restore the natural flood plain functions through removal of obstructions and other measures.
- ⇒ Reduce nutrient input from agricultural areas below Vioolsdrift

#### **Component 4 Outcomes**

Component 4 concerns improved land productivity and improved living conditions through community-based sustainable land management. The focus area under this project will be on the control of invasive species in pilot areas on the Fish River in Namibia and the lower Orange in both Namibia and South Africa.

- ***Outcome 4.1: Invasive species controlled through integrated management in pilot areas in the Orange–Fish River basin and livelihood options based on invasive species control developed.*** Achievement of this outcome is aimed at supporting the removal of Barrier 5, Environmental degradation and unsustainable land use. This will be achieved through the removal of a major invasive species, *Prosopis*, coupled with a range of livelihood enhancement activities aimed at ensuring that the removal programme is sustainable

The steps required to achieve this change are as follows:

- ⇒ Map and determine the distribution and abundance of invasive species in the basin, especially *Prosopis*.
- ⇒ Select pilot demonstration sites
- ⇒ Quantify impacts of *Prosopis* on groundwater resources at sub-catchment level and at the demonstration project level.
- ⇒ Put in place the necessary legal and institutional framework for *Prosopis* management
- ⇒ Determine and agree with stakeholders, sustainable options for harvesting *prosopis* and pilot project design.
- ⇒ Implement pilot demonstration projects
- ⇒ Monitoring and evaluation, including economic evaluation
- ⇒ Sharing of lessons learnt and design of long-term sustainable programme.

#### **Project Outcomes, Outputs and associated required tasks and sub tasks**

The steps required to make change have been formalised in a number of outputs and for each output a number of more specific tasks and sub-tasks. These are all presented in the Multi-year Work Plan which is included as Annex A in Section XII.

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## **IV. RESULTS AND PARTNERSHIPS**

### **Expected Results:**

#### **Introduction**

The overall objective of the project is to strengthen **joint management capacity for the basin-wide IWRM implementation and demonstrating environmental and socioeconomic benefits of ecosystem-based approach to water resources management through the implementation of SAP priority actions in the Orange-Senqu River.** This will be achieved under four project components. These are described below together with the immediate outcomes and main project outputs.

The critical area of knowledge management is included under Component 1 since this issue is central to the development of the ORASECOM Water Information System (WIS)

#### **Component 1: Institutional and policy reform and technical capacity building towards enhanced transboundary basin planning and joint management.**

Component 1 will aim at achieving five outcomes covering a range of concepts. The outcomes and project outputs are as follows:

- **OUTCOME 1.1: ORASECOM's capacity to develop innovative financing schemes strengthened.**

- ⇒ **Output 1.1.1: Innovative PPP schemes developed under the auspices of ORASECOM, building on successful pilot project (with Ekurhuleni municipality)**

ORASECOM has contributed to facilitating a successful Public-Private-Partnership (PPP) in the basin between SASOL (a major producer of petroleum related products) and the Ekurhuleni municipality (situated in the eastern part of the Greater Johannesburg Metropolitan Area). The success of this partnership has triggered the desire to further investigate the potential for PPPs in the basin and for ORASECOM to support the establishment of such partnerships and other potential financing scheme to direct private sector investments into improved water resources management within the basin for the benefits of population in the basin, with strong focus on women and the youth

- ⇒ **Output 1.1.2: Potential for implementation of transboundary PES schemes in the basin explored and PES project concepts developed**

In the context of innovative financing schemes, it is believed that there is considerable potential for the development of Payment for Ecosystem Services (PES) schemes, at both the national and transboundary levels. As far as transboundary PES schemes are concerned, there is, for example, potential in large-scale downstream users (in South Africa) paying for catchment management and environmental protection services (e.g. reduction of siltation through erosion prevention etc.) provided upstream (in Lesotho). There is a need to explicitly evaluate the economic benefits to each type of downstream user (water treatment plants benefitting from less turbid water, improved performance of reservoir storage as a result of increased baseflow and reduced floods, reduced rates of reservoir siltation etc). ORASECOM, as a basin-wide commission is ideally placed to explore such innovative financing options on a transboundary scale and support the development of project concepts for subsequent implementation. The possibility of using this implementation of PES to generate additional income for ORASECOM in order to implement projects outside of its day to day functioning should be considered. The best approach may be for ORASECOM to demonstrate the financial benefits that it's role as coordinator is bringing to all parties and to then justify a levy on savings that result from interventions. The importance of monitoring and evaluation is clearly critical.

- **OUTCOME 1.2: ORASECOM's joint basin planning capacity strengthened through improved data and information management and basin management support systems.**

Outcome 1.2 is closely linked to Outcome 2.1 (see further) in that it provides the platform and required procedures and systems for the integration of the various monitoring efforts at basin level. This outcome will contribute in a major way to the improvement of knowledge management for the project and for ORASECOM work as a whole.

- ⇒ **Output 1.2.1: ORASECOM WIS enhanced**

This output will see the development of a wide range of new functionalities for the Water Information System (WIS). The enhanced WIS will underpin outcomes and outputs under other project components. Together with the propose enhancement, maintenance sustainability, capacity building and the important promotion of the WIS will be assured.

- ⇒ **Output 1.2.2: Basin-wide environmental monitoring systems integrated into WIS.**

Achieving this output will involve the designing and implementation of functionality for the WIS that will provide an integrated view of monitored data from all the riparian states that contribute to the optimal network for the Orange–Senqu River basin. The functionality will be in the form of several thematic monitoring data overviews and display of the historic and current data for the sites. There will also be historic and current annual summaries of the data to provide an overview of the basin's resource status

- ⇒ **Output 1.2.3: Annual water resources modelling supported to optimise infrastructure operation for equitable allocation and e-flows provision**

As part of the endorsed IWRM Plan for the basin, annual or more frequent interstate water resources modelling is planned. One of the main reasons for this is to ensure that all member countries are fully

involved in the decision-making process and satisfied with the allocation of water and satisfaction of environmental flow requirements. The enhanced WIS will support this output

- **OUTCOME 1.3: SAP and country-specific Action Plans revised and updated for next 5-year cycle.**

The SAP and Action Plans will be reviewed towards the end of the initial 5-year cycle and revised SAP and Action Plans prepared for the next 5-year cycle. The inter-sectoral working groups that were at the centre of the initial SAP/ Action Plan development, and which still remain, will again be the key drivers of this process, facilitated by this project. The outcome will be achieved through the following outputs

⇒ **Output 1.3.1: SAP and country-based Action Plans reviewed through consultative process taking into consideration updated anticipated impacts from climate variability and change among other priorities**

⇒ **Output 1.3.2: SAP and country-based Action Plans reviewed through consultative process taking into consideration updated anticipated impacts from climate variability and change among other priorities .**

- **OUTCOME 1.4: Transboundary Environmental and Social Assessment Guidelines endorsed by Basin States.**

There is only one main output as presented below:

⇒ **Output 1.4.1: Tb-ESA Guidelines developed through a multi-sectoral, multi-disciplinary, multi-country consultation process**

Transboundary environmental and social assessment (tb-ESA) guidelines have been developed with the previous UNDP-GEF support to the ORASECOM, based on stakeholder consultations that included a wide range of experts, including UNDP policy advisors on Gender and HIV/AIDS and international legal experts. The project will support the ORASECOM Secretariat in facilitating the consultation process for the endorsement of the ORASECOM tb-ESA guidelines by Member States for application at basin-wide level. This effort will be pursued in close collaboration with SADC. The project will further assist ORASECOM and the Member States with technical support (in the form of short studies or expert advice, etc.) on particular issues relevant for the practical application of the tb-ESA guidelines. (NB: GEF financing will NOT be used to role out actual IEAs on national levels.)

- **OUTCOME 1.5: ORASECOM's capacity on communication, knowledge management, south-south cooperation enhanced.**

The recently (October 2014) completed Institutional Capacity Review of ORASECOM identified the Commission's communication functions as a weakness. The project will assist ORASECOM in documenting best practice and lessons learnt and communicate those widely to relevant stakeholders. One of the institutional review's recommendations (since approved by ORASECOM) is the addition of a Communication Expert to the ORASECOM Secretariat's staff. Although this position is approved, the budget is not yet in place. This expert is one of the key members of the project management team (see Section 5), and since his/her involvement will be full-time on the SAP implementation, his/her employment costs will be covered by the project. This outcome will be achieved through the following outputs.

⇒ **Output 1.5.1: Lessons learned and best practices on SAP implementation (esp. innovative approaches such as Tb-ESA Guideline application and Source-to-Sea applications) shared widely with African RBOs and Regional Economic Communities through ANBO and AMCOW and globally through IW:LEARN and other global fora, including the active participation in IW:LEARN related activities**

⇒ **Output 1.5.2: At least 1 communication material produced and disseminated/year from Year 2 of implementation**

## **Component 2: Reducing stress on Water Resources Quality.**

Component 2 focuses on reducing stress on water resources quality through the development of a basin-wide water resource quality monitoring system and two demonstration projects (one in Lesotho and one in Botswana) addressing priority pollution issues:

- **OUTCOME 2.1: Basin-wide water resources quality monitoring system established.**

There is a need to maintain and harmonise different monitoring systems to provide information on different aspects of water resources quality. The basin-wide Orange–Senqu monitoring system will largely be designed around the current monitoring sites, and data to be collected will largely be determined by the needs of the end users. The emphasis on developing the basin-wide monitoring system is on harmonising and integrating the existing national monitoring systems and national efforts of the basin states, filling data gaps where they exist, developing data exchange and management mechanisms and developing basin-wide management response mechanisms acting on the results/analysis generated by the basin-wide monitoring system. Data exchange and sharing activities will support the production of tangible basin-wide output, such as state-of-art water quality yearbooks.

To pilot the basin-wide management response capacity of the basin-wide monitoring system, the project will support the ORASECOM and basin states to take collective/joint actions to alleviate pollution problems at selected pollution hotspots. Exact nature of the management response, collective/joint actions to be taken and indicators to measure the effectiveness of such action all depend on the nature and characteristics of the identified hotspots.

- ⇒ **Output 2.1.1: Basin-wide water (resources) quality guidelines and monitoring systems developed)**

It is important that these monitoring systems are maintained at a high level of reliability. The support of each country over the long term is critical for sustainability. For this reason it is proposed that a Memorandum of Understanding (MoU) or other suitable form of agreement/commitment will be put in place between the four countries (to be facilitated by ORASECOM) which clearly states the expectations and obligations of each party and ORASECOM as a whole.

- ⇒ **Output 2.1.2: Periodic water resources quality monitoring and data sharing carried out and water quality year-books produced**

The MoU mentioned above should include all the necessary details on type, format, and frequency of data exchange as well as QA/QC protocols to be observed.

- ⇒ **Output 2.1.3: Joint Basin Survey supported in 2020**

The basin-wide monitoring system will be tested during the next 5 yearly Joint Basin Survey as well as other joint monitoring exercises to be facilitated within the basin by ORASECOM.

- ⇒ **Output 2.1.4: Pollution hotspots identified and pilot interventions on pollution control demonstrated**

- **OUTCOME 2.2: Point source pollution in Lower Mohokare Catchment reduced and improved industry standards implemented.**

Point-source pollution is usually controlled through water-quality standards and permitting programmes which establish limits on the kind or amount of pollutants each point source may discharge into a body of water. To this effect, in Lesotho, the draft national water quality standards for various users, including domestic, industry, agriculture and environment, have been developed. With regard to pollution prevention and control, the Lesotho water policy is based on a combined approach using control of pollution at source through the setting of emission-limiting values and of environmental quality standards. In the Water Act (2008) the Government of Lesotho provides for the management, protection, conservation, development and sustainable use of water resources. The Government of Lesotho pledges to ensure the establishment of programmes for the monitoring of wastewater in qualitative and quantitative terms to establish a coherent and comprehensive database for wastewater within each river basin.



However, in most industries (dominated by textiles) in Lesotho, the wastewater is not pre-treated before discharge, neither for discharge into the public sewerage system nor into surface water bodies. Implementation of the above-mentioned legislation and standards is severely hampered by the fact that only limited information is available on the quantity and quality of wastewater generated by industries, with no ongoing programme of industrial wastewater sampling and analysis. Likewise, there is no legislation on chemical wastes in Lesotho and the import/export of chemical substances, specifically those used in the textile industry, a major polluter in that part of the basin. The lack of robust guidelines for pharmaceutical products is also a concern. The Lower Mohokare Sub-catchment is the location for a major part of the textile production in the country and thus of priority concern. This outcome will address the above-mentioned problems through the following outputs and activities” indicators they should include both environmental and socio-economic indicators

- ⇒ **Output 2.2.1: Point-sources of pollution in the Lower Mohokare Sub-catchment located and mapped**
- ⇒ **Output 2.2.2: Improved water resource quality management system established**
- ⇒ **Output 2.2.3: Improved industry management system in place and point-source pollution reduced**
- **OUTCOME 2.3: Quantity and quality of groundwater resources determined and low-cost groundwater desalination plants piloted in Botswana.**

Towards the south-west of Botswana, groundwater in the Orange–Senqu basin area is characterised by high salinity and often requires further treatment to meet standards for human consumption. Moreover, in some cases, due to over-abstraction, underlying saline water is drawn into a borehole of otherwise acceptable quality. In addition, water quality deterioration results from pathogens and nitrates from unlined pit latrines, cattle droppings, spillage of oils and lubricants at borehole points, and disposal of wastewater through soak-away systems. All of these factors cause overloading of the current desalination systems. A lack of skilled human resources and high maintenance costs mean that when installed, the systems work but effectiveness is not sustainable.

- ⇒ **Output 2.3.1: Comprehensive groundwater monitoring system established and implemented and implemented in selected sub-catchment areas -**
- ⇒ **Output 2.3.2: Improved groundwater desalination technology tested in pilot sites**

**Component 3:: Addressing Changes to the Hydrological Regime through the application of the source-to-sea concept.**

Component 3 focuses on Addressing Changes to the Hydrological Regime through the application of the “Source-to-Sea concept”. This will contribute in a critical way to the removal of Barrier 4, the adverse effects of a changed hydrological regime. As indicated in Section II, the hydrological regime has been highly altered.

Key areas will include agreement on environmental flows and their implementation and the implementation of measures to sustainably rehabilitate the Orange-Senqu River Mouth.

- **OUTCOME 3.1: Basin-wide environmental Flows regime agreed and implementation supported Basin-wide water resources quality monitoring system established.**

Achieving this outcome will see the following outputs:

- ⇒ **Output 3.1.1: Existing E-flows work harmonised and integrated**

The technical work encompasses the preparatory phase of integrating the existing information on the hydrology and ecosystems needed to assess options and make decisions, and the legal and administrative provisions that need to be in place before a basin-wide e-flows regime can be implemented. The hydrological and ecosystem work required is complete, but needs to be harmonised in order to ensure comparability of findings

- ⇒ **Output 3.1.2: Basin-wide flow regime agreed through consultative process**

Based on the harmonised existing e-flows work, a suite of basin-wide development scenarios will be developed, covering a range of socio-economic development options and showcasing the resulting ecosystem protection levels. The scenarios will be presented to the basin states and agreement on a basin-wide e-flows regime for implementation will be facilitated through a consultative process.

⇒ **Output 3.1.3: Set-up, implementation and compliance monitoring of basin-wide e-flows regime supported**

Following the adoption of an agreed basin-wide e-flows regime, the basin states will be supported in setting up the necessary implementation and compliance monitoring systems required for effective implementation. Particular emphasis is placed on the coordination of national-level activities in order to ensure that a coherent and harmonised basin-wide e-flows regime is implemented in practice. The e-flows are determined for 52 nodes in the basin, several of them are below the outflow points of dams. Any adjustments to the agreed e-flows at these nodes would require a change to the dam operating rules, which, if and where required, will be one of the key elements of developing the basin-wide implementation regime

● **OUTCOME 3.2: Critical ecosystem of the Orange-Senqu River Mouth rehabilitated and sustainably managed.**

The main focus of this project will be on local interventions that: (i) improve the condition of the Orange–Senqu River mouth salt marshes; (ii) enhance the estuary nursery function to improve the stock status of collapsed/over-exploited fish species; and (iii) improve the water quality of the river flowing into the system. This will be achieved through the following outputs:

⇒ **Output 3.2.1: Natural flood plain functions restored and marked improvement in estuarine habitat condition achieved**

⇒ **Output 3.2.2: Status of over-exploited/ collapsed estuarine species improved**

⇒ **Output 3.2.3: Nutrient input from agricultural areas below Violsdrift reduced**

Nutrient inputs from the agricultural areas around violsdrift will be quantified and hotspots identified; Applicable best agricultural practices identified and strategies for implementations developed through stakeholder consultations; Best practices implemented at the hotspots according to the agreed strategy; Awareness raised on economic and environmental benefits of the application of the best practices; Water quality monitored to track the intended reduction of the nutrient load into the river.

**Component 4: Addressing Land Degradation through community-based ecosystem management**

● **OUTCOME 4.1: Invasive species controlled through integrated management in pilot areas in the Orange–Fish River basin and livelihood options based on invasive species control developed.**

⇒ **Output 4.1.1: Distribution and abundance of invasive species in the basin determined and mapped**

Establishment of the baseline is critical at the outset and will be the basis of the monitoring and evaluation programme. Groundwater levels in boreholes and wells will be assessed at different distance from the water courses

⇒ **Output 4.1.2: Prosopis in pilot areas cleared**

The work required to realise this output will be planned and designed together with Output 4.1.3.

⇒ **Output 4.1.3: Economic opportunities based on alien clearing created**

It is important to underline the fact that the design of economic opportunities is to be aimed at those opportunities generated by clearing of Prosopis and not through treating Prosopis as an income generating crop. The principle is that the income generated through associated economic opportunities is to be used to subsidize the project cost through payment for labour etc. It is important that stakeholders involved in project implementation are fully informed as to the objective of the project.

**Partnerships:**

Efforts of ORASECOM over the year to develop partnerships and a coordinated approach (GANNT chart etc.) – leading to the IWRM Plan etc.

Implementation of the SAP will be carried out under the auspices of ORASECOM and ORASECOM is also involved in the other ongoing projects with the support of international cooperating partners, the countries and the private sector. Some of these are highlighted below:

#### **Benguela Current Commission and Orange River Mouth Management Committee**

It has been concluded under a BCC supported study that the river estuary's present condition can be significantly improved through mitigation of non-flow related activities. Proposed interventions are based on and aligned with the 'Strategic Management Plan for the Orange River Mouth Ramsar site' that has been produced through a consultative process under the auspices of the GEF funded BCLME project in support of the Benguela Current Commission (BCC). This plan has since been superseded by the Draft Orange River Mouth Ramsar Site Strategic Estuarine Management Plan (Oct 2015) developed by the Orange River Mouth Management Committee (ORMMC). Work leading to Outcome 3. Will be carried out in close collaboration with the BCC and ORMMC.

#### **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)**

As part of the bilateral cooperation agreement with the SADC (renewed July 2015), the GIZ will contribute to several aspects of implementation of ORASECOM basin-wide Plan with direct implications that support implementation of the SAP. These include measures aimed at reversing land degradation (Component 4) in source areas (Khubelu Sponges Pilot Project), Development of notification and information sharing principles (Components 1 and 2) and other priority IWRM measure.

#### **Climate Resilient Infrastructure Development Facility (CRIDF)**

CRIDF contributed as a joint partner to the second Joint Basin-wide survey. It is currently supporting the Maseru Water Demand Management Project (Component 1) and the Rehoboth Effluent Re-Use Project (Component 1).

Support is likely to continue through implementation of CRIDF 2.

#### **Cap-Net**

Cap-Net UNDP, the international network for capacity development in sustainable water management, is pleased to be co-financing the UNDP-GEF SAP Implementation project. The co-financing period is set to cover 2017 – 2022, with an estimated total of 400,000 USD, or 80,000 USD per year.

In line with its mandates, Cap-Net will assist in the active dissemination and utilization of guidelines and toolkits relevant to capacity building in line with the SAP priorities in the Orange-Senqu River, directly or through our key affiliated partner networks in Africa. Cap-Net aims to cost share some selected thematic regional workshops to build capacities of the region, which contribute to the objective of the UNDP-GEF ORASECOM SAP Implementation project. Cap-Net can also contribute towards strengthening technical and/or institutional capacity required for transboundary water resources management in Africa, based on demands. Cap-Net will support the ORASECOM's efforts in strengthening joint management capacity for the basin-wide IWRM implementation and demonstrating environmental and socioeconomic benefits of ecosystem-based approach to water resources management through the implementation of SAP priority actions in the Orange-Senqu River.

#### **African Development Bank (AfDB)**

The African Development Bank (AfDB) plans to support the implementation of the ORASECOM basin wide IWRM Plan through its "ORASECOM Climate Resilient Water Investment Strategy & Plan and Multipurpose Project". This support will include a review of the plan aimed at making it operational, the identification priority actions and the feasibility study & analysis of the top priority project from the basin wide investment strategy and plan.

#### **Basin States**

The basin states are in the process of or planning a number of interventions which will support implementation of the programme.

- The Government of the Republic of Namibia is implementing initiatives relating to water quality monitoring and pollution control (Component 2) and improving the availability of water (Component 3), through the construction of the Neckertal Dam.
- The Government of the Republic of Botswana is implementing initiatives relating to water quality and pollution control, together with surface and groundwater monitoring, modelling and permitting of abstractions (Components 1 and 2). They are also investing in measures to promote sustainable land management practices and sustainable agriculture (Component 4).
- The Government of the Kingdom of Lesotho putting resources into the monitoring of river systems and effluents from point water sources (Component 2). They are also taking initiatives that address water resources monitoring, including the construction of hydrometric station, water resources modelling. Etc. Other initiatives include the investigation of water infrastructure (Malealea Dam) for enhancing storage and water availability (Component 3).
- As mentioned earlier, the Government of the Republic of South Africa is investing heavily in resolving the problem of acid mine drainage. Significant resources are also put into improving the quality of hydrological data and the modelling of water resources aimed at improving the yield of the system. A “real-time” management system has also been put in place for the Orange River to ensure that releases from the Vanderkloof and Gariep Dams are optimised.

### **Stakeholder engagement:**

The Strategic Action Programme (SAP) was developed through an intensive stakeholder consultation process. This process involved inter-sectoral dialogue aimed at ensuring integration in water resources management and, most importantly, national and basin-wide endorsement of the SAP. The political and technical guidance for the SAP came from the four basin countries, through the respective Action Plan/SAP Working Groups as well as a broader National Stakeholder Platform, each structure specifically set up for the purpose of SAP and Action Plan development. In each country, a delegate to the Orange–Senqu River Commission (ORASECOM) Technical Task Team was appointed as the national coordinator of the Action Plan/SAP process. The National Stakeholder Platforms comprised stakeholders representing a wide range of relevant role-players, including both state and non-state participants. While established initially for the purposes of Action Plan/SAP development, the aim is that National Stakeholder Platforms and Action Plan/SAP Working Groups are maintained during the course of this project.

Details of the proposed project have been developed, presented and discussed at two regional stakeholder workshops in which the stakeholders from all four countries have looked at all elements of the Project Document including the proposed outcomes and outputs, the result-based framework (especially the targets, indicators, assumptions etc.), management arrangement and stakeholder involvement during implementation.

Inter-sectoral dialogues will be even more important during the SAP and NAP implementation phase to realize the IWRM and environmental sustainability in the Orange-Senqu River basin. National Stakeholder Platforms created during the TDA-SAP development phase will be further strengthened by this project to ensure stronger cooperation among water sector, environmental sector, agricultural sector, mining sector, industries and private sectors, civil society organizations, and basin communities. In particular, discussions at the National Stakeholder Platforms are expected to make significant contribution to, and will benefit from, the implementation of Outcomes 1.2 (Joint planning capacity strengthened through improved data and information management and basin management support systems), 1.3 (SAP and country-specific Action Plans revised and updated), 1.4 (Transboundary Environmental and Social Assessment Guidelines endorsed by the basin states), 1.5 (ORASECOM’s capacity on communication, knowledge management, south-south cooperation enhanced), 2.2 (Point source pollution in Lower Mohokare Catchment reduced and improved industry standards implemented), 3.1 (Basin-wide environmental flows regime agreed and implementation supported), 3.2 (Critical ecosystem of the Orange-Senqu River Mouth rehabilitated and sustainably managed), and 4.1 (Invasive species controlled through integrated management in pilot areas in the Orange-Fish River basin and livelihood options based on invasive species control developed).

The project will support that the National Stakeholder Platforms remain active throughout the project implementation period. ORASECOM will discuss how/if they will continue supporting the National Stakeholder Platforms beyond the project lifetime, analysing the benefits they bring and the costs required to maintain them, before the project completion.

## Mainstreaming gender:

### Overview

Gender mainstreaming is one of the key principles of IWRM. However, information on gender roles and the differential access of men and women to water resources management and related services is often lacking in many water strategies and policies. For all four countries the national statistics that relate to natural resource use and water resources management are not disaggregated by gender. In the absence of such statistics, gender based indicators will be used to provide an overview of gender (in) equalities in water resources management in the basin. These indicators are important in tracking and upholding commitments in gender equality in the water sector and in sustainable development. They could measure structural inequalities such as men and women's access to water in the basin, gender participation in water related decision making structures at all relevant levels, access to water resources water management information and training participation in education and employment in the water sector, to name a few. A gender disaggregated data collection and reporting system is essential to achieve this.

Gender-based inequalities are measured using the Gender Inequality Index (GII). This index is based on three critical elements that reflect gender inequalities- i.e. reproductive health, empowerment and participation in the labour force market. The GII ranges from 0 to 1 with the higher figure indicating higher levels of gender inequality.

The findings of the most recent Gender Inequality Index Score, (Human Development Report 2013) the four countries in the basin show similar results of the GII but more diversity in the criteria as shown in the Table 2 below, which were used to calculate the GII.

Table 2: Gender-based indicators in the riparian states

Country	Seats in Parliament by women (%)	Population with secondary education (%)	Economic decision making Women (%)	Labour force participation (%)		Unemployment (%)		GII
				Women	Men	Women	Men	
Botswana	8	52	43	72	82	20	15	0.485
Lesotho	26	57	21	55	73	25	21	0.534
Namibia	25	53	25	63	69	32	23	0.455
South Africa	42	55	23	49	62	28	23	0.462

### Policy and Legal framework

All the riparian states have signed the 'Convention on the Elimination of all Forms of Discrimination against Women' (CEDAW). At a regional level, governments of the riparian states, with the exception of Botswana have signed and ratified the SADC Protocol on Gender and Development and the Charter of Fundamental Social Rights in SADC in 2008 and 2003 respectively. To varying degrees, all countries have aligned their national policies and legislation with regional and international obligations on gender equity and equality and have all developed policies on gender and development, and these are binding in the water sector and all the sectors.

The riparian states are also in the process of developing gender mainstreaming strategies to systematically address gender inequality in their development planning. Enabling conditions to implement and monitor gender equality have been created in all the riparian states through the creation of National Gender Machineries (NGM) such as

Gender Ministries and Gender Commissions that lobby and advocate for the implementation of rights and gender based approaches in development. In the water sector in the riparian states so far, only South Africa has developed a gender mainstreaming strategy which sets out a comprehensive approach to address rights and gender in the water sector.

### **Challenges of gender and water resources management in the Orange-Senqu Basin**

The following is a brief summary of the common challenges for gender mainstreaming as it relates to water resources management in the Orange-Senqu River Basin. These challenges were identified during consultative meetings with ORASECOM member states that took place in July and August 2014 as part of the work carried out to finalise the Basin-wide IWRM Plan.

- **Gender and access to water.** In the Orange-Senqu River Basin, levels of access to potable water vary considerably across the basin. Lack of access to water to meet the multi-faceted basic human needs is intrinsic to poverty (Schreiner and Van Koppen, 2002). Basic human needs including health and income mostly require water to be realized. Furthermore, poor people often are unable to meet the costs associated with accessing water, even when water resources are abundant. According to interviews carried out in Lesotho, Botswana and South Africa, women and Female Headed Households (FHH) within the Orange-Senqu Basin generally form a significant proportion of poor people that lack access to water in the basin. Reasons for lack of access to safe water by poor and marginalized people were attributed to the inadequate infrastructure, high initial water connection fees and high water tariffs which are a deterrent for many poor households within the basin.
- **Gender and disaggregated data:** Information and data on water resources in various documents (policies, strategies and national statistical documents) lacks gender related evidence in the water sector. All the riparian states of the Orange Senqu River Basin do not have gender disaggregated data on water resources management, for example household water connections, access to safe and appropriate sanitation services, water use and priorities and participation of women and men in formal and informal institutions in water resources management. This information would enable water planners and decision makers to comprehend gendered differences in water use, demands and management. Such data is crucial in understanding the demands for different groups, informs policy alternatives and program planning, as well gender monitoring of progress. This would then enable decision makers to devise appropriate strategies of increasing water access to all its citizens.
- **Gender and participation:** A rapid review of the different governance structures for water resources management at national and local levels reveals that men play a much greater role than women for a variety of reasons. While there is a fair amount of women represented in higher decision making structures within ORASECOM (40% women ORASECOM Commissioners), the equal participation and the involvement of women at the grassroots level is often inadequate and at times lacking. As a result, there is inequitable participation of poor women and men resulting in their local knowledge in water resources management often being ignored and therefore untapped.
- **Coordination between gender and water departments:** Consultations have revealed that in all the member states, little or no coordination exists between the water sector and the gender machinery. South Africa has developed a gender mainstreaming strategy for the water sector to strengthen the linkages with the gender machinery and also to institutionalize gender. Other countries within the basin however are still exploring best approaches to strengthen those linkages with the gender ministries. The sections above provide an overview of the commitments and the challenges of the riparian states to gender equity and equality. The realities on the ground point to the fact that there are still challenges with regards to the implementation of human rights and gender based approaches in water resources management. As a response to these challenges, a preliminary strategy for mainstreaming gender in the basin has been developed with the participation of the Departments of Water in each country and other stakeholders in the basin states.

### **Gender-mainstreaming, ORASECOM and strategic planning**

ORASECOM member states have recognized the importance and the linkages of gender to water resources management. This came out very clearly at the national and regional consultative meetings of the ORASECOM IWRM planning process. Recognizing the importance of gender integration, ORASECOM member states, during its regional meeting in May 2014, endorsed the development of a Gender Mainstreaming Strategy, which should form part of the IWRM plan for ORASECOM. The strategy is outlined in the plan and included as an annex. The ORASECOM Gender Mainstreaming Strategy is a framework developed to support gender mainstreaming during the implementation of projects and activities of the ORASECOM IWRM Plan. The Strategy includes an implementation plan for strategic level gender interventions. The Strategy was based on consultation with a range of stakeholders including Water Affairs departments, gender ministries, energy and water departments, NGOs civil society organisations, water utilities, SADC IWRM pilot projects and ORASECOM task team members.

The UNDP-GEF project's gender mainstreaming efforts will be guided by the ORASECOM Gender Mainstreaming Strategy and contribute to its implementation both at the basin and national level. At a regional workshop during the PPG where proposed interventions of the UNDP-GEF project was appraised, representatives of the basin States made presentations on the status of gender mainstreaming in the water sector in their respective countries. It was both clear and agreed that while there is a clear understanding on the importance of gender and the pivotal role that women play in the provision, management and safeguarding of water, it was not as clear what the critical issues were at the transboundary and strategic planning level to be addressed for effective gender mainstreaming. It was agreed that this was a gap which should be addressed and dealt with adequately in the next revision of the ORASECOM Gender Mainstreaming Strategy with the support from the UNDP-GEF project.

## **South-South and Triangular Cooperation (SSTC):**

South-South cooperation is a means of development cooperation in which developing countries assist each other by sharing technical or economic knowledge and skills to facilitate development. It differs from bilateral exchange of knowledge, skills, resources and technical know-how by developing countries, which are often buttressed by bilateral cooperation agreements, in that it is much broader as it entails political, economic and technical collaboration among developing countries (UNDP, 2005).

While the southern African region in general is cited as being relatively weak with respect to South-South cooperation, this situation within the water sector is quite positive. The SADC region is often cited in the global water sector as being the best example of water cooperation in transboundary resource management. The SADC Water Protocol is the foundation document for SADC regional integration, and serves the same purpose as the original coal, iron and steel agreements played in the creation of the European Economic Community and later the European Union. Cooperation over shared water in SADC is thus high. Within this context ORASECOM has already provided an excellent forum for South-South sharing of technology and experiences. A good example is the water resources modelling and planning software developed within the South African Department of Water Affairs and now shared with the other three basin states. During the project capacity building on this aspect will continue and shared understanding of the complex management of the Orange-Senqu Basin will support the process of getting agreement between basin states on aspects such as environmental flow requirements basin-wide.

Although Southern Africa has experienced South-South cooperation for decades, through regional cooperation arrangements such as SADC and SACU, its experience with triangular cooperation is much more recent and its effectiveness in addressing development priorities of Southern African countries is not known. Lack of knowledge of the impact of SSTC in Southern Africa is partly due to paucity of data, and also due to the lack of agreement on relevant indicators. As part of the planning of the first Joint Basin-wide water quality survey for the Orange-Senqu River Basin, ORASECOM worked with the International Commission for the Protection of the Danube River. A team of water quality specialists from ORASECOM visited the ICPDR Secretariat in June 2009 for discussions on monitoring water quality in transboundary systems. Following this visit ORASECOM decided to initiate its own first Joint Basin Survey, which took place in late October and November 2010. The ICPDR were involved with helping ORASECOM plan for their event, and representatives made two visits to the southern African region to participate in planning workshops. These visits, funded by European Union support to ORASECOM, have already proven mutually beneficial with ORASECOM gaining from lessons learnt in the two Joint Danube Surveys, and the ICPDR learning from approaches to surveying non-navigable rivers. Clearly, there are other opportunities for SSTC.

## **Contribution to the Sustainable Development Goals (SDGs):**

The proposed project will play a major role in supporting several Sustainable Development Goals (SDGs). The project will support the ORASECOM and its Member States to jointly implement the Integrated Water Resources Management in the Orange-Senqu River basin, directly contributing to the **SDG 6: Ensure availability and sustainable management of water and sanitation for all**. Water quality monitoring of the ambient water quality, reduction of pollution from industrial, agricultural and municipal pollution sources, promotion of water use efficiency, strengthening transboundary cooperation, promotion of conjunctive management of surface and ground water resources, capacity building support to local administrative units as well as community members so that they can actively participate in the catchment management activities, ensuring gender mainstreaming in water resources management practices are all supported by the project and will make significant contribution to the achievement of SDG 6. At the pilot demonstration project level, improved groundwater desalination technology will be planned, designed and implemented at pilot sites in Botswana with the aim of facilitating taking to scale. This will greatly increase the availability of water for these communities without having to tap into the strained surface waters of the system.



Implementation of the programme will also contribute significantly to **SDG15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**. The focus of Component 4 will be the control and management of invasive species which will both restore degraded land and provide some livelihood enhancement opportunities. The establishment and implementation of the environmental flow regime as well as the wetland rehabilitation activities at the Orange River mouth (Component 3) will also contribute significantly to the improvement and conservation of the riverine ecosystem, thus, contributing to SDG 15.

Further, at the overall level of programme implementation it is to be recalled that SAP largely represents the environmental component of the overall IWRM Plan, and that implementation of the SAP is fully integrated into the overall IWRM Plan. The IWRM Plan is aimed at making ORASECOM's Vision for the Orange-Senqu River Basin "*A well-managed water secure basin with prosperous inhabitants living in harmony in a healthy environment*". One of the four central strategic objectives of the IWRM Plan is to "*support socioeconomic upliftment and eradication of poverty in the basin*". Implementation of the SAP will ensure that this vision is realised in an environmentally sustainable manner. Implementation of the SAP will therefore play a major role in **the eradication of poverty: SDG1**.

One of the major development challenges identified in the basin is the increasing demand on resources. While the rate of increase of demand has slowed, and in particular, irrigation demand in South Africa, overall demand will continue to increase, mainly driven by an increasing population and a greater level of water and sanitation coverage. Water demand projections into the future take this into account and are part of the joint transboundary water resources modelling work that the project will support under Component 1.

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## V. FEASIBILITY

### Cost efficiency and effectiveness:

Implementation of the SAP will play an important role in reinforcing ORASECOM's wish to promote a basin-wide, source-to-sea approach to the management of the basin's water and associated resources. This approach is not only necessary from an ecosystem management perspective, but also from one of efficiency and effectiveness. In comparison with a sets of national projects addressing water use efficiency and water resources management, a basin-wide approach is more cost effective and efficient for a number of reasons:

- The availability of developed (controlled) water resources is a basin-wide issue. Storage management in Lesotho has an influence on the availability of water in South Africa and storage management in South Africa has an influence on what is available further downstream, in both South Africa itself and in Namibia. The potential storage at Vioolsdrift on the lower River, for example, can serve many purposes if it is designed as a transboundary project. The member States are agreed on the need to manage the Orange-Senqu system in an integrated manner with all countries participating in the planning and management process. Under Component 1, ORASECOM will support capacity building in the water resources field
- Water demand management (WDM) benefits all basin states through the making of additional water available. The identification of WDM opportunities is based on the transboundary benefits, not only the local benefits.
- ORASECOM's role in driving the basin-wide approach to water resources management is a major driver in terms of promoting south-south cooperation and experience sharing between countries with similar conditions.

## Risk Management:

As per standard UNDP requirements, the Project Manager will monitor risks quarterly and report on the status of risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. when impact is rated as 5, and when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported to the GEF in the annual PIR.

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
Basin states will not be willing to release their data for use by ORASECOM and are not willing to be subjected to the quality assurance and control measures that have been proposed to ensure confidence in the quality of the data in the database.	Political/Regulatory	I = 4 P = 1	The countries have a long-standing history of joint coordination, including data exchange, also evidenced by their contributions of data to the WIS. The project will provide the technical support to further strengthen the data exchange.	ORASECOM, Countries	
A lack of political will to implement the legislation in the basin countries and to integrate basin-wide management/ monitoring frameworks into administrative procedures, such as licensing etc.	Political/Regulatory	I = 4 P = 1	Countries have a long history of coordination and willingness to implement joint management activities, as witnessed by the ministerial endorsement of SAP and the adoption of the basin-wide IWRM Plan. The proposed activities of developing basin-wide frameworks are proposed by the countries themselves and have involved stakeholders from a wide variety of sector. It is therefore assumed that there is an ongoing willingness to develop and implement basin-wide joint management frameworks and the project will provide the necessary technical support to strengthen these frameworks.	ORASECOM, Countries	
Lack of inter-sectoral coordination and consultation is the major	Political/Strategic	I = 3 P = 2	The project is based on a SAP and Action Plans, which have been developed through a	ORASECOM, Countries	

hurdle to IWRM implementation and every effort needs to be made to overcome it at the local, national and basin-wide levels.			strong inter-sectoral, multi-country consultation process. The project will work through/with the Inter-sectoral Committees established during the SAP/ Action Plan development process and will continue to catalyze the engagement of multiple sectors beyond water sector in the SAP implementation activities.		
Poor coordination among various projects supported by different entities, leading to sub-optimal results delivery or duplication or work.	Operational	I = 3 P = 1	ORASECOM has demonstrated a strong programme coordination capacity in the last 5 years since the establishment of its permanent secretariat and continues to coordinate the various ICP funded activities in its programme. The project, through the PMU will maintain close collaboration and coordination with all relevant other ongoing initiatives under the guidance by ORASECOM.		

### Social and environmental safeguards:

The UNDP environmental and social safeguards requirements have been followed in the development of this project. In accordance with the UNDP Social and Environmental Screening Procedure (SESP), the project is categorized as low risk and – as outlined below – is not expected to have any negative environmental or social impacts.

The project aims to achieve the improved water resources management in the transboundary Orange-Senqu River basin using the ecosystem-based approach; therefore, the project interventions will result in the improved ecosystem in the targeted areas posing little risks in environmental sustainability (Principle 3 of SESP).

The project will make conscious efforts to mainstreaming gender and empower women and girls across all interventions and will make necessary budgetary provision to do so. Due to the current limited experience and best practices in identifying effective indicators to monitor and track the gender empowerment results in the transboundary water resources management and water resources planning to date (most sex-aggregated indicators well established to date are related to watsan issues), sex-aggregated indicators included in the Results Framework are rather limited and of general nature; however, the project stakeholders (both duty-bearers and right-holders) expressed their strong commitment during the project appraisal meeting that they will identify concrete gender empowerment activities as well as effective indicators to monitor progress as the project implementation progresses. Therefore, the project will pose low risk in gender equality and women’s empowerment (Principle 2 of SESP).

The capacity-building of duty-bearers, essentially ORASECOM officials at the national levels and of the Secretariat, is of critical importance if the technically and institutionally challenging outcomes are to be realized.

The project will not involve any relocation of people or alternation of their existing access to land or water. The project contribute to a long-term objective of improving the quality of water, the productivity of land, and the basin populations resilience to climate shocks, leading to improved water security and food security, through sustainable management and utilization of natural resources in the basin in the context of the basin IWRM plan. The project will be implemented in line with the IWRM principles, which fully embraces human rights-based approach, inclusive approach, and ensuring environmental sustainability.

The table below presents a summary of the identified risks, their probability and impact, as well as their significance, as indicated in the UNDP Social and Environmental Screening Procedure. The full SESP is found in Annex F.

Environmental and social grievances will be reported to the GEF in the annual PIR.

Table 3: SESP Risk Table

<b>Risk Description</b>	<b>Impact and Probability (1-5)</b>	<b>Significance (Low, Moderate, High)</b>	<b>Comments</b>	<b>Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.</b>
Risk 1: There is a risk that duty-bearers do not have the capacity to meet their obligations in the Project	I = 4 P = 2	<b>Moderate</b>	The Duty-bearers are considered as the country representatives of ORASECOM and the ORASECOM Secretariat. Many of the outcomes will depend on both their technical capacity and their availability in the face of other commitments	The project includes extensive capacity-building and will support the sustainable strengthening of the ORASECOM Secretariat. The recent institutional review of ORASECOM recommended the addition of new posts to the ORASECOM Secretariat, including a Communication and Knowledge Management expert and a Policy Analyst. Thus project will cover the costs of these two experts, whose inputs will be 100% devoted to the project. The ORASECOM has committed to finance the two posts with their ordinary budget before the end of the project implementation period to ensure the sustainability.
Risk 2: There are proposed Project activities within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection	I = 1 P = 1	<b>Low</b>	Project aims to improve status of these environmentally sensitive areas e.g. through rehabilitation of the river mouth and clearing of invasive species; therefore, expected impacts from project interventions in legally protected areas, areas with critical habitats and/or environmentally sensitive areas are positive ones, not	As the expected impacts are considered positive during the screening procedure, not negative, no ESIA or SESA is required.  The project design ensures positive impacts on legally protected areas and its adjacent areas. Although prosopis clearance activities are supported primarily in order to increase water availability in the river and aquifer system in the targeted area, clearance of prosopis (invasive alien species) will result in the improvement of habitats for native and endemic species in the targeted areas.

			negative.	
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### Sustainability and Scaling Up:

There are ample opportunities for scaling up a number of SAP implementation activities to be demonstrated by the project.. GEF investment of \$11 million towards SAP and NAP implementation is only to demonstrate the expected positive impacts from the implementation of priority activities at a limited scale, both in terms of time and financial resources invested. Therefore, the scale of expected impacts will be accordingly limited.

The project interventions will not only demonstrate selected priority activities but also support national and basin-wide policy and institutional reforms to strengthen a policy enabling environment to attract larger-scale investments for the same or similar activities demonstrated by the project. Examples of expected scaling up and replication are as follows:

- PPP and Transboundary PES under Outcome 1.1 – Within the time and resources of the project, only one or two PPP or PES can be expected to be realized at most; however, the project will support the basin states to create a policy enabling environment to realize PPP and/or PES, which will make it easier to realise PPP and/or PES in the basin in the future.
- Industrial pollution reduction effort under Outcome 2.1 and 2.2 - Within the time and resources of the project, pollution reduction achieved through demonstration would be limited; however, the hotspot analysis, pollution map, best practices, standards and mitigatino plans developed with support of the project will help direct future investments on pollution reduction in the most cost effective manner The basin River Water Quality Objectives and Water Quality Monotoring Systems to be established with the support of the project will also assist the ORASECOM and basin states to determin where and how the pollution reduction efforts should be scaled up and effectively communitie such needs with the industries active in the basin.
- Investments in low-cost groundwater desalination technologies under Outcome 2.3 – The Government of Botswana is in particular interested in the effectiveness of such investment to alleviate water shortage and to ensure water security for rural communities in the fact of climate change. The project will provide nor only best practices and lessons learned on the desalination technologies from this demonstratino but also try to improve communties livelihoods through introduction of alternative livelihood options and capacity building. If successful, this demonstration will be highly likely replicated and scaled by further investment in the future as a climate resilient development option.
- Agricultural pollution reduction efforts under Outcome 3.2 – The application of sustainabel agricultural practices often makes a business sense by reducing input costs and environmental damages of the agricultural practices at the same time. By demonstrating production cost reduction and the environmental awareness raising at the same time, we can expect private sector financing of similar activities in the future to reduce agricultural pollution in the basin. The project will also work on policy and regulartoy environment to further promote such environmentally conscious investmets in the future.

### Economic and/or financial analysis:

Not applicable.

## VI. PROJECT RESULTS FRAMEWORK

<p><b>Applicable GEF Strategic Objective and Program:</b>            GEF 6 IW 2 Catalyse investments to balance competing water-uses in the management of transboundary surface and groundwater and enhance multi-state cooperation;            -Prog 3: Advance Conjunctive management of surface and groundwater resources; and            -Prog 4: Water/Food/Energy/Ecosystem Security Nexus</p>
<p><b>Applicable GEF Expected Outcomes:</b>            Outcome 3.1: Improved governance of shared water bodies, including conjunctive management of surface and groundwater through regional institutions and frameworks for cooperation lead to increased environmental and social benefits            Outcome 3.2: Increased management capacity of regional and national institutions to incorporate climate variability and change, including improved capacity for management of floods and droughts            Outcome 4.1: Increased water/food/energy/ecosystem security and sharing of benefits on basin/sub-basin scale underpinned by adequate regional legal/institutional frameworks for cooperation.</p>
<p><b>Applicable GEF Outcome Indicators:</b>            Indicators 3.1.1. Level of capacity and sustainability of regional institutions as reported in GEF 6 IW tracking tool.            Indicator 3.1.2: Functioning inter-ministerial committees at national level as reported in GEF IW tracking tool score card.            Indicator 3.1.3: # and type of national/local reforms implemented            Indicator 3.2.1: Degree to which climatic variability and change in transboundary surface water basins and aquifers is incorporated into updated SAPs as reported in GEF IW tracking tool score card            Indicator 4.1.1: #, results and type of investments within basin/sub-basin Strategic Action Programs or equivalent development plans balancing competing water uses, climate change and promoting conjunctive use of surface and groundwater implemented.            Indicator 4.1.2: Amount of leveraged finance for SAP/SAP equivalent implementation from public/public-private partnerships.            Indicator 4.1.3: Measurable water &amp; natural resources related results and socio-economic benefits for target population, both women and men, on basin/sub-basin/ or areas of investments as reported in GEF IW tracking tool score card</p>

This project will contribute to the following Sustainable Development Goal (s): SDGs 6 and 15

This project will contribute to the following country outcome included in the UNDAF/Country Programme Document: COs to identify them in each country

This project will be linked to the following output of the UNDP Strategic Plan:  
 Output 2.5: Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use, and access and benefit sharing of natural resources, biodiversity and ecosystems, in line with international conventions and national legislation.  
 Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste.

	Objective and Outcome Indicators	Baseline	Mid-term Target	End of Project Target	Assumptions
<p><b>Project Objective:</b>            Strengthening joint management capacity for the basin-wide IWRM</p>	<ul style="list-style-type: none"> <li>Number of countries fully capacitated and participating actively in transboundary monitoring, planning and management of the basin's water</li> </ul>	<ul style="list-style-type: none"> <li>Only South Africa is adequately capacitated. Lesotho and Namibia have experience on</li> </ul>	<ul style="list-style-type: none"> <li>All four countries have attended capacity building in all aspects of transboundary planning and</li> </ul>	<ul style="list-style-type: none"> <li>At least 2 persons from each country (4) fully capacitated and all four countries participating actively in</li> </ul>	<ul style="list-style-type: none"> <li>Staff turnover challenges do not result in loss of too many capacitated staff.</li> </ul>

implementation and demonstrating environmental and socioeconomic benefits of ecosystem-based approach to water resources management through the implementation of SAP priority actions in the Orange-Senqu River basin and the resilience of ecosystems	resources	application water resources modelling and allocation models	management including training courses on modelling etc.	transboundary monitoring, planning and management of the basin's water resources	
	<ul style="list-style-type: none"> <li>Level and spatial and gender-sensitive distribution of water-related socio-economic benefits</li> </ul>	<ul style="list-style-type: none"> <li>Water accounts developed under the IWRM Plan show that benefits are far from optimal and skewed towards South Africa</li> </ul>	<ul style="list-style-type: none"> <li>An economic analysis of socioeconomic benefits expected through project interventions.</li> <li>Gender Action Plan strengthened with an analysis of expected socioeconomic benefits through gender mainstreaming efforts by the project.</li> <li>Concept paper outlining how measures, such as transboundary PES, may contribute to benefit sharing among basin populations</li> </ul>	<ul style="list-style-type: none"> <li>Socioeconomic benefits realized through project interventions, including PES, monitored and reported, in total benefits, spatial and sector distribution, and in a gender-disaggregated manner.</li> </ul>	<ul style="list-style-type: none"> <li>Adequate data are available for reliable water accounting exercise</li> <li>Time required to realize (any part of) the expected socioeconomic benefits is within the project timeframe.</li> </ul>
	<ul style="list-style-type: none"> <li>Status of ecosystems at designated points on the river system</li> </ul>	<ul style="list-style-type: none"> <li>Ecosystems are degraded to below targets at several locations including the Orange River Mouth</li> </ul>	<ul style="list-style-type: none"> <li>Plan agreed and in place to improve ecosystem status at all designated locations within the demonstration sites.</li> </ul>	<ul style="list-style-type: none"> <li>Sustainable improvement in ecosystem status is measured at least 80% of designated locations</li> </ul>	<ul style="list-style-type: none"> <li>Agreement and endorsement of harmonised basin-wide Environmental flow regime and water quality objectives</li> </ul>
<b>Component 1; Outcome 1.1;</b> ORASECOM's capacity to develop innovative financing schemes strengthened	<ul style="list-style-type: none"> <li>Number of water resources management related PPPs implemented in the basin: <ul style="list-style-type: none"> <li>Of transboundary nature</li> <li>In which ORASECOM has played key role</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Several WDM-related PPP implemented successfully in SA. Ongoing in Maseru. <ul style="list-style-type: none"> <li>ORASECOM played key role in Ekurhuleni, SA</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>At least one PPPs identified and draft agreements in place</li> </ul>	<ul style="list-style-type: none"> <li>At least one successful PPP implemented with ORASECOM support</li> </ul>	<ul style="list-style-type: none"> <li>Time required for building lasting relationship and trust between public and private sector entities.</li> <li>Level of readiness of the applicable infrastructure to implement PPP.</li> <li>Economic climate – within the current depressed income</li> </ul>

					streams it becomes challenging to secure adequate financial support from private sector entities.
	<ul style="list-style-type: none"> <li>Number of TB water resources management related PESs implemented in the basin where ORASECOM has played a role</li> </ul>	<ul style="list-style-type: none"> <li>No TB PES yet implemented</li> </ul>	<ul style="list-style-type: none"> <li>At least one transboundary PES identified and draft agreements in place</li> </ul>	<ul style="list-style-type: none"> <li>At least one transboundary PES implemented with ORASECOM support</li> </ul>	<ul style="list-style-type: none"> <li>Update by the beneficiary communities</li> <li>Absence of enabling legislative framework for implementing transboundary PES</li> </ul>
	<ul style="list-style-type: none"> <li>Level of human resources capacity within ORASECOM Secretariat in promoting and implementing PES</li> </ul>	<ul style="list-style-type: none"> <li>No specialist PES capacity within ORASECOM Secretariat</li> </ul>	<ul style="list-style-type: none"> <li>One professional within ORASECOM Secretariat fully capacitated in PES processes and implementation</li> </ul>	<ul style="list-style-type: none"> <li>As per mid-term</li> </ul>	
	<ul style="list-style-type: none"> <li>Availability of promotional material such as guides/case study documentation aimed at facilitating PPPs and PES</li> </ul>	<ul style="list-style-type: none"> <li>Limited promotional material by way of guides/case studies are available (related to the basin/region).</li> </ul>	<ul style="list-style-type: none"> <li>Promotional material for OS Basin, aimed at attracting interest in PES and supporting rapid take-up is available (role of WIS)</li> </ul>	<ul style="list-style-type: none"> <li>As per mid-term</li> </ul>	
<b>Component 1; Outcome 1.2;</b> ORASECOM's joint basin planning capacity strengthened through improved data and information management and basin management support systems	<ul style="list-style-type: none"> <li>Level of usefulness and relevance of the ORASECOM WIS (# hits and #registered users)</li> </ul>	<ul style="list-style-type: none"> <li>WIS is in operation but limited in scope</li> </ul>	<ul style="list-style-type: none"> <li>Wide range of stakeholders in all four basin states have started using the WIS</li> </ul>	<ul style="list-style-type: none"> <li>WIS is regularly consulted by wide range of stakeholders in all four basin states and beyond.</li> </ul>	<ul style="list-style-type: none"> <li>Data is collected at the national levels and made available timeously</li> </ul>
	<ul style="list-style-type: none"> <li>% of agreed transboundary environmental monitoring stations that are reporting and integrated into ORASECOM WIS.</li> </ul>	<ul style="list-style-type: none"> <li>Not yet operational in the ORASECOM WIS</li> </ul>	<ul style="list-style-type: none"> <li>50% of transboundary environmental monitoring network is reporting via the WIS</li> </ul>	<ul style="list-style-type: none"> <li>Entire transboundary environmental monitoring network is reporting via the WIS.</li> </ul>	<ul style="list-style-type: none"> <li>Capacity is available and deployed at the national levels</li> </ul>
	<ul style="list-style-type: none"> <li>Number of successful interstate water resources modelling/ planning exercises with at least 3 countries present taking place in a year</li> </ul>	<ul style="list-style-type: none"> <li>This exercise was partially carried out during preparatory phase s of the Orange-Senqu IWRM Plan but has not been continued</li> </ul>	<ul style="list-style-type: none"> <li>Minimum of one well-organized session per year attended by at least 3 of the basin states and facilitated by ORASECOM Secretariat</li> </ul>	<ul style="list-style-type: none"> <li>Minimum of one well-organized session per year attended by at least 3 of the basin states and facilitated by ORASECOM Secretariat</li> </ul>	<ul style="list-style-type: none"> <li>Countries are willing and able to make suitable participants available</li> </ul>
	<ul style="list-style-type: none"> <li>Level of capacity of ORASECOM Secretariat and individual countries in water resources modelling/planning</li> </ul>	<ul style="list-style-type: none"> <li>Capacity-building at the national and regional level has been provided during preparatory phase s of the OS</li> </ul>	<ul style="list-style-type: none"> <li>Expertise, with all four basin states are able to adjust and run the water resources models independently</li> </ul>	<ul style="list-style-type: none"> <li>As per mid-term</li> </ul>	<ul style="list-style-type: none"> <li>Staff turnover is low so that trained participants remain available</li> </ul>



		IWRM Plan and some of this capacity remains			
<b>Component 1; Outcome 1.3;</b> SAP and country-specific Action Plans revised and updated for next 5-year cycle	<ul style="list-style-type: none"> <li>• Agreement reached on conclusions and recommendations coming out of SAP1 implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Not yet done (planned for towards the end of SAP 1 implementation)</li> </ul>	<ul style="list-style-type: none"> <li>• Preliminary conclusions drafted</li> </ul>	<ul style="list-style-type: none"> <li>• Agreement reached on conclusions and recommendations coming out of SAP1 implementation and endorsed by ORASECOM Council</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
	<ul style="list-style-type: none"> <li>• Agreement reached on stakeholder-driven SAP 2 and country-based action plans for next 5-year cycle</li> </ul>	<ul style="list-style-type: none"> <li>• Not yet done (planned for towards the end of SAP 1 implementation)</li> </ul>	<ul style="list-style-type: none"> <li>• Concept Note drafted outlining key elements of SAP 2</li> </ul>	<ul style="list-style-type: none"> <li>• Agreement reached (signed off by ORASECOM Council) on stakeholder-driven SAP 2 and country-based action plans for next 5-year cycle</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<b>Component 1; Outcome 1.4;</b> Transboundary Environmental and Social Assessment Guidelines endorsed by Basin States	<ul style="list-style-type: none"> <li>• # of representatives of countries and of ORASECOM Secretariat capacitated on ESA guidelines, including gender mainstreaming</li> </ul>	<ul style="list-style-type: none"> <li>• Limited capacity on ESA guidelines and gender mainstreaming within the water sector</li> </ul>	<ul style="list-style-type: none"> <li>• ≥ 2 representatives of countries and of ORASECOM Secretariat capacitated on ESA guidelines, including gender mainstreaming</li> </ul>	<ul style="list-style-type: none"> <li>• As per mid-term</li> </ul>	<ul style="list-style-type: none"> <li>• Countries can reach consensus on SE priorities</li> <li>• Countries make progress on collection of gender disaggregated data</li> </ul>
	<ul style="list-style-type: none"> <li>• Endorsement of transboundary ESA guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• ESA guidelines limited to implications of the Revised Protocol on shared Watercourses in the SADC</li> <li>• Scientific work required to prepare draft TB ESA guidelines available</li> </ul>	<ul style="list-style-type: none"> <li>• Draft transboundary ESA guidelines available for discussion</li> <li>• Proper and sufficient advocacy work among Ministries in charge of ESA conducted.</li> <li>• Negotiation towards endorsement of the guidelines well underway.</li> </ul>	<ul style="list-style-type: none"> <li>• Transboundary ESA guidelines agreed and endorsed by ORASECOM Council</li> </ul>	<ul style="list-style-type: none"> <li>• Appropriate high level decision-makers are available and committed</li> <li>• The TB guidelines are in demand to be applied on the various proposed infrastructure projects (Vooilsdrift, Lesotho Highlands further phases, Lesotho Lowlands projects, Lesotho-South Africa-Botswana water transfer, etc.)</li> </ul>
<b>Component 1; Outcome 1.5;</b> ORASECOM's capacity on communication,	<ul style="list-style-type: none"> <li>• ORASECOM Capacity on Communication and Knowledge Management</li> </ul>	<ul style="list-style-type: none"> <li>• No Communication Expert in the ORASECOM Secretariat.</li> <li>• ORASECOM approved a</li> </ul>	<ul style="list-style-type: none"> <li>• A Communication Expert fully active with clear TOR and tangible deliverables in the</li> </ul>	<ul style="list-style-type: none"> <li>• A Communication Expert fully active with clear TOR and tangible deliverables in the</li> </ul>	<ul style="list-style-type: none"> <li>• Necessary increase of country contribution to ORASECOM agreed</li> </ul>

knowledge management, south-south cooperation enhanced		creation of the Communication Expert post in the ORASECOM Secretariat as recommended by its Institutional Review.	Secretariat supported by the project.	Secretariat financed by the ORASECOM budget.	and realized to support the Communication Expert post by the end of the year 4 of the project.
	<ul style="list-style-type: none"> <li>Enhanced South-South Cooperation</li> </ul>	<ul style="list-style-type: none"> <li>Participation in and contribution to key global and regional knowledge sharing platforms (e.g. Stockholm World Water Week, Africa Water Week, ANBO General Assembly, etc.)</li> <li>Contribution to global and regional knowledge management activities organized by GEF IW:LEARN limited to participation in conferences and workshops (e.g. GEF IW Conferences, IW:LEARN Regional Workshops)</li> </ul>	<ul style="list-style-type: none"> <li>Active participation in regional knowledge management and learning activities among RBOs and RECs organized by ANBO (with support from the UNDP-GEF ANBO Project)</li> <li>In addition to active participation and contribution to global and regional knowledge management activities organized by GEF IW:LEARN, active communication and outreach activities launched, especially using SNS.</li> </ul>	<ul style="list-style-type: none"> <li>At least one learning workshop hosted by ORASECOM to share its experience with ANBO stakeholders (RBOs, LBOs, Groundwater Commissions, RECs, AMCOW) in partnership with ANBO.</li> <li>In addition to active participation to workshops and conferences and active presence in SNS, at least three IW: Experience Notes produced disseminating lessons learned and best practices on SAP Implementation and innovative approaches, such as TB-ESA Guidelines, TB-PES, PPP.</li> </ul>	<ul style="list-style-type: none"> <li>Availability of Delegates to attend organized events.</li> </ul>
	<ul style="list-style-type: none"> <li>Enhanced Communication with ORASECOM stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>ORASECOM website regularly updated.</li> <li>Public outreach activities organized in four basin states around the World Water Day in four riparian states on ad hoc basis.</li> </ul>	<ul style="list-style-type: none"> <li>ORASECOM website regularly updated, linked to SNS updates.</li> </ul> <p>ORASECOM providing outreach materials on SAP/NAP implementation to member states to support organizing the Outreach activities in</p>	<ul style="list-style-type: none"> <li>ORASECOM website regularly updated, linked to SNS updates and videos from demonstration sites showcasing results.</li> <li>ORASECOM providing outreach materials to promote SAP implementation and its progress to member states to support organizing the</li> </ul>	<ul style="list-style-type: none"> <li>ORASECOM Communication Expert with sufficient capacity to organize all communication activities effectively.</li> </ul>

		<ul style="list-style-type: none"> <li>Public outreach activities organized in four basin states in conjunction with the 5-yearly Joint Basin Survey.</li> <li>No periodical ORASECOM report beyond the occasional production of (quarterly) newsletter supported by externally funded projects.</li> </ul>	<p>four riparian states around the World Water Day or the World Environment Day.</p> <ul style="list-style-type: none"> <li>Public outreach activities planned for the Joint Basin Survey in 2020</li> <li>ORASECOM Report produced biennially (timed for the Forum of Parties, if biennially) to showcase ORASECOM's achievements and challenges and increase its transparency and accountability.</li> </ul>	<p>Outreach activities in four riparian states around the World Water Day or the World Environment Day.</p> <ul style="list-style-type: none"> <li>Public outreach activities conducted during the Joint Basin Survey in 2020.</li> <li>Production of ORASECOM Report institutionalized in the ORASECOM budget.</li> </ul>	
<b>Component2; Outcome 2.1;</b> Basin-wide water resources quality monitoring system established	<ul style="list-style-type: none"> <li>Agreement reached on basin-wide monitoring locations and parameters</li> </ul>	<ul style="list-style-type: none"> <li>Good progress has been made on this as part of preparatory work for IWRM Plan and for basin-wide survey</li> </ul>	<ul style="list-style-type: none"> <li>Basin-wide water resources quality system is operating and providing information on a regular basis</li> </ul>	<ul style="list-style-type: none"> <li>As per mid-term</li> </ul>	<ul style="list-style-type: none"> <li>Agreement on basin wide RWQOS/Parameters for measuring WQ</li> </ul>
	<ul style="list-style-type: none"> <li>Sustainable financing system in place</li> </ul>	<ul style="list-style-type: none"> <li>Much of the network will be part of national networks and therefore covered by national budgets</li> </ul>	<ul style="list-style-type: none"> <li>Measures showing how sustainability will be ensured are demonstrated</li> </ul>	<ul style="list-style-type: none"> <li>Sustainable financing system is in place</li> </ul>	<ul style="list-style-type: none"> <li>Decision-makers recognize the value of data collected</li> </ul>
	<ul style="list-style-type: none"> <li># basin-wide stations reporting regularly/ continuously</li> </ul>	<ul style="list-style-type: none"> <li>No stations currently report through the ORASECOM WIS</li> </ul>	<ul style="list-style-type: none"> <li>50% of stations have started reporting</li> </ul>	<ul style="list-style-type: none"> <li>Improved knowledge and WQM capacity in the basin</li> </ul>	<ul style="list-style-type: none"> <li>Countries commit sufficient resources and quality control efforts to collection of useful data</li> </ul>
	<ul style="list-style-type: none"> <li>Level of confidence in WQ monitoring and reporting</li> </ul>	<ul style="list-style-type: none"> <li>Significant confidence has been established through 2 basin-wide surveys</li> </ul>	<ul style="list-style-type: none"> <li>3<sup>rd</sup> basin-wide survey completed or in progress</li> </ul>	<ul style="list-style-type: none"> <li>Strengthened institutional capacity due to improved systems, monitoring compliance and reporting</li> </ul>	<ul style="list-style-type: none"> <li>Countries commit sufficient resources and quality control efforts to collection of useful data</li> </ul>
	<ul style="list-style-type: none"> <li>Regularity of dissemination of</li> </ul>	<ul style="list-style-type: none"> <li>No regular</li> </ul>	<ul style="list-style-type: none"> <li>Information collected</li> </ul>	<ul style="list-style-type: none"> <li>Up-to-date</li> </ul>	

	information on WQ to relevant parties	dissemination of data	at 50% of stations readily available	situation/results accessible through ORASECOM WIS	
<b>Component2; Outcome 2.2;</b> Basin-wide water resources quality monitoring system established	<ul style="list-style-type: none"> <li>• % of pollution point sources on Lower Mohokare mapped and associated risks quantified</li> </ul>	<ul style="list-style-type: none"> <li>• Some information exists from a limited sampling programme</li> </ul>	<ul style="list-style-type: none"> <li>• Pollution points sources in Lower Mohokare all mapped and pollution levels/risks identified</li> </ul>	<ul style="list-style-type: none"> <li>• As per mid-term</li> </ul>	<ul style="list-style-type: none"> <li>• Good cooperation from industry / existing polluters</li> </ul>
	<ul style="list-style-type: none"> <li>• % of areas where impacts of pit latrines, mines, sand mining have been localized and understood.</li> </ul>	<ul style="list-style-type: none"> <li>• Problem is recognized but no rigorous sampling or mapping carried out</li> </ul>	<ul style="list-style-type: none"> <li>• Impact of pit latrines, mining and sand mining quantified and localized</li> </ul>	<ul style="list-style-type: none"> <li>• AS per mid-term</li> </ul>	<ul style="list-style-type: none"> <li>• Good cooperation from communities, mines and sand miners</li> </ul>
	<ul style="list-style-type: none"> <li>• Existence of agreed comprehensive strategy and DSS to support management</li> </ul>	<ul style="list-style-type: none"> <li>• No comprehensive or joined up strategy is in place</li> </ul>	<ul style="list-style-type: none"> <li>• Draft strategy agreed and in place. Plan and DSS designed and ready for stakeholder discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Comprehensive strategies, plan and DSS agreed and in place to support proper management of solid waste, sand mining issues etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Support from decision and policy makers is forthcoming</li> </ul>
	<ul style="list-style-type: none"> <li>• Levels of pollution at key reference points on the Mohokare River</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge / regular monitoring limited to two or three points on the Mohokare / Caledon ds</li> </ul>	<ul style="list-style-type: none"> <li>• Targeted industries have started implementation of measures</li> </ul>	<ul style="list-style-type: none"> <li>• Improved industry management system in place and point-source pollution reduced</li> </ul>	<ul style="list-style-type: none"> <li>• Unrestricted access to critical points in the system for data collection</li> </ul>
<b>Component2; Outcome 2.3;</b> Basin-wide water resources quality monitoring system established	<ul style="list-style-type: none"> <li>• % of overall area for which groundwater assessment is complete and aquifer potential maps available</li> </ul>	<ul style="list-style-type: none"> <li>• Only limited areas have been evaluated. Exact % to be determined during Inception Phase</li> </ul>	<ul style="list-style-type: none"> <li>• Draft Comprehensive assessment of groundwater including aquifer potential maps showing sustainable yields and water quality.</li> </ul>	<ul style="list-style-type: none"> <li>• Comprehensive assessment of groundwater including aquifer potential maps showing sustainable yields and water quality.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
	<ul style="list-style-type: none"> <li>• % of pollution points sources and associated risks, assessed and understood.</li> </ul>	<ul style="list-style-type: none"> <li>• Only a few points have been evaluated. Exact % to be determined during Inception Phase</li> </ul>	<ul style="list-style-type: none"> <li>• Inventory of pollution point sources and understanding of associated risks</li> </ul>	<ul style="list-style-type: none"> <li>• As per mid-term</li> </ul>	<ul style="list-style-type: none"> <li>• Good cooperation from communities is forthcoming</li> </ul>
	<ul style="list-style-type: none"> <li>• # demonstration sites for which appropriate desalination technology successfully and sustainably implemented</li> </ul>	<ul style="list-style-type: none"> <li>• None listed</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of appropriate desalination technology has started</li> </ul>	<ul style="list-style-type: none"> <li>• Appropriate desalination technology successfully and sustainably implemented at ≥ 3 demonstration sites</li> </ul>	<ul style="list-style-type: none"> <li>• Good cooperation from communities is forthcoming</li> </ul>
	<ul style="list-style-type: none"> <li>• % of communities to have adopted conservation and preservation techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Only a few communities using conservation and preservation techniques, exact % to</li> </ul>	<ul style="list-style-type: none"> <li>• Use of conservation and preservation techniques has started by 50% of communities</li> </ul>	<ul style="list-style-type: none"> <li>• Use of conservation and preservation techniques widely adopted (by 50% of communities)</li> </ul>	<ul style="list-style-type: none"> <li>• Benefits for the communities will be clear and evident</li> </ul>

		be determined during Inception Phase			
<b>Component 3; Outcome 3.1;</b> Basin-wide environmental Flows regime agreed and implementation supported	<ul style="list-style-type: none"> <li># nodes for which hydrology and ecosystem and resources use have been harmonized</li> </ul>	<ul style="list-style-type: none"> <li>Work was already completed for the 52 E (flows nodes but using different methodologies and at different times). Harmonization is incomplete</li> </ul>	<ul style="list-style-type: none"> <li>All existing e-flows work on hydrology and ecosystem and resources use harmonized across all basin states</li> </ul>	<ul style="list-style-type: none"> <li>As per mid-term</li> </ul>	<ul style="list-style-type: none"> <li>No surmountable challenges in harmonizing results coming from different methodologies</li> </ul>
	<ul style="list-style-type: none"> <li>% of reaches on which there is agreement on E-flow requirements</li> </ul>	<ul style="list-style-type: none"> <li>There is agreement on E-flows for several reaches but not all. Some agreements are not formalized.</li> </ul>	<ul style="list-style-type: none"> <li>Proposal on basin wide E-flow regime prepared and agreed at the working group level</li> </ul>	<ul style="list-style-type: none"> <li>Basin-wide E-flow regime agreed by all basin states through a consultative process and agreement endorsed.</li> </ul>	<ul style="list-style-type: none"> <li>Good level of cooperation between countries.</li> <li>Participation of appropriately empowered decision-makers</li> </ul>
	<ul style="list-style-type: none"> <li>% of reaches for which mechanism to ensure E-flows have been agreed</li> </ul>	<ul style="list-style-type: none"> <li>Mechanisms are in place in some parts (e.g. releases from dams in Lesotho) but have not been developed for practical application elsewhere</li> </ul>	<ul style="list-style-type: none"> <li>Proposals on mechanisms for implementation of E-Flows agreed for all sites</li> </ul>	<ul style="list-style-type: none"> <li>Mechanisms for E-flows implemented and operational.</li> </ul>	
	<ul style="list-style-type: none"> <li>% of reaches for which monitoring and evaluation and adaptive management systems have been developed and agreed</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring and evaluation is limited to a limited number of reaches (d/s of Lesotho Dams, Vaal River</li> </ul>	<ul style="list-style-type: none"> <li>Proposals on monitoring and evaluation and adaptive management systems agreed at working group level</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring and evaluation programme and adaptive management programmes agreed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>Adequate impact data is collected as part of M &amp; E programme</li> </ul>
<b>Component 3; Outcome 3.2;</b> Critical ecosystem of the Orange-Senqu River Mouth rehabilitated and sustainably managed	<ul style="list-style-type: none"> <li>Presence/non-presence of causeway, old earth-moving equipment, alien invasive plants in flood plain</li> </ul>	<ul style="list-style-type: none"> <li>Remnants of old causeway, old earth-moving equipment, alien invasive plants in flood plain affecting estuarine environment</li> </ul>	<ul style="list-style-type: none"> <li>Remnant causeway and old earth-moving equipment removed</li> </ul>	<ul style="list-style-type: none"> <li>Remnant causeway and old earth-moving equipment have been removed and alien invasive plants in the flood plain controlled</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation of mining companies and other stakeholders</li> </ul>
	<ul style="list-style-type: none"> <li>Agreement (yes/no) on formalized mouth management plan</li> </ul>	<ul style="list-style-type: none"> <li>Preliminary management plan is available</li> </ul>	<ul style="list-style-type: none"> <li>Formalized mouth management plan is agreed and in place</li> </ul>	<ul style="list-style-type: none"> <li>As per mid-term</li> </ul>	
	<ul style="list-style-type: none"> <li>Status of selected key indicator estuarine species</li> </ul>	<ul style="list-style-type: none"> <li>Selected indicator estuarine species are in collapsed state</li> </ul>	<ul style="list-style-type: none"> <li>Recovery started</li> </ul>	<ul style="list-style-type: none"> <li>Status of over-exploited/ collapsed estuarine species returned to levels of 19XX</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation of mining companies and stakeholders in supporting / facilitating data collection efforts</li> </ul>
	<ul style="list-style-type: none"> <li>Level of nutrient load in return flows and in river at selected</li> </ul>	<ul style="list-style-type: none"> <li>Nutrient loads unacceptably high</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of nutrient levels has started</li> </ul>	<ul style="list-style-type: none"> <li>Nutrient load in return flows d/s of Violsdrift</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation and interest of farmers</li> </ul>

	points	during dry season		reduced to minimal levels & water quality improved to acceptable levels	to adopt best practices
<b>Component 4; Outcome 4.1;</b> Invasive species controlled through integrated management in pilot areas in the Orange–Fish River basin and livelihood options based on invasive species control developed	<ul style="list-style-type: none"> <li>• Hectares of new invasion and rehabilitation after clearing</li> </ul>	<ul style="list-style-type: none"> <li>• Baseline level of invasion to be determined during inception phase</li> </ul>	<ul style="list-style-type: none"> <li>• Clearing programme is underway with reduction of Prosopis visible</li> </ul>	<ul style="list-style-type: none"> <li>• Prosopis invasion reduced to &lt; 25% of baseline level in at least 50,000ha of land area, and at least 30% of cleared land rehabilitated</li> </ul>	<ul style="list-style-type: none"> <li>• Good cooperation from communities / effected parties</li> </ul>
	<ul style="list-style-type: none"> <li>• Annual income of communities involved in the project</li> </ul>	<ul style="list-style-type: none"> <li>• No income currently derived from Prosopis clearance</li> </ul>	<ul style="list-style-type: none"> <li>• Income generating activities agreed and started</li> </ul>	<ul style="list-style-type: none"> <li>• Costs of community inputs covered by income generated to ensure the financial sustainability of the activities beyond the project lifetime.</li> <li>• Socioeconomic status (improvement) of participating communities monitored and recorded.</li> </ul>	
	<ul style="list-style-type: none"> <li>• % of women involved in control project and livelihood benefits</li> </ul>	<ul style="list-style-type: none"> <li>• No projects currently in place</li> </ul>	<ul style="list-style-type: none"> <li>• &gt; 50% of project team / beneficiaries are women</li> </ul>	<ul style="list-style-type: none"> <li>• Socioeconomic status of women participating in the project activities improved and recorded.</li> </ul>	<ul style="list-style-type: none"> <li>• Willingness of communities to support gender mainstreaming</li> </ul>
	<ul style="list-style-type: none"> <li>• Change in water table at selected sites</li> </ul>	<ul style="list-style-type: none"> <li>• Impact on groundwater not quantified (to be done during Inception)</li> </ul>	<ul style="list-style-type: none"> <li>• Water level monitoring system in place</li> </ul>	<ul style="list-style-type: none"> <li>• Groundwater level regularly monitored to track the effectiveness of Prosopis clearing activities on the water level in the long-run.</li> </ul>	<ul style="list-style-type: none"> <li>• Technically possible to detect change given natural variability</li> </ul>

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## VII. MONITORING AND EVALUATION (M&E) PLAN

The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP](#) and [UNDP Evaluation Policy](#). While these UNDP requirements are not outlined in this project document, the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the [GEF M&E policy](#) and other relevant GEF policies.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF Agencies.

### **M&E Oversight and monitoring responsibilities:**

Project Manager: The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Steering Committee, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

The Project Manager will develop annual work plans based on the multi-year work plan included in Annex A in Section XII, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. gender strategy, KM strategy etc..) occur on a regular basis.

Project Steering Committee (or Project Board): The Project Steering Committee will take corrective action as needed to ensure the project achieves the desired results. The Project Steering Committee will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Steering Committee will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

Project Implementing Partner (ORASECOM): The Implementing Partner is responsible for providing any and all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate. The Implementing Partner will strive to ensure

project-level M&E is undertaken by national institutes, and is aligned with national systems so that the data used by and generated by the project supports national systems.

**UNDP Country Office:** The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The annual supervision missions will take place according to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Steering Committee within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the annual GEF PIR, the *independent mid-term review* and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the [UNDP POPP](#). This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.

The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

The UNDP Country Office roles are mainly performed by UNDP South Africa as the Principal Project Resident Representative (PPRR) for this project, supported by the other three Country Offices in the participating countries as required.

**UNDP-GEF Unit:** Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

**Audit:** The project will be audited according to UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.<sup>1</sup>

Additional GEF monitoring and reporting requirements:

**Inception Workshop and Report:** A project inception workshop will be held within two months after the project manager has started his/her duty to, amongst others:

- a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project implementation;
- b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
- c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
- d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;
- e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; Environmental and Social Management Plan and other safeguard requirements; the gender strategy; the knowledge management strategy, and other relevant strategies;

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<sup>1</sup> See guidance here: <https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx>



- f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
- g) Plan and schedule Project Steering Committee meetings and finalize the first year annual work plan.

The Project Manager will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Steering Committee.

GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR.

The PIR submitted to the GEF will be shared with the Project Steering Committee. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

GEF Focal Area Tracking Tools: The following GEF Tracking Tool(s) will be used to monitor global environmental benefit results:

The baseline/CEO Endorsement GEF Focal Area Tracking Tool(s) – submitted in Annex D to this project document – will be updated by the Project Manager/Team and shared with the mid-term review consultants and terminal evaluation consultants (not the evaluation consultants hired to undertake the MTR or the TE) before the required review/evaluation missions take place. The updated GEF Tracking Tool(s) will be submitted to the GEF along with the completed Mid-term Review report and Terminal Evaluation report.

Independent Mid-term Review (MTR): An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 3<sup>rd</sup> PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and approved by the Project Steering Committee.

Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure

of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). As noted in this guidance, the evaluation will be ‘independent, impartial and rigorous’. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Steering Committee. The TE report will be publically available in English on the UNDP ERC.

The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and validate the findings and ratings in the TE report, and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

**Final Report:** The project’s terminal PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Steering Committee during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

**Mandatory GEF M&E Requirements and M&E Budget:**

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget <sup>2</sup> (US\$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	Project Coordinator UNDP Country Office	USD 25,000	USD10,000	Within two months of the Project Coordinator assuming his/her duty.
Inception Report	Project Coordinator	None	None	Within four weeks after the inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	Project Coordinator ORASECOM UNDP Country Office	None		Quarterly, annually
Monitoring of indicators in project results framework	Project Coordinator	Per year: USD 4,000	USD 5,000 per year	Annually
GEF Project Implementation	Project Coordinator,	None	USD 5,000	Annually

<sup>2</sup> Excluding project team staff time and UNDP staff time and travel expenses.

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget <sup>2</sup> (US\$)		Time frame
		GEF grant	Co-financing	
Report (PIR)	ORASECOM, UNDP Country Office and UNDP-GEF team		per year	
NIM Audit as per UNDP audit policies	UNDP Country Office	Per year: USD 15,000	USD 5,000 per year	Annually or other frequency as per UNDP Audit policies
Lessons learned and knowledge generation	Project Manager Communication Experts	USD 5,000 per year	USD 5,000 per year	Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Manager UNDP CO	None		On-going
Addressing environmental and social grievances	Project Manager UNDP Country Office BPPS as needed	None		As required
Project Steering Committee meetings	Project Manager Project Steering Committee members	USD 12,000 per meeting	USD 10,000 per meeting	At minimum annually and more often as required.
Supervision missions	UNDP Country Office	None	USD3,000 per year	Annually
Oversight missions	UNDP-GEF team	None	None	Participation in the PSC meeting annually, and troubleshooting as needed
GEF Secretariat learning missions/site visits	UNDP Country Office and Project Manager and UNDP-GEF team	USD3,000	USD3,000	To be determined.
Mid-term GEF Tracking Tool to be updated by (add name of national/regional institute if relevant)	Project Manager	0		Before mid-term review mission takes place.
Independent Mid-term Review	UNDP Country	USD 50,000	USD 10,000	Between 2 <sup>nd</sup> and 3 <sup>rd</sup> PIR.

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget <sup>2</sup> (US\$)		Time frame
		GEF grant	Co-financing	
(MTR) and management response	Office and Project team and UNDP-GEF team			
Terminal GEF Tracking Tool to be updated by (add name of national/regional institute if relevant)	Project Manager	0		Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 50,000	USD 10,000	At least three months before operational closure
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		USD 308,000	USD198,000	

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## VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

### Introduction

Roles and responsibilities of the project's governance mechanism:

The **Implementing Partner** for this project is the Orange-Senqu River Commission (ORASECOM). The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

The proposed management arrangements for project implementation are summarised in the following organigramme. These arrangements were presented to and discussed with stakeholders including the ORASECOM technical task team during a workshop on 28<sup>th</sup> and 29<sup>th</sup> April 2016.

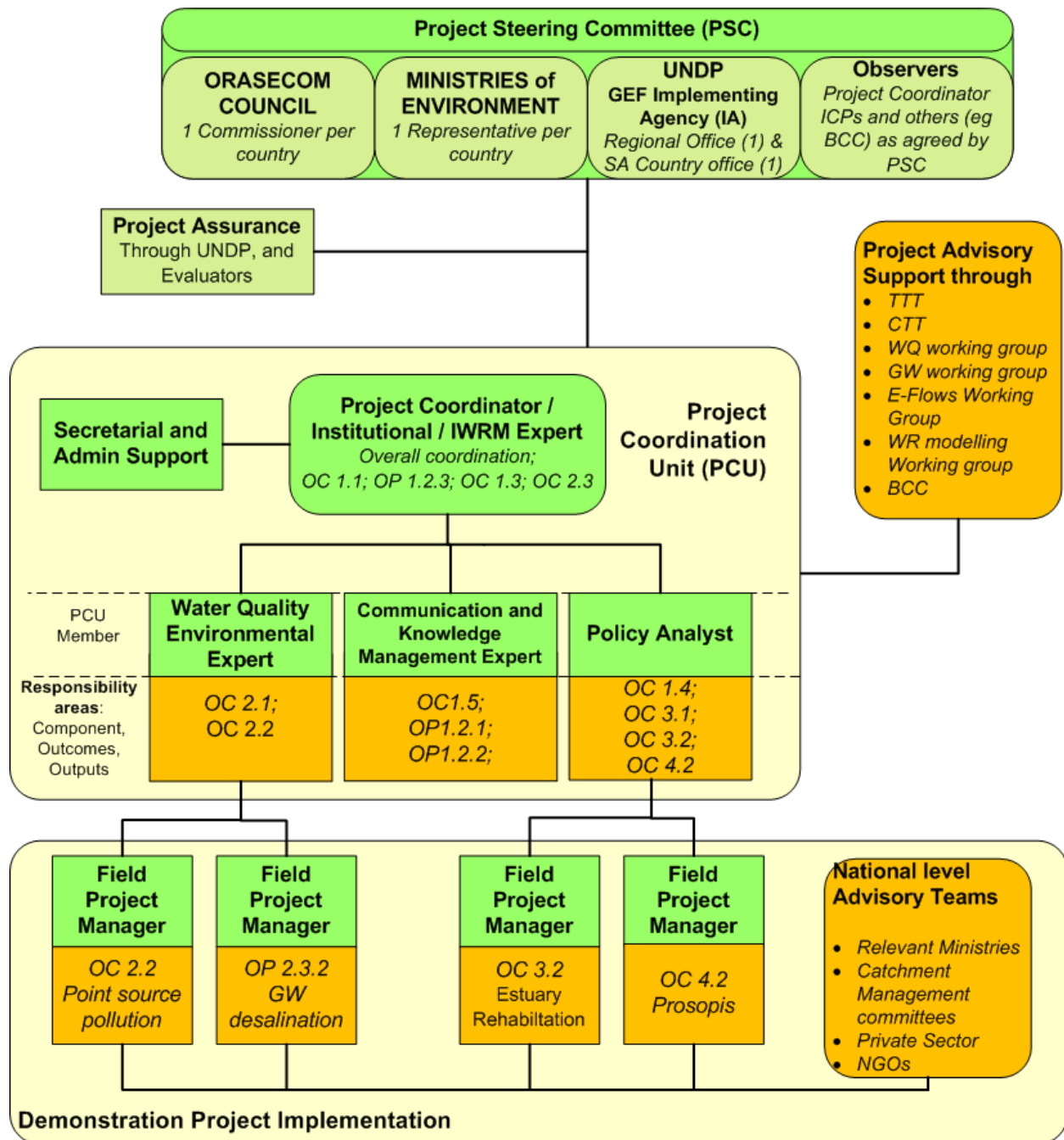


Figure 7: Overall Project Management

The terms of reference for the Project Steering Committee and Project Advisory Support are provided in Annex 3. An overview of the roles of these bodies are provided in the following paragraphs.

Section 5.2 provides details of the Project Coordination Unit.

## Overall Project Steering and Coordination

### **Project Steering Committee (PSC)**

The project Steering Committee (PSC) will be the highest decision-making body for the overall project. It should comprise membership from:

- ORASECOM Council – 1 Commissioner per country
- Ministries of Environment – 1 representative per country
- UNDP – represented by both UNDP-GEF and UNDP CO
- Observers as permitted by the permanent members listed above (e.g. representatives from other ministries, ICP representatives, BCC representatives, Private Sectors, CSOs/NGOs, etc.)

The size of the PSC and the nature of its representation means that it can only meet annually. It is proposed that the meeting should take place immediately prior to one of the bi-annual ORASECOM Council meetings.

The PSC is the highest decision making body required to steer the project implementation and provide strategic and management guidance to the Project Coordinator. The PSC plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the responsibilities of the Project Coordinator through the approval of his/her ToR and any delegation of its Project Assurance responsibilities. The PSC reviews the financial and progress reports prepared by the Project Coordinator and the Implementing Partner and approves Annual Work Plans.

In order to ensure UNDP's ultimate accountability for the project results, PSC decisions will be made in accordance to standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the PSC, the final decision shall rest with the Resident Representative of UNDP South Africa Office as the Principle Project Resident Representative of the project. The terms of reference for the Project Steering Committee are contained in Annex E of Section XII.

### **Project Advisory Support (PAS)**

The relative infrequency of the meetings of the PSC means that it would be very useful to have an intermediary body with representation of senior decision-makers when the Project Coordination Unit needs technical advisory support in between the Project Steering Committee meetings. The role of the ORASECOM's various organs in this team will be critical. The Project Advisory Support could meet as necessary, but its principal role would be to be available "on call". The Terms of Reference for the Project Advisory Support are contained in the Annex E of Section XII.

### **Project Coordination Unit**

The Project Coordination Unit (PCU) will be put in place to manage the project as a whole and led by the Project Coordinator. PCU is responsible for the day-to-day management of the project. The Terms of Reference for the PCU are contained in the Annex E of Section XII.

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## IX. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is USD 749,768,736.94. This is financed through a GEF grant of USD 10,815,137 and USD\$738,953,599.94 in co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP bank account only.

Co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process and will be reported to the GEF.

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the Project Steering Committee will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Steering Committee. Should the following deviations occur, the Project Coordinator and UNDP Country Office will seek the approval of the UNDP-GEF team as these are considered major amendments by the GEF:

- a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more;
- b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.

Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing). It is the Implementing Partner's responsibility to avoid over-expenditure. UNDP will not absorb over-expenditure without prior negotiation and agreement made with the Implementing Partner.

Refund to Donor: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Steering Committee meeting. The Implementing Partner through a Project Steering Committee decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

Financial completion: The project will be financially closed when the following conditions have been met:

- a) The project is operationally completed or has been cancelled;
- b) The Implementing Partner has reported all financial transactions to UNDP;
- c) UNDP has closed the accounts for the project;

- d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed within 12 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.



## X. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas Proposal or Award ID:	00088725	Atlas Primary Output Project ID:	00095267
Atlas Proposal or Award Title:	Support to the Orange-Senqu River		
Atlas Business Unit	ZAF 10		
Atlas Primary Output Project Title	Support to the Orange-Senqu River Strategic Action Programme Implementation		
UNDP-GEF PIMS No.	5506		
Implementing Partner	ORASECOM		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budget Account Code	ATLAS Budget Description	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)	See Budget Note:	
COMPONENT 1; OUTCOME 1.1:  ORASECOM's capacity to develop innovative financing schemes strengthened	ORASECOM	62000	GEF	71200	International Consultants	48,000	24,000	15,000	15,000	15,000		117,000	1-1A	
				71300	Local Consultants	42,000	36,000	10,050	10,050	10,050		108,150	1-1B	
				71400	Contractual Services - Individ		45,000						45,000	1-1C
				71600	Travel	28,000	18,000						46,000	1-1D
				72200	Equipment and Furniture	3,000							3,000	1-1E
				72300	Materials & Goods								0	
				72400	Communic & Audio Visual Equip								0	
				72100	Contractual Services - Companies		30,000	60,000	60,000	60,000	60,000	30,000	240,000	1-1F
				72800	Information Technology Equipmt		2,500	2,500					5,000	1-1G
				74500	Miscellaneous Expenses		467.4	467.4	467.4	467.4	467.4	467.4	2,337	1-1H
				75700	Training, Workshops and Confer	27,050			10,800	10,800			48,650	1-1I
					<b>Total Outcome 1.1</b>	<b>148,050</b>	<b>155,967</b>	<b>88,017</b>	<b>96,317</b>	<b>96,317</b>	<b>30,467</b>	<b>615,137</b>		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budget Account Code	ATLAS Budget Description	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)	See Budget Note:	
														<b>COMPONENT 1; OUTCOME 1.2:</b>
ORASECOM's joint basin planning capacity strengthened through improved data and information management and basin management support systems	ORASECOM			71300	Local Consultants	9,000	9,000	11,000	9,000	2,000	0	40,000	1-2B	
				71400	Contractual Services - Individ	0	0	0	0	0	0	0	0	
				71600	Travel	0	4,400	500	500	0	0	0	5,400	1-2C
				72200	Equipment and Furniture	0	0	0	0	0	0	0	0	
				72300	Materials & Goods	0	0	0	0	0	0	0	0	
				72400	Communic & Audio Visual Equip	0	0	0	0	0	0	0	0	
				72600	Grants	0	0	0	0	0	0	0	0	
				72800	Information Technology Equipmt	0	650	650	650	650	650	0	2,600	1-2D
				74500	Miscellaneous Expenses	0	2,275	2,275	0	0	0	0	4,550	1-2E
				75700	Training, Workshops and Confer	0	27,100	21,650	16,350	16,350	16,350	0	81,450	1-2F
					<b>Total Outcome 1.2</b>	<b>23,000</b>	<b>63,425</b>	<b>46,575</b>	<b>37,000</b>	<b>27,500</b>	<b>2,500</b>	<b>200,000</b>		
<b>COMPONENT 1; OUTCOME 1.3:</b>		<b>62000</b>	<b>GEF</b>	71200	International Consultants	0	0	0	0	44,000	20,000	64,000	1-3A	
SAP and country-specific Action Plans revised and updated for next 5-year cycle	ORASECOM			71300	Local Consultants	0	0	0	0	16,000	0	16,000	1-3B	
				71400	Contractual Services - Individ	0	0	0	0	0	0	0	0	
				71600	Travel	0	0	0	0	0	0	0	0	
				72200	Equipment and Furniture	0	0	0	0	0	0	0	0	
				72300	Materials & Goods	0	0	0	0	0	0	0	0	
				72400	Communic & Audio Visual Equip	0	0	0	0	0	0	0	0	
				72600	Grants	0	0	0	0	0	0	0	0	
				72800	Information Technology Equipmt	0	0	0	0	0	0	0	0	
				74500	Miscellaneous Expenses	0	0	0	0	0	1,000	0	1,000	1-3C
				75700	Training, Workshops and Confer	0	0	0	0	0	44,000	25,000	69,000	1-3D
					<b>Total Outcome 1.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>105,000</b>	<b>45,000</b>	<b>150,000</b>		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Don or Name	Atlas Budget Account Code	ATLAS Budget Description	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)	See Budget Note:	
<b>COMPONENT 1; OUTCOME 1.4:</b>	ORASECOM	62000	GEF	71200	International Consultants	23,300	58,600	46,600	46,600	46,600	23,300	245,000	1-4A	
Transboundary Environmental and Social Assessment Guidelines endorsed by Basin States					71300	Local Consultants	4,800	9,600	9,600	9,600	9,600	4,800	48,000	1-4B
					71400	Contractual Services - Individ							0	
					71600	Travel	5,000	10,000	10,000	10,000	10,000	5,000	50,000	1-4C
					72200	Equipment and Furniture							0	
					72300	Materials & Goods							0	
					72400	Communic & Audio Visual Equip							0	
					72600	Grants							0	
					72800	Information Technology Equipmt							0	
					74500	Miscellaneous Expenses	375	750	750	750	750	750	375	3,750
			75700	Training, Workshops and Confer	11,666	13,667	11,667	10,800	5,450			53,250	1-4E	
				<b>Total Outcome 1.4</b>	<b>45,141</b>	<b>92,617</b>	<b>78,617</b>	<b>77,750</b>	<b>72,400</b>	<b>33,475</b>	<b>400,000</b>			
<b>COMPONENT 1; OUTCOME 1.5:</b>	ORASECOM	62000	GEF	71200	International Consultants	0	12,000	12,000	12,000	12,000	0	48000	1-5A	
ORASECOM's capacity on communication, knowledge management, south-south cooperation enhanced					71300	Local Consultants	10,000	11,000	22,000	22,000	22,000		87000	1-5B
					71400	Contractual Services - Individ	0	0	0	0	0	0	0	
					71600	Travel	0	5,350	5,350	10,700	5,350	5,350	32100	1-5C
					72200	Equipment and Furniture	0	0	0	0	0	0	0	
					74200	AV & Print Production Costs	0	9,000	9,000	9,000	9,000	9,000	45000	1-5D
					72400	Communic & Audio Visual Equip	0	5,350	5,350	10,700	5,350	5,350	32100	1-5E
					72600	Grants	0	0	0	0	0	0	0	
					72800	Information Technology Equipmt	200	400	400	400	400	200	2000	1-5F
					74500	Miscellaneous Expenses	230	760	760	760	760	530	3800	1-5G
			75700	Training, Workshops and Confer	0	0	0	0	0	0	0			
				<b>Total Outcome 1.5</b>	<b>10,430</b>	<b>43,860</b>	<b>54,860</b>	<b>65,560</b>	<b>54,860</b>	<b>20,430</b>	<b>250,000</b>			
<b>Sub Total Component 1</b>						<b>226,621</b>	<b>355,869</b>	<b>268,069</b>	<b>276,627</b>	<b>356,077</b>	<b>131,872</b>	<b>1,615,137</b>		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budget Account Code	ATLAS Budget Description	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)	See Budget Note:	
<b>COMPONENT 2; OUTCOME 2.1:</b>	ORASECOM	62000	GEF	71200	International Consultants	36,000	83,750	91,750	107,750	75,750	36,000	431,000	2-1A	
Basin-wide water resources quality monitoring system established					71300	Local Consultants	9,000	31,500	31,500	31,500	12,500	0	116,000	2-1B
					71400	Contractual Services - Individual	0	10,200	8,000	0	0	0	18,200	2-1C
					71600	Travel	0	14,420	14,420	14,420	14,420	5,920	63,600	2-1D
					72200	Equipment and Furniture	0	0	0	0	0	0	0	
					72800	Information Technology Equipmt	0	2,000	1,000	27,000	1,000	0	31,000	2-1E
					72400	Communic & Audio Visual Equip	0	0	0	10,000	0	0	10,000	2-1F
					72100	Contractual Services - Companies	0	50,000	50,000	70,000	50,000	0	220,000	2-1G
					72800	Information Technology Equipmt	0	10,000	10,000	0	0	0	20,000	2-1H
					74500	Miscellaneous Expenses	0	2,400	1,200	7,200	7,200	0	18,000	2-1I
					75700	Training, Workshops and Confer	0	10,266	0	10,267	51,667	0	72,200	2-1J
				<b>Total Outcome 2.1</b>	<b>45,000</b>	<b>214,536</b>	<b>207,870</b>	<b>278,137</b>	<b>212,537</b>	<b>41,920</b>	<b>1,000,000</b>			
<b>COMPONENT 2; OUTCOME 2.2:</b>	ORASECOM	62000	GEF	71200	International Consultants	15,000	94,000	94,000	67,000	0	0	270,000	2-2A	
Point source pollution in Lower Mohokare Catchment reduced and improved industry standards implemented					71300	Local Consultants	16,000	80,000	80,000	72,000	56,000	0	304,000	2-2B
					71400	Contractual Services - Individ	0	15,000	15,000	0	0	0	30,000	2-2C
					71600	Travel	21,900	27,900	27,900	16,900	13,400	0	108,000	2-2D
					72200	Equipment and Furniture	0	42,500	42,500	25,000	0	0	110,000	2-2E
					74200	AV & Print Prod Costs	2,500	14,166	6,667	6,667	0	0	30,000	2-2F
					72400	Communic & Audio Visual Equip	1,000	1,000	1,000	1,000	1,000	0	5,000	2-2G
					72200	Equipment and Furniture	0	90,000	180,000	90,000	90,000	0	450,000	2-2H
					72800	Information Technology Equipmt	0	10,000	10,000	5,000	5,000	0	30,000	2-2I
					74500	Miscellaneous Expenses	4,000	4,000	4,000	4,000	4,000	0	20,000	2-2J
			75700	Training, Workshops and Confer	0	31,900	37,900	30,400	24,400	18,400	143,000	2-2K		
				<b>Total Outcome 2.2</b>	<b>60,400</b>	<b>410,466</b>	<b>498,967</b>	<b>317,967</b>	<b>193,800</b>	<b>18,400</b>	<b>1,500,000</b>			

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Don or Name	Atlas Budget Account Code	ATLAS Budget Description	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)	See Budget Note:	
<b>COMPONENT 2; OUTCOME 2.3:</b>	<b>ORASECOM</b>	<b>62000</b>	<b>GEF</b>	71200	International Consultants	18,000	36,000	36,000	18,000	0	0	108,000	2-3A	
Quantity and quality of groundwater resources determined and low-cost groundwater desalination plants piloted in Botswana implemented					71300	Local Consultants	48,000	96,000	96,000	64,000	16,000	0	320,000	2-3B
					71400	Contractual Services - Individ	0	100,000	100,000	0	0	0	200,000	2-3C
					71600	Travel	12,500	50,000	42,500	21,250	13,750	0	140,000	2-3D
					72200	Equipment and Furniture	8,333	29,167	29,167	8,333	0	0	75,000	2-3E
					74200	AV & Print Production Costs	0	7,500	7,500	0	0	0	15,000	2-3F
					72400	Communic & Audio Visual Equip	0	2,000	0	2,000	0	0	4,000	2-3G
					72100	Contractual Services - Companies	0	250,000	375,000	250,000	125,000	0	1,000,000	2-3H
					72800	Information Technology Equipmt	0	2,500	2,500	0	0	0	5,000	2-3I
					74500	Miscellaneous Expenses	3,000	4,000	4,000	4,000	4,000	1,000	20,000	2-3J
					75700	Training, Workshops and Confer	0	23,000	33,500	33,500	23,000	0	113,000	2-3K
				<b>Total Outcome 2.3</b>	<b>89,833</b>	<b>600,167</b>	<b>726,167</b>	<b>401,083</b>	<b>181,750</b>	<b>1,000</b>	<b>2,000,000</b>			
<b>Sub Total Component2</b>						<b>195,233</b>	<b>1,225,169</b>	<b>1,433,004</b>	<b>997,187</b>	<b>588,087</b>	<b>61,320</b>	<b>4,500,000</b>		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Don or Name	Atlas Budget Account Code	ATLAS Budget Description	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)	See Budget Note:
<b>COMPONENT 3; OUTCOME 3.1:</b>	ORASECOM	62000	GEF	71200	International Consultants	10,000	42,000	74,000	72,000	42,000	24,000	264,000	3-1A
				71300	Local Consultants	4,000	16,000	36,000	48,000	72,000	24,000	200,000	3-1B
				71400	Contractual Services - Individ	0	36,000	36,000	0	0	0	72,000	3-1C
				71600	Travel	0	23,375	32,750	18,750	18,750	9,375	103,000	3-1D
				74200	AV & Print Production Costs	0	0	0	10,000	0	0	10,000	3-1E
				72200	Equipment and Furniture	0	0	5,000	5,000	5,000	0	15,000	3-1F
				72400	Communic & Audio Visual Equip	0	0	1,500	1,500	1,500	0	4,500	3-1G
				72100	Contractual Services - Companies	0	0	0	100,000	100,000	0	200,000	3-1H
				72800	Information Technology Equipmt	0	0	7,000	7,000	7,000	0	21,000	3-1I
				74500	Miscellaneous Expenses	500	3,500	3,500	2,000	1,500	1,500	12,500	3-1J
		75700	Training, Workshops and Confer	0	31,000	37,000	15,000	15,000	0	98,000	3-1K		
					<b>Total Outcome 3.1</b>	<b>14,500</b>	<b>151,875</b>	<b>232,750</b>	<b>279,250</b>	<b>262,750</b>	<b>58,875</b>	<b>1,000,000</b>	
<b>COMPONENT 3; OUTCOME 3.2:</b>	ORASECOM	62000	GEF	71200	International Consultants	0	66,400	80,800	66,400	14,400	0	228,000	3-2A
				71300	Local Consultants	0	41,600	67,200	41,600	17,600	0	168,000	3-2B
				71200	Contractual Services - Firms	0	126,667	253,333	253,333	116,667	0	750,000	3-2C
				71600	Travel	0	28,500	37,000	26,000	8,500	0	100,000	3-2D
				74200	AV & Print Production Costs	0	38,000	68,500	40,500	18,000	0	165,000	3-2E
				72200	Equipment and Furniture	0	5,000	17,500	17,500	5,000	0	45,000	3-2F
				72400	Communic & Audio Visual Equip	0	2,000	2,500	2,500	0	0	7,000	3-2G
				72100	Contractual Services - Companies	0	25,000	25,000	25,000	25,000	0	100,000	3-2H
				72800	Information Technology Equipmt	0	1,000	6,000	1,000	0	0	8,000	3-2I
				74500	Miscellaneous Expenses	1,000	6,100	6,100	6,100	3,500	0	22,800	3-2J
		75700	Training, Workshops and Confer	0	25,500	35,500	35,200	10,000	0	106,200	3-2K		
					<b>Total Outcome 3.2</b>	<b>1,000</b>	<b>365,767</b>	<b>599,433</b>	<b>515,133</b>	<b>218,667</b>	<b>0</b>	<b>1,700,000</b>	
<b>Sub Total Component 3</b>						<b>15,500</b>	<b>517,642</b>	<b>832,183</b>	<b>794,383</b>	<b>481,417</b>	<b>58,875</b>	<b>2,700,000</b>	

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budget Account Code	ATLAS Budget Description	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)	See Budget Note:	
<b>COMPONENT 4; OUTCOME 4.1:</b>	<b>ORASECOM</b>	<b>62000</b>	<b>GEF</b>	71200	International Consultants	18,000	18,000	18,000	18,000	9,000	9,000	90,000	4-1A	
Invasive species controlled through integrated management in pilot areas in the Orange–Fish River basin and livelihood options based on invasive species control developed				71300	Local Consultants	31,500	63,000	63,000	63,000	63,000	31,500	315,000	4-1B	
						0	0	0			0	0		
					71600	Travel	30,400	30,400	30,400	30,400	15,200	15,200	152,000	4-1C
					74200	Audio Visual & Print Prod Costs	0	0	20,625	20,625	20,625	20,625	82,500	4-1D
					72200	Equipment and furniture	0	48,500	48,500	24,750	24,750	1,000	147,500	4-1E
												0		
					72200	Equipment and furniture	0						0	
					72100	Contractual Services – Company	0	202,083	202,083	127,917	127,917	0	660,000	4-1F
				75700	Training, Workshops and Confer	0	5,300	15,900	15,900	10,600	5,300	53,000	4-1G	
					<b>Total Outcome 4.1</b>	<b>79,900</b>	<b>367,283</b>	<b>398,508</b>	<b>300,592</b>	<b>271,092</b>	<b>82,625</b>	<b>1,500,000</b>		
<b>Sub Total Component 4</b>						<b>79,900</b>	<b>367,283</b>	<b>398,508</b>	<b>300,592</b>	<b>271,092</b>	<b>82,625</b>	<b>1,500,000</b>		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budget Account Code	ATLAS Budget Description	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)	See Budget Note:	
Project Management Cost	ORASECOM	62000	GEF	71200	International Consultants		7,200	7,200	34,200	7,200	34,200	90,000	PMC-1	
Project effectively managed					71300	Local Consultants	8,000	12,000	12,000	40,000	16,000	40,000	128,000	PMC-2
					71600	Travel		20,000	21,850	25,850	21,850	25,850	115,400	PMC-3
					74100	Professional Services		15,000	15,000	15,000	15,000	15,000	75,000	PMC-4
					75700	Training, workshop and conference		2,000	2,000	3,000	2,000	2,600	11,600	PMC-5
					74500	Miscellaneous		1,000	1,000	1,000	1,000	1,000	5,000	PMC-6
					74598	Direct Project Cost	8,000	15,000	15,000	15,000	15,000	7,000	75,000	PMC-7
<b>Sub Total Component PMC</b>						<b>16,000</b>	<b>72,200</b>	<b>74,050</b>	<b>134,050</b>	<b>78,050</b>	<b>125,650</b>	<b>500,000</b>		
<b>Grand Total GEF</b>						<b>533,254</b>	<b>2,538,163</b>	<b>3,005,814</b>	<b>2,502,839</b>	<b>1,774,723</b>	<b>460,342</b>	<b>10,815,137</b>		



Summary of GEF FUND:

GEF Outcome/Atlas Activity	Amount 2017 (USD)	Amount 2018 (USD)	Amount 2019 (USD)	Amount 2020 (USD)	Amount 2021 (USD)	Amount 2022 (USD)	Total (USD)
<b>Sub Total Component1</b>	226,621	355,869	268,069	76,627	356,077	131,872	<b>1,615,137</b>
<b>Sub Total Component2</b>	195,233	1,225,169	1,433,004	997,187	588,087	61,320	<b>4,500,000</b>
<b>Sub Total Component 3</b>	15,500	517,642	832,183	794,383	481,417	58,875	<b>2,700,000</b>
<b>Sub Total Component 4</b>	79,900	367,283	398,508	300,592	271,092	82,625	<b>1,500,000</b>
<b>Sub Total PMC</b>	16,000	72,200	74,050	134,050	78,050	125,650	<b>500,000</b>
<b>Grand Total GEF</b>	<b>5 33,254</b>	<b>2,538,163</b>	<b>3,005,814</b>	<b>2,502,839</b>	<b>1,774,723</b>	<b>460,342</b>	<b>10,815,137</b>

Summary of Funds:

	Amount Yr	Amount Yr 2	Amount Yr 3	Amount Yr 4	Amount Yr 5	Amount Yr 6	Total
<b>GEF</b>	<b>533,254</b>	<b>2,538,163</b>	<b>3,005,814</b>	<b>2,502,839</b>	<b>1,774,723</b>	<b>460,342</b>	<b>10,815,137</b>
Government of Botswana	689,200	1,378,400	1,378,400	1,378,400	1,378,400	689,200	<b>6,892,000</b>
Government of Lesotho	7,621,034	15,242,069	15,242,069	15,242,069	15,242,069	7,621,034	<b>76,210,343</b>
Government of Namibia	71,756,549	50,212,422	50,212,422	50,212,422	26,887,253	1,781,042	<b>251,062,109</b>
Government of South Africa	40,010,760	80,021,520	104,722,520	80,021,520	55,321,520	40,010,760	<b>400,108,600</b>
ORASECOM	187,600	375,200	375,200	375,200	375,200	187,600	<b>1,876,000</b>
UNDP CapNet	40,000	80,000	80,000	80,000	80,000	40,000	<b>400,000</b>
UK DFID CRIDF	391,667	231,667	231,667	0	0	0	<b>855,000</b>
GIZ	98,105	196,210	196,210	196,210	196,210	98,105	<b>981,048</b>
GWP-Southern Africa	56,850	113,700	113,700	113,700	113,700	56,850	<b>568,500</b>
<b>Total</b>	<b>121,385,019</b>	<b>150,389,350</b>	<b>175,558,001</b>	<b>150,122,359</b>	<b>101,369,074</b>	<b>50,944,933</b>	<b>749,768,737</b>

**Budget notes:**

NOTE	BUDGET ALLOCATIONS	ATLAS	DESCRIPTION
<b>Component 1: Outcome 1.1</b>			
1-1A	<ul style="list-style-type: none"> <li>9.75 PM @ 12,000 USD/m of international consultant for Outputs 1.1.1.and 1.1.2. This includes 4months of Project Coordinator in the PCU, responsible for Inception report and leading role in PPP and PES</li> </ul>	71200	International Consultants
1-1B	<ul style="list-style-type: none"> <li>13.5 PM of local/regional consultants working in sepcialist areas in PPP/WDM and PES</li> </ul>	71300	Local Consultants
1-1C	<ul style="list-style-type: none"> <li>For specialist services especially related to WDM implementation.</li> </ul>	71400	Contractual Services Individual
1-1D	<ul style="list-style-type: none"> <li>Inception workshop and other stakeholder consultations, espially associated with PPP and PES (esp; Lesotho and South Africa)</li> </ul>	71600	Travel
1-1E	<ul style="list-style-type: none"> <li>In support of Inception workshop</li> </ul>	72200	Equipment and furniture
1-1F	<ul style="list-style-type: none"> <li>In support of implementation of PES pilot demonstartion projects.</li> </ul>	72100	Contractual Services – Companies
1-1G	<ul style="list-style-type: none"> <li>Laptops, overhead projector and other IT</li> </ul>	72800	Information Technology Equipment
1-1H	<ul style="list-style-type: none"> <li>Unspecified small items.</li> </ul>	74500	Miscellaneous Expenses
1-1I	<ul style="list-style-type: none"> <li>Inception and stakeholder training workshops</li> </ul>	75700	Training, Workshops and Conference
<b>Component 1: Outcome 1.2</b>			
1-2A	<ul style="list-style-type: none"> <li>6.5 PM @ 12,000 USD/m of international consultant for Outputs 1.2.1.and 1.2.2. This includes 3 months of Project Coordinator in the PCU, responsible for Inception report and leading role in Output 1.2.3 (annual water resources modelling)</li> </ul>	71200	International Consultants
1-2B	<ul style="list-style-type: none"> <li>4 PM of local/regional consultants working in specialist areas in IT support and water resources modelling; Includes 4 PM of Communication and Knowledge Management Expert in the PCU</li> </ul>	71300	Local Consultants
1-2C	<ul style="list-style-type: none"> <li>In support of Inception workshop</li> </ul>	71600	Travel
1-2D	<ul style="list-style-type: none"> <li>Required for actions related to upgrading of the WIS</li> </ul>	72800	Information Technology Equipment
1-2E	<ul style="list-style-type: none"> <li>Unspecified small items</li> </ul>	74500	Miscellaneous Expenses
1-2F	<ul style="list-style-type: none"> <li>Required to support 2 major capacity building areas (workshops/training sessions, i) water resources modelling and ii) planning and design of payment for ecosystem services schemes</li> </ul>	75700	Training, Workshops and Conference
<b>Component 1: Outcome 1.3</b>			
1-3A	<ul style="list-style-type: none"> <li>5 PM @ 12,000 USD/m of international consultant for Outputs 1.3.1.and 1.3.2. This includes 4 months of Project Coordinator in the PCU, who will be largely responsible for this task. 1 PM has been amllowed for specialised technical support</li> </ul>	71200	International Consultants
1-3B	<ul style="list-style-type: none"> <li>Inputs will come from PCU members; 1PM at 8000/PM (WQ expert) + 2PM (communication and knowledge specialist and Policy Analyst at 4000/PM)</li> </ul>	71300	Local Consultants
1-3C	<ul style="list-style-type: none"> <li>Unspecified small items</li> </ul>	74500	Miscellaneous Expenses
1-3D	<ul style="list-style-type: none"> <li>Allowance is made for national and regional level workshops involving the regional and national level working groups</li> </ul>	75700	Training, Workshops and Conference

<b>Component 1: Outcome 1.4</b>			
1-4A	<ul style="list-style-type: none"> <li>• 20.42 PM @ 12,000 USD/m of international consultant. This includes 8 PM for the Project Coordinator in the PCU, who will assist the Policy Analyst and 4 for the water quality/ environmental expert in the PCU</li> </ul>	71200	International Consultants
1-4B	<ul style="list-style-type: none"> <li>• Inputs will come from the Policy Analyst in the PCU members; 12PM have been allowed spread across the project period.</li> </ul>	71300	Local Consultants
1-4C	<ul style="list-style-type: none"> <li>• Travel for workshops and meetings</li> </ul>	71600	Travel
1-4D	<ul style="list-style-type: none"> <li>• Unspecified small items</li> </ul>	74500	Miscellaneous Expenses
1-4E	<ul style="list-style-type: none"> <li>• Allowance is made for 2 or 3 regional level workshops</li> </ul>	75700	Training, Workshops and Conference
<b>Component 1: Outcome 1.5</b>			
1-5A	<ul style="list-style-type: none"> <li>• 4 PM @ 12,000 USD/m of international consultant; This includes 2 months of Project Coordinator in the PCU, responsible for overall delivery of this outcome, working closely with the communication and knowledge management expert</li> </ul>	71200	International Consultants
1-5B	<ul style="list-style-type: none"> <li>• 1 PM of regional consultants working with the Communications and Knowledge Management Specialist for whom 24 PM have been allowed.</li> </ul>	71300	Local Consultants
1-5C	<ul style="list-style-type: none"> <li>• Travel to international and regional workshops</li> </ul>	71600	Travel
1-5D	<ul style="list-style-type: none"> <li>• Large range of communication materials to be produced over the course of the project</li> </ul>	74200	AV & Print Prod Costs
1-5E	<ul style="list-style-type: none"> <li>• Equipment in support of communications</li> </ul>	72400	Communication & Audio Visual Equipment
1-5F	<ul style="list-style-type: none"> <li>• Required for actions related to upgrading of the WIS</li> </ul>	72800	Information Technology Equipment
1-5G	<ul style="list-style-type: none"> <li>• Unspecified small items</li> </ul>	74500	Miscellaneous Expenses
<b>Component 2: Outcome 2.1</b>			
2-1A	<ul style="list-style-type: none"> <li>• 36PM @ 12,000 USD/m of international consultant; This includes 24 PM for the Water Quality/environmental expert in the PCU and 4 PM for the Project coordinator</li> </ul>	71200	International Consultants
2-1B	<ul style="list-style-type: none"> <li>• 10 PM of local expertise consultancy to assist with water resource quality monitoring and with 2020 joint basinwide survey. 6 PM are allocated to the Communication and Knowledge Management Expert to ensure publicity aspects and linkages with WIS</li> </ul>	71300	Local Consultants
2-1C	<ul style="list-style-type: none"> <li>• For specialist services especially related to water quality monitoring (equipment, maintenance installation etc)</li> </ul>	71400	Contractual Services Individual
2-1D	<ul style="list-style-type: none"> <li>• Associated with workshoping of guidelines, setting up and implementation of network and basinwide survey</li> </ul>	71600	Travel
2-1E	<ul style="list-style-type: none"> <li>• Mainly specialised monitoring and associated communications equipment and software</li> </ul>	72800	Information Technology Equipment
2-1F	<ul style="list-style-type: none"> <li>• Mainly associated with the proposed joint basinwide water quality survey</li> </ul>	72400	Communication & Audio Visual Equipment
2-1G	<ul style="list-style-type: none"> <li>• Monitoring and analytical equipment and support to 2020 basinwide survey</li> </ul>	72100	Contractual Services – Companies
2-1H	<ul style="list-style-type: none"> <li>• Laptops, other IT equipment and maintenance costs</li> </ul>	72800	Information Technology Equipment
2-1I	<ul style="list-style-type: none"> <li>• Unspecified small items related to basinwide survey and overall monitoring equipment</li> </ul>	74500	Miscellaneous Expenses
2-1J	<ul style="list-style-type: none"> <li>• Regular training sessions and workshop to agree on common approaches</li> </ul>	75700	Training, Workshops and

			Conference
<b>Component 2: Outcome 2.2</b>			
2-2A	<ul style="list-style-type: none"> <li>• 18 PM @ 12,000 USD/m of international consultant; This includes 5 months of Project Coordinator in the PCU, responsible for overall delivery of this outcome, working closely with the water quality expert</li> </ul>	71200	International Consultants
2-2B	<ul style="list-style-type: none"> <li>• 20 PM of regional consultants working with the Water Quality /environmental expert in the PCU, for whom a total of 24 PM have been allocated and 6 PM for the Communication and Knowledge Management Expert.</li> </ul>	71300	Local Consultants
2-2C	<ul style="list-style-type: none"> <li>• For specialized work on pollution reduction measures</li> </ul>	71400	Contractual Services Individual
2-2D	<ul style="list-style-type: none"> <li>• Travel to workshops and for site visits and inspections</li> </ul>	71600	Travel
2-2E	<ul style="list-style-type: none"> <li>• Specialised equipment</li> </ul>	72200	Equipment and furniture
2-2F	<ul style="list-style-type: none"> <li>• Large range of communication materials to be produced over the course of the project</li> </ul>	74200	AV & Print Prod Costs
2-2G	<ul style="list-style-type: none"> <li>• Equipement in support of communications in the field (with farmers and other stakeholders)</li> </ul>	72400	Communication & Audio Visual Equipment
2-2H	<ul style="list-style-type: none"> <li>• Purcahse of equipment for farmers (livestock dipping etc)</li> </ul>	72200	Equipment and Furniture
2-2I	<ul style="list-style-type: none"> <li>• Associated with water quality monitoring systems</li> </ul>	72800	Information Technology Equipment
2-2J	<ul style="list-style-type: none"> <li>• Associated with project impelmentation in industry, agriculture and mining</li> </ul>	74500	Miscellaneous Expenses
2-2K	<ul style="list-style-type: none"> <li>• National and regional workshops. Speccif training sesssions for stakeholders in industry, agriculture and mining. Workshops for development and endorsement of policy changes</li> </ul>	75700	Training, Workshops and Conference
<b>Component 2: Outcome 2.3</b>			
2-3A	<ul style="list-style-type: none"> <li>• 9 PM @ 12,000 USD/m of international consultant; This includes 3 months of Project Coordinator in the PCU, responsible for overall delivery of this outcome, working closely with the water quality expert for whom 3 PM are alloacted. 3 PM for groundwater specialists</li> </ul>	71200	International Consultants
2-3B	<ul style="list-style-type: none"> <li>• 37 PM of regional consultants working undervthe supervision of the Project Coordinator. Inputs will be focussedn on field surveys and analysis and on implementation of pilot demonstration projects including technical supportt and prvision of capacity building. Includes 3 PM of input for Communication and Knowledge Management Expert Expert and 3PM for Policy Analyst</li> </ul>	71300	Local Consultants
2-3C	<ul style="list-style-type: none"> <li>• For specialised services associtaed with design and installation deslination and associated equipment</li> </ul>	71400	Contractual Services Individual
2-3D	<ul style="list-style-type: none"> <li>• Travel to workshops and for site visits and inspections</li> </ul>	71600	Travel
2-3E	<ul style="list-style-type: none"> <li>• Equipment for the collection and in-situ analysis of water samples collected as part of basin-wide water quality survey.</li> </ul>	72200	Equipment and Furniture
2-3F	<ul style="list-style-type: none"> <li>• Large range of communication materials to be produced over the course of the project</li> </ul>	74200	AV & Print Production Costs
2-3G	<ul style="list-style-type: none"> <li>• Equipemnt in support of communications in the field (with farmers and other stakeholders)</li> </ul>	72400	Communication & Audio Visual Equipment
2-3H	<ul style="list-style-type: none"> <li>• Contracts to set-up desalination plants and and other equipmentv for pilot demonstration projects</li> </ul>	72100	Contractual Services - Companies
2-3I	<ul style="list-style-type: none"> <li>• Associated with water quality monitoring systems</li> </ul>	72800	Information Technology

			Equipment
2-3J	<ul style="list-style-type: none"> <li>Associated with demonstration project implementation in industry, agriculture and mining</li> </ul>	74500	Miscellaneous Expenses
2-3K	<ul style="list-style-type: none"> <li>National and regional workshops. Specific training sessions for stakeholders. Site visits for experience sharing</li> </ul>	75700	Training, Workshops and Conference
<b>Component 3: Outcome 3.1</b>			
3-1A	<ul style="list-style-type: none"> <li>8 PM @ 12,000 USD/m of specialist (E-Flows) international consultant; 14 PM of Project Coordinator in the PCU, responsible for leading high level discussions with stakeholders.</li> </ul>	71200	International Consultants
3-1B	<ul style="list-style-type: none"> <li>6 PM of regional consultants working under the supervision of the Policy Analyst in the PCU. 38 PM allocated to the Policy Analyst. Inputs will be focussed evaluation of E-flows, harmonisation and integration</li> </ul>	71300	Local Consultants
3-1C	<ul style="list-style-type: none"> <li>Contracting out of water resources modelling work in support of E-Flow evaluation scenarios</li> </ul>	71400	Contractual Services Individual
3-1D	<ul style="list-style-type: none"> <li>Travel to workshops, meetings and for site visits</li> </ul>	71600	Travel
3-1E	<ul style="list-style-type: none"> <li>Large range of communication materials to be produced over the course of the project</li> </ul>	74200	AV & Print Production Costs
3-1F	<ul style="list-style-type: none"> <li>Specialised equipment</li> </ul>	72200	Equipment and furniture
3-1G	<ul style="list-style-type: none"> <li>Equipment in support of communications in the field (with farmers and other stakeholders)</li> </ul>	72400	Communication & Audio Visual Equipment
3-1H	<ul style="list-style-type: none"> <li>Contracts to support implementation of measures required for movement towards compliance at each site</li> </ul>	72100	Contractual Services - Companies
3-1I	<ul style="list-style-type: none"> <li>IT and specialised software</li> </ul>	72800	Information Technology Equipment
3-1J	<ul style="list-style-type: none"> <li>Associated with implementation of measures required for movement towards compliance at each site</li> </ul>	74500	Miscellaneous Expenses
3-1K	<ul style="list-style-type: none"> <li>National and regional workshops. Specific training sessions for stakeholders. Agreement by decision-makers on E-Flows basinwide</li> </ul>	75700	Training, Workshops and Conference
<b>Component 3: Outcome 3.2</b>			
3-2A	<ul style="list-style-type: none"> <li>11 PM @ 12,000 USD/m of specialist (Estuarine ecology) international consultant; 8 PM of Project Coordinator in the PCU, responsible for leading high level discussions with stakeholders.</li> </ul>	71200	International Consultants
3-2B	<ul style="list-style-type: none"> <li>13 PM of regional consultants working under the supervision of the Policy Analyst in the PCU. 6 PM allocated to the Policy Analyst. Inputs will be focussed on implementation of hard and soft measures at the mouth of the river. 9PM allocated to Communications and Knowledge Management Expert in the PCU</li> </ul>	71300	Local Consultants
3-2C	<ul style="list-style-type: none"> <li>Contract for the removal of causeway remnants, old earth-moving equipment etc</li> </ul>	71400	Contractual Services Individual
3-2D	<ul style="list-style-type: none"> <li>Travel to workshops, meetings and for site visits</li> </ul>	71600	Travel
3-2E	<ul style="list-style-type: none"> <li>Large range of communication materials to be produced over the course of the project</li> </ul>	74200	AV & Print Production Costs
3-2F	<ul style="list-style-type: none"> <li>Specialise equipment</li> </ul>	72200	Equipment and Furniture
3-2G	<ul style="list-style-type: none"> <li>Equipment in support of communications in the field (farmers and other stakeholders)</li> </ul>	72400	Communication & Audio Visual Equipment
3-2H	<ul style="list-style-type: none"> <li>Contracts to support implementation of best practices on irrigation farms upstream of Vioolsdrift</li> </ul>	72100	Contractual Services - Companies
3-2I	<ul style="list-style-type: none"> <li>IT and specialised software</li> </ul>	72800	Information Technology

			Equipment
3-2J	<ul style="list-style-type: none"> <li>Associated with implementation of measures at estuary and at irrigation schemes</li> </ul>	74500	Miscellaneous Expenses
3-2K	<ul style="list-style-type: none"> <li>National and regional workshops. Specific training sessions for stakeholders.</li> </ul>	75700	Training, Workshops and Conference
<b>Component 4: Outcome 4.1</b>			
4-1A	<ul style="list-style-type: none"> <li>3.5 PM @ 12,000 USD/m of specialist biologist international consultant; 1 PM of Project Coordinator in the PCU, responsible for leading high level discussions with stakeholders.</li> </ul>	71200	International Consultants
4-1B	<ul style="list-style-type: none"> <li>Majority of allocation is for local consultants and other expertise, (aprox 70 PM). 4 PM allocated to the Water Quality/environmental expert. Inputs will be focussed on implemntation of hard and soft measures. 6PM allocated to Communications and Knowledge Managemnt Expert in the PCU</li> </ul>	71300	Local Consultants
4-1C	<ul style="list-style-type: none"> <li>Travel to workshops, meetings and for site visits</li> </ul>	71600	Travel
4-1D	<ul style="list-style-type: none"> <li>Large range of communication materials to be produced over the course of the project</li> </ul>	74200	AV & Print Production Costs
4-1E	<ul style="list-style-type: none"> <li>Specialised equipment for prosopis removal and in support of associated livelihood activities</li> </ul>	72200	Equipment and furniture
4-1F	<ul style="list-style-type: none"> <li>Contracts to support implementation of prosopis remaval programmes and livelihood enhancement projects</li> </ul>	72100	Contractual Services Company
4-1G	<ul style="list-style-type: none"> <li>National and regional workshops. Specific training sessions for stakeholders.</li> </ul>	75700	Training, Workshops and Conference
<b>Project Management Component</b>			
PMC-1	<ul style="list-style-type: none"> <li>i) 3PM of PC over project duration for progress reports, PSC meeting prearation etc; ii) 2 x 2PM for Mid-term Review and 2 x 2PM for Terminal Review</li> </ul>	71200	International Consultants
PMC-2	<ul style="list-style-type: none"> <li>i) 24 PM (20% of 60 months each) of finance and admin officers time for financial, HR and admin reporting; ii) 2 x 2PM for Mid-term Review and 2 x 2PM for Terminal Review</li> </ul>	71300	Local Consultants
PMC-3	<ul style="list-style-type: none"> <li>Total of \$15,000 per MTR / TR (travel and per diem). For PSC annually, GEFSec leaning lessons etc</li> </ul>	72100	Travel
PMC-4	<ul style="list-style-type: none"> <li>Annual (5) audit @15,000/year;</li> </ul>	74100	Professional Services
PMC-5	<ul style="list-style-type: none"> <li>For PSC</li> </ul>	75700	Training, workshop and conference
PMC-6	<ul style="list-style-type: none"> <li>Various unspecified small items associated with PSC etc</li> </ul>	74500	Miscellaneous
PMC-7	<ul style="list-style-type: none"> <li>Cost assoicated with Direct Project Support provided by UNDP</li> </ul>	74598	DPC

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## XI. LEGAL CONTEXT

It is expected that each set of activities to be implemented in the target countries will be governed by the provisions of the Standard Basic Cooperation Agreement concluded between the Government of the recipient countries concerned and UNDP.

**Since the current project is a global/ multi country and regional one, the following stands:**

This project forms part of an overall programmatic framework under which several separate associated country level activities will be implemented. When assistance and support services are provided from this Project to the associated country level activities, this document shall be the "Project Document" instrument referred to in: (i) the respective signed SBAs for the specific countries; or (ii) in the [Supplemental Provisions](#) attached to the Project Document in cases where the recipient country has not signed an SBA with UNDP, attached hereto and forming an integral part hereof.

This project will be implemented by ORASECOM ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

The responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. The Implementing Partner shall: (a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried; (b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The Implementing Partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document

Any designations on maps or other references employed in this project document do not imply the expression of any opinion whatsoever on the part of UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

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## **XII. MANDATORY ANNEXES**

- A. Multiyear Workplan
- B. Monitoring Plan
- C. Evaluation Plan
- D. GEF Tracking Tool (s) at baseline
- E. Terms of Reference for Project Steering Committee, Project Manager, Chief Technical Advisor and other positions as appropriate
- F. UNDP Social and Environmental and Social Screening Template (SESP)
- G. Environmental and Social Management Plan (ESMP) for moderate and high risk projects only
- H. UNDP Project Quality Assurance Report
- I. UNDP Risk Log
- J. Results of the capacity assessment of the project implementing partner and HACT micro assessment
- K. Additional agreements



## Annex A. Multi Year Work Plan:

COMPONENT 1 Outcomes, Outputs, Activities and Sub-activities with timelines																							
Outcome / Output	Task	Sub-task	Responsible Party	2017		2018				2019				2020				2021				2022	
				3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Outcome 1.1: ORASECOM's capacity to develop innovative financing schemes strengthened.  <b>Output 1.1.1: Innovative PPP schemes developed under the auspices of ORASECOM, building on successful pilot project (with Ekurhuleni municipality)</b>	Inception Report and Meeting	Review relevant PPP experiences, including especially Ekurhuleni Municipality	ORASECOM																				
		Draft short concept note on lessons learnt and guidelines for further demonstration projects, replicability and potential and constraints for taking to scale as annex to Inception Report	ORASECOM																				
		Hold Inception Workshop, present Inception Report and finalise	ORASECOM																				
	Identify new PPP schemes for implementation	Identify potential target municipalities and where possible potential private sector partners (especially South Africa, but also Namibia and Lesotho)	ORASECOM																				
		Hold discussions with potential PP partners and agree on projects to be designed and implemented, and roles and responsibilities of partners.	ORASECOM																				
	Develop new PPP schemes	Plan and design water demand management schemes for a minimum of three municipalities	ORASECOM																				
		Finalise implementation arrangements with stakeholders	ORASECOM																				
		Implement water demand management schemes in a minimum of three municipalities	ORASECOM																				
	Monitoring and Evaluation	Design monitoring and evaluation system	ORASECOM																				
		Agree on accounting system and indicators with stakeholders	ORASECOM																				
		Implement monitoring and evaluation system	ORASECOM																				
	Outcome 1.1: ORASECOM's capacity to develop innovative financing schemes strengthened.  <b>Output 1.1.2: Potential for implementation of transboundary PES schemes in the basin explored and PES project concepts developed</b>	Inception Report and meeting	Desktop review national, regional and international level practices and experiences in implementation of Payment of Ecosystem Services (PES) schemes	ORASECOM																			
Estimates of potential savings resulting from upstream environmental protection services			ORASECOM																				
Discussions with stakeholders on potential for implementation of transboundary PES focussing on PES by downstream users for upstream environmental protection services			ORASECOM																				
Draft short concept note outlining options and potential projects for implementation of PES schemes at the transboundary and national levels including first level cost-benefit analysis (Annex to Inception Report)			ORASECOM																				
Hold Inception Workshop, present Inception Report and finalise work programme			ORASECOM																				
Planning and design of Payment for Ecosystem Services Schemes		Hold discussions with stakeholders in the upper catchment (Lesotho) and potential beneficiaries downstream in order to finalise conceptual design	ORASECOM																				
		Plan and design at least 2 transboundary PES schemes aimed demonstrating payment for upstream catchment management and environmental management services	ORASECOM																				
		Finalise agreement between all stakeholders including the role of ORASECOM	ORASECOM																				
Implementation of Payment for Ecosystem Services Schemes		Appointment of project management, project steering committee and Project Inception Phase	ORASECOM																				
		Implement projects	ORASECOM																				
		Mid-term review	ORASECOM																				
		End-of-Project report and plans for continued operation	ORASECOM																				
Monitoring and Evaluation		Design monitoring and evaluation system	ORASECOM																				
		Agree on accounting system and indicators with stakeholders	ORASECOM																				
		Implement monitoring and evaluation system	ORASECOM																				



Outcome 1.3: SAP and country-specific Action Plans revised and updated for next 5-year cycle  <b>Output 1.3.1: SAP and country-based Action Plans reviewed through consultative process, taking into consideration updated anticipated impacts from climate variability and change</b>	Preparation for review process	Set up national level and regional SAP working groups	ORASECOM																								
		Review results and challenges of implementation of national level actions plans	ORASECOM																								
		Review results and challenges of implementation of first SAP (SAP 1)	ORASECOM																								
	Stakeholder-driven report on National level action plans and SAP 1.	Draw up SAP 1 Report with the support of the regional and national working groups	ORASECOM																								
		Agree on conclusions and recommendations for carrying forward to a further five years of SAP implementation	ORASECOM																								
		Circulate for comments an inputs from key stakeholders and present draft to Project Steering Committee	ORASECOM																								
Outcome 1.3: SAP and country-specific Action Plans revised and updated for next 5-year cycle  <b>Output 1.3.2: Revised SAP and country-based Action Plans for the next 5-year cycle agreed by Basin States</b>	Develop revised SAP and country-based action plans for the next 5 year cycle	Based on assessments of SAP 1 and national action plans, together with consideration of recommendations identify main axes for SAP 2	ORASECOM																								
		Develop first draft of Strategic Action Programme 2 in close consultation with SAP and national working groups	ORASECOM																								
		Finalise draft report and draft PIF for SAP 2.	ORASECOM																								
	Endorsement of the the SAP and country-based action plans for the next 5 year cycle	Circulation (and presentation) of SAP 2 to ORASECOM task teams and selected stakeholders for review and comments	ORASECOM																								
		Revision of SAP 2 based on comments and suggestions received	ORASECOM																								
		Presentation to and endorsement of SAP by ORASECOM Council	ORASECOM																								
Outcome 1.4: Transboundary Environmental and Social Assessment Guidelines endorsed by Basin States  <b>Output 1.4.1: Tb-ESA Guidelines developed through a multi-sectoral, multi-disciplinary, multi-country consultation process</b>	Review and update work done to date	Review of work done within the basins states and with SADC Water Sector with respect to ESA/SSEA guidelines and practices	ORASECOM																								
		Review international guidelines, best practices and case studies in the development of ESA guidelines, including gender aspects and their implementation	ORASECOM																								
		Compile concept paper summarising experience and best practices and making recommendations for development of ESA guidelines	ORASECOM																								
	Provide capacity-building, technical support and experience-sharing to Member States	Develop capacity building programme for presentation to and support of ORASECOM (to include training session and ongoing support to basin states and ORASECOM) on ESA guidelines, including gender mainstreaming	ORASECOM																								
		Present training sessions at regional workshops	ORASECOM																								
		Put in place system for provision of ongoing support to basin states	ORASECOM																								
	Carry out consultations aimed at finalising draft recommendations for endorsement by member states	Carry out consultations with decision-makers in each country and in regional forum aimed at agreeing details of transboundary ESA guidelines	ORASECOM																								
		Finalise draft transboundary ESA guidelines	ORASECOM																								
	Member States endorse Transboundary ESA guidelines	Present draft ESA guidelines to member states for their review and endorsement	ORASECOM																								
		Taking into account comments, finalise transboundary ESA guidelines for endorsement	ORASECOM																								
Member States endorse transboundary ESA Guidelines		ORASECOM																									

<p>Outcome 1.5: ORASECOM's capacity on communication, knowledge management, south-south cooperation enhanced</p> <p><b>Output 1.5.1: Lessons learned and best practices on SAP implementation (esp. innovative approaches such as Tb-ESA Guideline application and Source-to-Sea applications) shared widely with African RBOs and Regional Economic Communities through ANBO and AMCOW and globally through IW:LEARN and other global fora, including the active participation in IW:LEARN related</b></p>	Strengthen learning, knowledge and technical exchange amongst member states	Conduct an assessment of member states capacity (knowledge, skills) needs relevant to transboundary water resources management	ORASECOM																				
		Develop capacity building programmes for the four member states (to include policy, technical, managerial aspects)	ORASECOM																				
		Facilitate capacity development and information exchange sessions (workshops, meetings, training, exposure visits)	ORASECOM																				
	Promote partnerships between ORASECOM and other RBOs	Enter into agreements with other RBOs targeted at learning, information and skills exchange	ORASECOM																				
		Facilitate annual RBOs learning events	ORASECOM																				
		Participate in relevant regional and African-wide meetings and workshops on transboundary water management	ORASECOM																				
		Contribute to IW learning agenda through exchange of knowledge and sharing of best practices at international level	Participate in relevant events at international level on transboundary water management	ORASECOM																			
	Contribute to IW:LEARN related activities		ORASECOM																				
	<p>Outcome 1.5: ORASECOM's capacity on communication, knowledge management, south-south cooperation enhanced</p> <p><b>Output 1.5.2: At least 1 communication material produced and disseminated/year from Year 2 of implementation.</b></p>	Produce and disseminate communication material	Synthesise results of project into a wide range of communication materials	ORASECOM																			
Disseminate material			ORASECOM																				
Facilitate feedback to continually improve on the communication material			ORASECOM																				

COMPONENT 2 Outcomes, Outputs, Activities and Sub-activities with timelines

Outcome / Output	Tasks	Sub-tasks	Responsible Party	2017		2018				2019				2020				2021				2022		
				3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	
Outcome 2.1: Basin-wide water resources quality monitoring system established  <b>Output 2.1.1: Basin-wide water (resources) quality guidelines and monitoring systems developed</b>	Develop basin-wide RWQOs	Collate, review and analyse existing basin-wide water quality data and existing RWQOs at any monitoring points	ORASECOM																					
		Determine and describe the current and future water usage and discharge	ORASECOM																					
		Based on the data and information analysed, understand the key water requirements and ecological requirements for the basin	ORASECOM																					
		Develop and set the basin wide RWQOs, in consultation with stakeholders	ORASECOM																					
	Develop water resource and water quality management guidelines	Develop measures and guidelines to support achievement of RWQOs, including related monitoring requirements	ORASECOM																					
		Set out specific management actions that relate to source control, mitigation measures, resource planning, climate impacts, and ecological requirements	ORASECOM																					
	Make recommendations on improving the water quality monitoring network to support management guidelines	Identify areas of improvement/expansion for the water quality network aimed at monitoring of achievement of RWQOs.	ORASECOM																					
		Harmonise and integrate existing monitoring networks and data capture and storage systems, providing linkages to ORASECOM WIS (see Component 1)	ORASECOM																					
		Provide technical support to member states to support improvement of monitoring network.	ORASECOM																					
		Develop capacity building guideline for use and O&M manuals for upkeep of monitoring network	ORASECOM																					
Make data more accessible	Working with WIS management and support team, propose mechanisms for improving access to water quality information	ORASECOM																						
	Provide technical support to the WIS management and support team in implementation of proposed data access and sharing measures	ORASECOM																						
Outcome 2.1: Basin-wide water resources quality monitoring system established  <b>Output 2.1.2: Periodic water resources quality monitoring and data sharing carried out and water quality year-books produced</b>	Develop reporting requirements for water quality monitoring	Develop and agree, in consultation with stakeholders, on the type, frequency and quality of data required	ORASECOM																					
		Develop monitoring, assessment and reporting actions on water quality (compliance measures for RWQOs)	ORASECOM																					
		Disseminate information to member states	ORASECOM																					
	Establishment and build capacity of pollution officers/champions	Identify pollution officers/champions in each member state	ORASECOM																					
		Build capacity of pollution officers to monitor, assess, control, enforce, guide and report on water quality	ORASECOM																					
		Ensure capacity building around all aspects water quality and water quality management are captured in the overall ORASECOM Capacity Building plan	ORASECOM																					
	Develop a water quality yearbook	Compile information annually to present in a water quality yearbook	ORASECOM																					
		Disseminate yearbook to all interested and affected parties	ORASECOM																					
		Develop interactive user-friendly web-based version of the water quality yearbook, accessible via the ORASECOM WIS.	ORASECOM																					
	Outcome 2.1: Basin-wide water resources quality monitoring system established  <b>Output 2.1.3: Joint Basin Survey supported in 2020</b>	Preparations for the 2020 Survey	Outline the expectations and outcomes of the Joint Basin Survey and get sign off from basin countries for the 2020 survey	ORASECOM																				
Form organising team with representation of member states, ORASECOM Secretariat and contracted parties			ORASECOM																					
Plan all details of the 2020 survey (objectives, technical aspects, communication/publicity aspects, logistical requirements for data collection and analyses)			ORASECOM																					
Determine human and financial resource requirements to support the 2020 survey (implementation of the survey and requirements for analysis and reporting)			ORASECOM																					
Submit detailed plan to ORASECOM for approval			ORASECOM																					
Carry out Joint Basin Survey		Collect water quality samples from all locations and carry out in-situ analyses as per plan	ORASECOM																					
		Provide capacity building to survey team members	ORASECOM																					
		Hold open days (one in each country) aimed at promoting the survey, water quality issues and ORASECOM, including focus on schools	ORASECOM																					
Draft and finalise Reports		Analysis of samples including cross-checking of second samples by different laboratories	ORASECOM																					
		Draft report on the 2020 Survey and comparison of the results with previous surveys (2015 and 2010), including recommendations for actions where necessary	ORASECOM																					
	Present reports to ORASECOM and stakeholders	ORASECOM																						
		Finalise reports	ORASECOM																					

<p>Outcome 2.1: Basin-wide water resources quality monitoring system established</p> <p><b>Output 2.1.4: Pollution hotspots identified and pilot interventions on pollution control demonstrated</b></p>	<p>Identify pollution hotspots</p>	Review current basin water quality data to determine pollution hotspots to address AMD & salinisation, eutrophication and POPs	ORASECOM	■	■	■																																			
		Identify gaps and challenges to fully understanding and addressing WQ issues	ORASECOM			■	■																																		
		Develop comprehensive pollution map and update accordingly	ORASECOM			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■																				
	<p>Prioritise pollution hotspots</p>	Develop and agree, in consultation, on the prioritisation criteria	ORASECOM			■	■																																		
		Apply prioritisation criteria to develop prioritisation list	ORASECOM				■	■																																	
		Integrate prioritised needs into broader basin plans	ORASECOM																																						
	<p>Develop high-level mitigation action plans</p>	Evaluate different options/best practice in order to mitigate prioritised pollution hotspots based on resource capacity (financial, human etc)	ORASECOM				■	■																																	
		Develop mitigation plans to align with basin RWQOs for short, medium and long term	ORASECOM						■	■																															
		Disseminate plans to relevant authorities for implementation	ORASECOM																																						
	<p>Monitor and evaluate mitigation action plan</p>	Draw up monitoring, evaluation and mitigation action plan in consultation with stakeholders	ORASECOM																																						
		Monitor and evaluate (annual monitoring, mid term and end of term evaluations)	ORASECOM																																						
	<p>Outcome 2.2: Point source pollution in Lower Mohokare Catchment reduced and improved industry standards implemented</p> <p><b>Output 2.2.1: Point-sources of pollution in the Lower Mohokare Sub-catchment located and mapped</b></p>	<p>Assess and document point sources of pollution (mainly textile factories) within sub-catchment</p>	Collate inventory of all textile industries and their specific location within the country	ORASECOM	■	■																																			
			Evaluate and document their wastewater management practices	ORASECOM			■	■																																	
			Document the direct point sources and non point sources of pollution for all industries	ORASECOM				■	■																																
		<p>Document the contribution from non-point sources in the sub-catchment</p>	Identify areas where NPS pollution is an issue and prioritise hotspots/	ORASECOM				■	■																																
Determine feasibility of expanding monitoring network to these NPS hotspots			ORASECOM																																						
Monitor and report on NPS Activity			ORASECOM																																						
<p>Integrate available data onto the map and produce maps to identify pollution hotspots</p>		Collate all available data: Pollution hotspots within Mohokare catchment (Lesotho and RSA)	ORASECOM				■	■																																	
		Setup Pollution database register, Assess and Evaluate the Pollution Hotspots	ORASECOM																																						
		Produce a Pollution Map for the sub-catchment	ORASECOM																																						
<p>Assess the impact of mining activities on water resources quality</p>		Assess the siltation ponds where applicable and potential for infiltration to GW	ORASECOM				■	■																																	
		Assess the effluent discharge (slurry) emanating from the mine and presence of heavy/toxic substances	ORASECOM																																						
		Develop the monitoring of effluent quality frequency and spot checks	ORASECOM																																						
<p>Assess the impact of sanitation (pit latrines) on groundwater resources</p>		Liaise with DRWS for standards set for construction of VIP latrines	ORASECOM				■	■																																	
		Demarcate the pilot area for monitoring the GW quality using existing boreholes.	ORASECOM																																						
<p>Assess the impact of sand mining on water resources quality and land degradation</p>		Develop sampling routine from selected boreholes/wells based on the weather patterns i.e. Wet seasons and dry seasons and analyse as necessary	ORASECOM																																						
		Study the river morphology and the erosion potential of the river banks where sand is mined	ORASECOM					■	■																																
		Assess the erosion potential of the upper catchment of the sand mining sites	ORASECOM																																						
		Regularize sampling for water quality parameters upstream of sand mining site and downstream of the site to assess impacts	ORASECOM																																						
		Monitor volumetric mining of sand per predetermined time i.e per week, per month, etc.	ORASECOM																																						

Outcome 2.2: Point source pollution in Lower Mohokare Catchment reduced and improved industry standards implemented  <b>Output 2.2.2: Improved water resource quality management system established</b>	Develop inventory of chemicals and licensing system for chemicals, including agricultural pesticide use in the country	Conduct a study on the chemicals that are used in Lesotho for industry, agriculture, etc. and document their origins	ORASECOM	■																				
		Based on the Conventions that Lesotho is signatory to, prepare a report on how to manage the chemicals that are undesirable	ORASECOM																					
		Based on the industry type, document the quantity of chemicals that is used and how the end product (waste) is treated or disposed issue licence and monitor adherence	ORASECOM																					
	Establish an integrated system of information management and decision making support	Conduct a study on potential pollutants in the Lower Mohokare Pollutants	ORASECOM		■																			
		Form a Lower Mohokare catchment committee aimed to oversee the pollution matters and regularise their meetings.	ORASECOM			■																		
		Capacitate the above committee to enable it to ferry the management instruments and status quo of the pollution potential in the catchment.	ORASECOM																					
	Draft operating procedures and set up licensing system for sand mining	Use the catchment committee and the scientific knowledge collected on the potential sand mining sites to issue licences	ORASECOM		■																			
		Bring to the attention of Sand miners through workshops, training on the potential hazard this poses on the environment and water.	ORASECOM				■																	
		Monitor adherence to the conditions outlined in the sand mining licence and revoke the licence where violation is evidenced	ORASECOM					■																
	Develop strategies for proper management of solid waste and hazardous materials (eg. Used oil, medical waste, etc.)	Capacitate the sub- catchment committee on potential hazard of solid waste and hazardous waste disposal. This should be in form of workshops to instil commitment	ORASECOM		■																			
		Conduct focussed surveys on disposal methods of small to big entrepreneurs (garages, restaurants) and involve Health sector	ORASECOM				■																	
		Develop guidelines for disposal of solid waste and hazardous materials and punitive measures for defaulters	ORASECOM					■																
	Draft sand-mining strategies and set sand-mining strategies quotas for river reaches	Through the sub-catchment committee identify all the sand mining vendors in the sub-catchment and introduce the quotas in a participatory manner for river reaches.	ORASECOM		■																			
		Monitor the adherence to the quotas set	ORASECOM					■																
	Outcome 2.2: Point source pollution in Lower Mohokare Catchment reduced and improved industry standards implemented  <b>Output 2.2.3: Improved industry management system in place and point-source pollution reduced</b>	Conduct awareness - raising activities to public at large on water quality issues	Develop printed materials based on ICT and present these on focussed workshops where issues of water quality will be discussed.	ORASECOM	■																			
			Conduct interactive workshops that will reveal the hot spots where water quality is threatened	ORASECOM		■																		
			Include up-to-date information on ORASECOM website, for easy access to information	ORASECOM			■																	
			Link water quality issue with integrated catchment management and IWRM	ORASECOM				■																
Conduct consultative process with industry stakeholders to implement industry standards		Liaise with Trade and Industry on all the industrialist in the Catchment and their products.	ORASECOM		■																			
		Organize focussed meetings with Industrialist where issues of pollution and pollutants thereto could be discussed	ORASECOM			■																		
		Conduct workshops where the industrial effluent standards could be discussed and instill commitment to adhere	ORASECOM				■																	
		Implementation and monitoring of best practices at selected demonstration sites	ORASECOM					■																
Encourage farmers to use environmentally friendly practices for livestock dipping		In liaison with Ministry of Agriculture discuss and agree on the environmental friendly practices for livestock dipping. Potential hazards should be highlighted	ORASECOM		■																			
		Inform livestock farmers through media or focussed workshops on the acceptable dipping practices that does not affect the environment negatively.	ORASECOM			■																		
		Look for alternatives based on affordability but not compromising the negative effects on environment.	ORASECOM					■																
		Implementation and monitoring of best practices at selected demonstration sites.	ORASECOM						■															
Assist Government in developing monitoring and enforcement capacity for pollution control		Capacitate the sub-catchment Committee on procedures for enforcement including litigation where necessary on issues of pollution control	ORASECOM					■																
		Organize quarterly meetings where monitoring of pollution (point source) could be discussed and mitigated.	ORASECOM						■															

Outcome 2.3: Quantity and quality of groundwater resources determined and low-cost groundwater desalination plants piloted in Botswana	Appoint expert team	Compile terms of reference,	ORASECOM																										
		Select and appoint expert team	ORASECOM																										
	Audit existing well fields and review use of idle boreholes. Consider connecting the idle boreholes to augment supply	Inventorise all existing data on spatial database		ORASECOM																									
			Carry out audit of existing well fields	ORASECOM																									
			Document findings through the use of reports and mapping	ORASECOM																									
	Undertake groundwater assessment through exploration, drilling and testing. Assessment of the groundwater flows across the basin	Carry out desk study to make preliminary assessment of groundwater characteristics		ORASECOM																									
			Carry out exploration, drilling and yield testing of the selected boreholes	ORASECOM																									
			Assess and map groundwater flows across the basin	ORASECOM																									
	Develop aquifer potential maps showing sustainable yields and water quality	Develop draft potential maps to show sustainable yields and water quality		ORASECOM																									
			Present draft potential maps to ORASECOM	ORASECOM																									
			Finalise potential maps to show sustainable yields and water quality	ORASECOM																									
	Output 2.3.1: Viable and sustainable groundwater monitoring system established and implemented in selected sub-catchment areas	Audit/inventorise point sources of pollution and identify risks to existing and potential new well-field water supplies	Identify and inventorise location and nature of point sources of pollution	ORASECOM																									
			Identify associated risks to existing and potential new well-field water supplies	ORASECOM																									
		Implement recommendations of physical well-field protection zones	Based on analysis of risks, make recommendations on protection zones for physical well-fields	ORASECOM																									
			Implement recommendations	ORASECOM																									
		Improve and make more informative, underground water resources database trusted for its quality	Build reliable database including all relevant data, combining historic data and new, ensuring that the database is in line with ORASECOM WIS requirements	ORASECOM																									
			Put in place mechanisms for regular updating	ORASECOM																									
		Develop guidelines and training manuals and providetraining for increasing human resources capacity	Needs assessment for training and training manuals	ORASECOM																									
			Development of guidelines for capacity building	ORASECOM																									
			Develop training manuals and provide training	ORASECOM																									
	Outcome 2.3: Quantity and quality of groundwater resources determined and low-cost groundwater desalination plants piloted in Botswana	Appoint Consultant/project management team and select pilot demonstration sites	Compile terms of reference, select and appoint Consultant and/or project management team to manage pilot demonstration projects	ORASECOM																									
			Discusses and agree with stakeholders on potential project demonstration sites	ORASECOM																									
			Carry out situational analysis at all potential demonstration sites, and make final selection in consultation with stakeholders	ORASECOM																									
		Harness appropriate desalination technology that is affordable and easy to maintain to increase volumes of available potable water	For each project demonstration site, compile inception Report outlining proposed measures, project components, institutional responsibilities and monitoring and evaluation framework	ORASECOM																									
			Make recommendations on the appropriate desalination technology to be used at the pilot demonstration sites	ORASECOM																									
			Harness the chosen appropriate desalination technology	ORASECOM																									
		Output 2.3.2: Improved groundwater desalination technology tested in pilot sites	Identify and develop saline groundwater potential for all sectors, including desalination for potable water supply	For all sectors within the project areas identify the potential for the use of saline groundwater as water sources	ORASECOM																								
				Develop the saline groundwater for consumption by identified users	ORASECOM																								
Desalinate saline groundwater for potable water supply				ORASECOM																									
Use water conservation and preservation techniques.	Describe and present water conservation and preservation techniques that can be used in the project	ORASECOM																											
	Implement water conservation and preservation and techniques	ORASECOM																											
Promote community enterprises that arose out of re-using brine	Discuss with community stakeholders opportunities to develop community enterprises from the re-use of brine		ORASECOM																										
		Support communities in the implementation of enterprises based on the re-use of brine	ORASECOM																										



COMPONENT 3 Outcomes, Outputs, Activities and Sub-activities with timelines

Outcome / Output	Task	Sub-task	Responsible Party	2017	2017	2018	2018	2018	2019	2019	2019	2020	2020	2020	2021	2021	2021	2022					
				3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Outcome 3.1: Basin-wide environmental Flows regime agreed and implementation supported  <b>Output 3.1.1: Existing E-Flows harmonised and integrated</b>	Harmonise legal and administrative information	Assess and summarise legal and administrative frameworks relative to environmental flows and related areas in each of the basin states and at the regional level (SADC esp)	ORASECOM	█	█	█	█																
		Highlight areas of inconsistency and make recommendations for addressing these	ORASECOM			█	█	█															
		Draft report with clear conclusions and recommendations for the harmonisation of legal and administrative frameworks relative to environmental flows and present to ORASECOM and key stakeholders	ORASECOM			█	█	█	█														
	Harmonise information on hydrology and water use	Draft short review report for decision-makers summarising the finding of previous hydrological wand water use analyses and consolidation with recommendations on how they can be harmonised basinwide	ORASECOM	█	█	█	█	█															
		Present report to ORASECOM and key stakeholders for approval	ORASECOM			█	█	█	█														
	Harmonise information on ecosystem and resource use.	Draft short review report for decision-makers summarising the finding of previous ecosystem and resource use analyses and consolidation with recommendations on how they can be harmonised basinwide	ORASECOM	█	█	█	█	█															
		Present report to ORASECOM and key stakeholders for approval	ORASECOM			█	█	█	█														
	Outcome 3.1: Basin-wide environmental flow regime agreed and implementation supported  <b>Output 3.1.2: Basin-wide flow regime agreed through consultative process by Basin States</b>	Shortlist of basin-wide development/protection scenarios for evaluation by basin states developed	Draw up set of exploratory scenarios covering the appropriate range of development and protection levels together with evaluation systems and agree with stakeholders	ORASECOM	█	█	█	█															
Carry out water resources modelling runs and other parallel analyses			ORASECOM			█	█	█	█	█													
Compile reports and presentations aimed at comprehensible evaluation of results by stakeholders			ORASECOM			█	█	█	█	█	█												
Basin-wide consultation process conducted for determination of e-flows regime for the scenarios shortlisted		Draw up proposal for consultation process	ORASECOM			█	█	█	█	█													
		Carry out consultations at National and regional levels	ORASECOM			█	█	█	█	█													
Basin states jointly agree E-flows regime		At, and following final regional workshop agree on recommendations to the basin states	ORASECOM						█	█	█												
		Allow for one on one and regional presentations to decision-makers to clarify recommendations	ORASECOM						█	█	█												
	Basin states endorse a document detailing the agreed e-flow regime, details of any possible transitional periods and implementation programme	ORASECOM								█	█												

<p>Outcome 3.1: Basin-wide environmental flow regime agreed and implementation supported</p> <p><b>Output 3.1.3: Set-up, implementation and compliance monitoring of basin-wide e-flows regime supported</b></p>	Implement mechanisms for e-flows	Based on agreed E-flow regime draw up document clearly stating operating procedures for each of the 52 defined E-flows nodes	ORASECOM																
		Check that all operating procedures are physically implementable and make recommendations for any works as necessary	ORASECOM																
		Implement procedures	ORASECOM																
	Implement monitoring and compliance programmes	Define monitoring points and methods.	ORASECOM																
		Agree on monitoring and compliance roles and responsibilities, especially at the national levels and for ORASECOM (Secretariat)	ORASECOM																
		Draw up detailed monitoring and compliance programme for implementation at national and transboundary levels	ORASECOM																
	Implement adaptive management programme	Implement monitoring and compliance systems	ORASECOM																
		Based on feedback from monitoring systems design adaptive management programme allowing for analysis of E-flows and anticipated environmental impacts and change	ORASECOM																
	Assess flows and abstractions monitored and compliance	Design adaptive management measures to ensure movement toward attainment of targets as indicated by agreed E-flow regime	ORASECOM																
		Country monitoring of agreed stations according to customised template	ORASECOM																
		Report using agreed system and shared on ORASECOM WIS using customised system	ORASECOM																
	Implement adaptive management programme	Quarterly compliance assessment by ORASECOM Secretariat with reporting to countries	ORASECOM																
		Based on compliance gaps indicate required management measures within areas impacting the non-compliant site.	ORASECOM																
	Assess the efficacy of e-flows regime in maintaining target ecosystem conditions monitored and assessed	Finalise and implement measures required for movement towards compliance at each site	ORASECOM																
		Based on annual assessment of ecosystems report on to what extent target conditions are being achieved or maintained	ORASECOM																
		Provide annual report of status of indicator ecosystems	ORASECOM																
	Implement adaptive management programme	Make recommendations on changes, if required to E-flow requirements at sites as necessary	ORASECOM																
		Based on assessments of target ecosystem compliance gaps indicate required management measures within areas impacting the non-compliant site.	ORASECOM																
<p>Outcome 3.2: Critical ecosystem of the Orange-Senqu River Mouth rehabilitated and sustainably managed</p> <p><b>Output 3.2.1: Natural flood plain functions restored and marked improvement in estuarine habitat condition achieved</b></p>	Remove the remnant causeway that still transects the salt marshes. Control alien invasive plants in the floodplain	Finalise and implement measures required for movement towards compliance at each site.	ORASECOM																
		Compile procurement documents for selection and appointment of contractors	ORASECOM																
		Appoint contractor, supervise removal of causeway and control/removal of invasive plants in floodplain	ORASECOM																
	Remove the old earth-moving equipment buried in the sand berm near the mouth of the Orange-Senqu River.	Compile report (by contractor)	ORASECOM																
		Compile procurement documents for selection and appointment of contractors	ORASECOM																
		Appoint contractor, supervise removal of old earth-moving equipment	ORASECOM																
	Control wind-blown dust and wastewater from mining activities.	Compile report (by contractor)	ORASECOM																
		Hold discussions with mining companies aimed at agreeing on control measures	ORASECOM																
		Work closely with mining companies to draw up action plan Monitor and evaluate implementation of dust and wastewater control measures	ORASECOM																
	Conduct a Lidar survey of the Orange River mouth to assist with identifying elevated areas that obstruct tidal intrusion and drainage of floodplains	ORASECOM																	
		Compile procurement documents for selection and appointment of contractors	ORASECOM																
		Appoint contractor, supervise contract	ORASECOM																
	Rationalise the existing dirt-road network crossing the Orange River mouth floodplain to limit impact on estuarine habitat	Compile report (by contractor)	ORASECOM																
		Compile terms of reference for Consultant and appoint Consultant and team	ORASECOM																
		Draw up, in cooperation with stakeholders, a plan to rationalise the existing dirt road network including implementation plan	ORASECOM																
	Formalise a mouth management plan (i.e. artificial breaching protocol) to provide guidelines for when and how the estuary mouth may be breached	Implement Plan	ORASECOM																
		Taking into account recommendations of Outcome 3.1 and working with (led by) Orange River Mouth Interim Management Committee (ORMIMC) and other stakeholders, draw up draft mouth management plan	ORASECOM																
		Present draft mouth management plan to ORASECOM and other stakeholders for approval	ORASECOM																
		Finalise draft mouth management plan, including timeline for implementation, institutional responsibilities and monitoring and evaluation framework	ORASECOM																

Outcome 3.2: Critical ecosystem of the Orange-Senqu River Mouth rehabilitated and sustainably managed  <b>Output 3.2.2: Status of over-exploited/ collapsed estuarine species improved</b>	Enforce the prohibition of gillnetting in the estuary. Curtail illegal dog hunting and predation by feral dogs on the floodplain and islands.	Working with (led by) Orange River Mouth Interim Management Committee (ORMIMC), draw up enforcement plan in consultation with stakeholders	ORASECOM																			
		Working with the authorities agree on implementation strategy	ORASECOM																			
		Draw up and implement monitoring and evaluation plan	ORASECOM																			
	Revisit the boundaries of the site and formal protected areas as well as the planning schemes for Alexander Bay and Oranjemund	Working with (led by) Orange River Mouth Interim Management Committee (ORMIMC), hold discussions with stakeholders, including the appropriate authorities, aimed at understanding all issues related to boundaries of the site, protected areas and planning schemes for Alexander Bay and Oranjemund	ORASECOM																			
		Compile report presenting conclusions and recommendations to ORASECOM and through ORASECOM to all concerned authorities.	ORASECOM																			
		Formally revise boundaries and planning schemes	ORASECOM																			
		Improve management of livestock grazing within the protected sites	Compile terms of reference for Consultant and appoint Consultant and team	ORASECOM																		
	Carry out situational analysis		ORASECOM																			
	Draw up, in cooperation with stakeholders, a plan to improve the management of livestock grazing within protected areas		ORASECOM																			
	Outcome 3.2: Critical ecosystem of the Orange-Senqu River Mouth rehabilitated and sustainably managed  <b>Output 3.2.3: Nutrient input from agricultural areas below Vioolsdrift reduced</b>	Quantify nutrient input as a result of agricultural areas around Vioolsdrift	Compile terms of reference for Consultant and appoint Consultant and team	ORASECOM																		
			Carry out situational analysis, including sampling and setting up of monitoring stations for quality and quantify	ORASECOM																		
Identify priority hotspots (based on return flows)			ORASECOM																			
Identify and implement best agricultural practices targeted at the hotspots.		Carry out analysis of farming practices on command areas draining to hotspots	ORASECOM																			
		Compile situational/diagnostic analysis report highlighting existing practices	ORASECOM																			
		Propose best practices for implementation in command areas (make use of Vioolsdrift/Noordoewer experience)	ORASECOM																			
Implement best practices at the hotspots		Using the experience of the GEF-SAP Vioolsdrift/Noordoewer experience, and in discussion with stakeholders/farmers, draw up a strategy for the implementation of best practices	ORASECOM																			
		Implement best practices	ORASECOM																			
		Design and implement monitoring and evaluation system	ORASECOM																			
Implement awareness raising activities on the economic and environmental benefits of the improved fertilizer application		Prepare detailed and user-friendly analysis of results of implementation of best practices, including reduced application of fertilisers (reduced wastage)	ORASECOM																			
		Disseminate results through publication and experience sharing	ORASECOM																			
Monitor water quality to measure the intended reduction of the nutrient load into the river		Use sampling network put in place for situational analysis to monitor and evaluate change in the nutrient loads in both return flows and in the river itself	ORASECOM																			
		Compile a report providing details of work carried out, conclusions and recommendations	ORASECOM																			

**COMPONENT 4 Outcomes, Outputs, Activities and Sub-activities with timelines**

Outcome / Output	Task	Sub-task	Responsible Party	2017	2017	2018	2018	2018	2019	2019	2019	2020	2020	2020	2021	2021	2021	2022	2022				
				3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Component 4 Coordination, PCU staff, management and evaluation	Component Coordination	Setup and maintain coordination office for national level pilot project	ORASECOM																				
		Attend regional meetings	ORASECOM																				
		Organise and attend coordination meetings at national level	ORASECOM																				
	Monitoring and evaluation	Inception phase (re-confirm component plan, secure buy-in)	ORASECOM																				
		Quarterly project reports	ORASECOM																				
		Contribute to Project Implementation Reports (PIR); mid term and end of project reviews	ORASECOM																				
Outcome 4.1: Invasive species controlled through integrated management in pilot areas in the Orange–Fish River basin and livelihood options based on invasive species control developed	Determine distribution and abundance of Prosopis and produce maps	Compile terms of reference, select and appoint project implementation team	ORASECOM																				
		Conduct an inventory of Prosopis in the Orange-Fish River	ORASECOM																				
		Feedback session and training of government officials on methodologies for evaluation of presence and extent of alien species	ORASECOM																				
		Produce maps showing distribution and density of prosopis	ORASECOM																				
	<b>Output 4.1.1: Distribution and abundance of invasive species in the basin determined and mapped</b>	Quantify impacts of Prosopis on groundwater resources	Draw up monitoring plan for identifying trends in groundwater level changes	ORASECOM																			
			Implement monitoring stations and monitor water levels in both infested and non-infested areas (as control)	ORASECOM																			
			Carry out studies to determine/quantify the impacts of Prosopis on groundwater resources	ORASECOM																			
			Compile report providing detailed findings and conclusions	ORASECOM																			
Outcome 4.1: Invasive species controlled through integrated management in pilot areas in the Orange–Fish River basin and livelihood options based on invasive species control developed	Support with setting up legal and institutional framework for management of Prosopis	Review policy and institutional mandates to establish where Prosopis management is best suited	ORASECOM																				
		Set up institutional mechanisms for Prosopis management (including models for entrepreneurship at local levels)	ORASECOM																				
		Strengthen national and local level institutional capacity for Prosopis management	ORASECOM																				
	<b>Output 4.1.2: Prosopis in pilot areas cleared Management options for Prosopis in pilot areas demonstrated</b>	Determine sustainable options for harvesting prosopis	harvesting prosopis taking into consideration environmental impacts	ORASECOM																			
			Select pilot areas for demonstration of best options	ORASECOM																			
			Determine and implement best options for after-care of areas that have been cleared - through pilot activities	ORASECOM																			
	Develop and implement Prosopis management plans	Develop management plans to be implemented at local level	Develop management plans to be implemented at local level	ORASECOM																			
			Strengthen capacity for implementation of the plans	ORASECOM																			
			Implement the plans (including monitoring and evaluation)	ORASECOM																			
	Outcome 4.1: Invasive species controlled through integrated management in pilot areas in the Orange–Fish River basin and livelihood options based on invasive species control developed	Determine viable options for using Prosopis (social, economic and environmental benefits) and opportunities for adding value to the biomass	Determine the value of Prosopis species to local communities through participatory approaches	ORASECOM																			
			Determine profitable uses of Prosopis and identify options for the pilot project	ORASECOM																			
		<b>Output 4.1.3: Economic opportunities based on alien clearing created</b>	Pilot sustainable economic models on Prosopis (link to implementation of management plans)	Implement the viable options (budget under implementation of plans)	ORASECOM																		
Strengthen capacity for implementation				ORASECOM																			
Share lessons learnt with the other 3 member states (as relevant)			Monitor and evaluate (annual monitoring, mid term and end of term evaluations)	ORASECOM																			
			Document best practices, draw up case studies with costs-benefit analysis	ORASECOM																			
		Disseminate best practices and carry out experience-sharing sessions	ORASECOM																				

## **Annex B: Monitoring Plan**

The Project Coordinator will collect results data according to the monitoring plan presented at the Inception Workshop together with the Results Framework for discussion, and approved at the first Project Steering Committee meeting.

## Annex C: Evaluation Plan

Evaluation Title	Planned start date Month/year	Planned end date Month/year	Included in the Country Office Evaluation Plan	Budget for consultants	Other budget (i.e. travel, site visits etc....)	Budget translation for
Terminal Evaluation	60 months after the project document signature (expected to be in 2022)	64 months after the project document signature (expected to be in 2022)	Yes (to be included for its 2022 Evaluation Plan)	USD 35,000	USD 15,000	0
Total evaluation budget				USD 50,000		

## **Annex D: GEF Tracking Tool(s) at baseline**

See the separate Excel file.

## **Annex E: Terms of Reference**

### **Project Steering Committee**

#### ***General responsibility***

The Project Steering Committee (PSC) will be the highest decision-making body for the overall project. It should comprise membership from:

The size of the PSC and the nature of its representation means that it can only meet annually. It is proposed that the meeting should take place immediately prior to one of the bi-annual ORASECOM Council meetings

The PSC is responsible for making management decisions for a project in particular when guidance is required by the Project Coordinator. The PSC plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the responsibilities of the Project Coordinator through the approval of his/her ToR and any delegation of its Project Assurance responsibilities. The PSC is the highest executive body for the project, provides strategic and policy guidance to the project implementation, and approves Annual Work Plans.

#### ***Composition***

The Project Steering Committee will have Permanent Members, as follows:

- ORASECOM Council represented by one Commissioner per country (4 in total);
- Ministries of Environment, one representative per country (4 in total);
- UNDP, as GEF Implementing Agency to be represented by officer responsible from the UNDP Regional Office and the officer responsible from the South Africa country office
- Project Coordination Unit represented by the Project Coordinator (observer status)

The PSC will also include other members with observer status and invited experts, such as:

- International cooperating partners providing co-financing and/or working on related initiatives
- The Benguela Current Commission which has a role to play in supporting Component 3.
- Technical experts as required by the PSC
- Relevant representatives of the Private Sector and NGOs may be invited to attend PSC meetings whenever required

#### ***Steering Committee Rules of Procedure:***

The following rules of procedure are proposed and should be reviewed and adopted at the first PSC meeting:

- The Project Steering Committee will be chaired on a rotational basis as agreed by its membership.
- The PSC will meet at least annually, although “extraordinary” meetings can be organized according to specific need.
- The PSC will make decisions as far as possible through a consensus. Permanent members of the Project Steering Committee will have voting rights, should voting be exercised.
- The PSC will delegate representatives to sit on selection panels for consultants and service vendors, if requested by UNDP.
- Permanent members of the PSC will appoint an alternate to attend PSC meetings, in the event that the designated representative is unable to attend.
- An Annual Tripartite Review of the project will be chaired by UNDP, as part of a regular PSC meeting. The TPR will approve the Annual Project Review (APR) and Work Plan

The Specific Functions of the PSC shall include:

- review and recommend approval of Annual Work Plans and budgets;



- monitor progress in project implementation against agreed Outcomes and Outputs
- provide strategic guidance, to ensure the timely and cost effective realization of project objectives;
- validate project outputs and, where appropriate, project documents;
- resolve conflicts and problem areas as needed to facilitate project delivery; and
- ensure that country commitments, including technical and operational support are met.
- The PSC may bring into effect various technical and scientific working groups as deemed necessary to support the work of the PSC and the project.

As the PSC represents the senior decision-making body for the project it will not be expected to deal with day-to-day management and administration of the project. This will be handled by the Project Coordinator, and in coordination with the Executing Agency.

## **Project Advisory Support (PAS)**

### ***Context and General Responsibility***

In view of the relatively complex technical and institutional nature of the project, it is clear that it will be very useful to have project advisory team comprising experts from each of the countries. These experts will be those with experience in the most pertinent fields and with good knowledge of the Orange-Senqu Basin, at least within their countries. The relative infrequency of the meetings of the PSC means that it will be necessary to have an intermediary body with representation of expert decision-makers to provide this support on an ad hoc basis.

### ***Composition***

- Technical Task Team, with one designated project contact person per country
- Communication Task Team, with one designated project contact person per country
- Water Quality working group, with one delegated project contact person per country
- Groundwater working group, with one delegated project contact person per country
- Project Coordinator
- Benguela Current Commission (BCC)

### ***Rules of procedure and modus operandi***

The following rules of procedure are proposed and should be reviewed and adopted at the first PAS meeting:

- The Project Advisory Support Team will be chaired on a rotational basis as agreed by its membership.
- The Project Advisory Support Team will normally meet twice a year, once being in preparation of the PSC meeting. Some allowance for ad hoc meetings will be made in order to avoid any potential delays
- Much of the advice, guidance and support to be provided by the Team will be provided remotely through e-mail exchange etc.
- The Specific Functions of the PAS shall include but not be limited to:
  - ⇒ Providing technical and general support to the PCU and the executing agencies
  - ⇒ Assisting in the preparation of PSC meetings where required (mainly advisory role)
  - ⇒ monitoring progress in project implementation against agreed Outcomes and Outputs
  - ⇒ provide strategic guidance, to ensure the timely and cost effective realization of project objectives;

## **Project Coordination Unit**

### ***Context and General Responsibility***

The project Coordination Unit (PCU) will be put in place to manage the project as a whole.

The PCU will be based within the offices of the ORASECOM Secretariat in Centurion, Gauteng, South Africa and will comprise four key staff, each one with responsibility for some specific outcomes and/or outputs. The PCU will be headed up by a Project Coordinator.

Allowance has been made for, administrative and technical support to be recruited locally.

**Location:**

Within the ORASECOM Secretariat, Centurion, Gauteng Region, South Africa

**Composition:**

The PCU will provide a coordination and management structure for implementation of the entire project in accordance with the rules and procedures of UNDP as executed through the ORASECOM Secretariat and under the day-to-day direction of the Project Coordinator, and based on the general guidance provided by the Project Steering Committee (PSC) and Project Advisory Support Team. The PCU comprises:

- Project Coordinator
- Water Quality and Environmental Experts
- Communications Expert
- Policy Analyst
- Administrative and Technical Support Unit, comprising at least
  - ⇒ Finance and Administration Officer,
  - ⇒ GIS, mapping and database technician(s)

**Tasks**

- Organization and implementation of the technical activities and close coordination with ORASECOM and national expertise and stakeholders.
- Assistance in networking between and among project entities such as the PSC, national officials (all participating countries), Implementing Agency personnel, cooperating partners, existing and potential co-financers, other related GEF and non-GEF projects, and others as appropriate and necessary;
- Organization of project related consultative meetings for introducing and implementing the project and project components and, as necessary, programme activities (including arrangements for such necessities as simultaneous translation and the production of documents in various languages as may be necessary);
- Collection and dissemination of information on policy, economic, scientific and technical issues related to the overall project
- Preparation of progress reports (administrative and financial) concerning program activities and outputs;
- Preparation and arrangements for hosting annual Review Meetings and Mid-Term and Terminal Evaluation processes;
- Establishment of and assistance in networking between specialized institutions in participating countries and technical specialists from elsewhere; and
- General Project management (financial, logistical and strategic).

## **Project Coordinator**

**Context**

The PCU will be headed up by a Project Coordinator, working out of the ORASECOM Secretariat. The Project Coordinator will also take charge of the following outcomes under Components 1 and 2:

- Component 1,
  - ⇒ Outcome 1.1: ORASECOM's capacity to develop innovative financing schemes strengthened. All outputs

- ⇒ Outcome 1.2, Output 1.2.3: Annual water resources modelling supported to optimise infrastructure operation for equitable allocation and E-flows provision
- ⇒ Outcome 1.3: SAP and country-specific Action Plans revised and updated for next 5-year cycle. All Outputs
- Component 2,
  - ⇒ Outcome 2.3: Quantity and quality of groundwater resources determined and low-cost groundwater desalination plants piloted in Botswana. All outputs

In view of her/his responsibilities to deliver these outcomes, the Project Coordinator should be an expert in IWRM and all related institutional aspects, in addition to having the required experience in management of this type of project. The post of Project Coordinator will be a full-time post over five years and will be recruited through UNDP/ORASECOM. This is a critical position and it is important that person filling this position has a continuous global view of the overall project.

The Project Coordinator shall be in overall charge and have overall responsibility for the staff and day-to-day running of the PCU, under the supervision of ORASECOM (through its Secretariat) and the UNDP. The Project Coordinator is ultimately responsible for organizing and overseeing delivery on all aspects and activities of the Project

### ***Location***

The Project Coordinator will be based within the PCU within the ORASECOM Secretariat in Centurion, Gauteng, South Africa. He/she will be expected to travel to regional and other International locations consistent with these Terms of Reference.

### ***General Responsibilities***

The Project Coordinator (PC) shall be responsible for the overall coordination of all aspects of the UNDP-ORASECOM-GEF Project. He/she shall liaise directly with designated officials of the Participating Countries, other Members of the PSC, the GEF Implementing Agency (UNDP), the GEF Executing Agency (ORASECOM), UNDP Regional and Country Offices, existing and potential additional project donors, National Focal Points, and others as deemed appropriate and necessary by the PSC or by the Project Coordinator him/herself. The budget and associated work plan will provide guidance on the day-to-day implementation of the approved Project Document and on the integration of the various donor funded parallel initiatives. He/she shall be responsible for delivery of all substantive technical, managerial and financial reports from and on behalf of the Project. He/she will provide overall supervision for all staff in the Program Coordination Unit.

### ***Specific Duties***

The Project Coordinator will have the following specific duties:

- Manage all Components of the PCU, its staff and project budget;
- Prepare an Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the Project Steering Committee and guidance by the Project Advisory Support Team, in close consultation and coordination with related Projects under ORASECOM and the riparian states, GEF Partners and other international cooperating partners;;
- Coordinate and monitor the activities described in the work plan;
- Flag any risks emerging during the project implementation that will hamper timely progress of the project implementation or successful delivery of intended outputs and outcomes.
- Direct the project monitoring and evaluation processes including the demonstration components, and the design of the replication strategy to be developed from the demonstration projects;
- Oversee the development of information management tools to ensure evaluation, monitoring and replication activities;
- Ensure project compliance with all UN and GEF policies, regulations and procedures;
- Ensure consistency between the various programme elements and related activities provided or funded by other donor organisations;
- Assure preparation of Terms of Reference for consultants and contractors;
- Coordinate and oversee preparation of the substantive and operational reports from the Program;
  - ⇒ Foster and establish close linkages with the other Projects within the zone, with other related GEF programs and, where appropriate, other relevant regional International Waters and related programs and projects within and outside of the region;

- ⇒ Represent the Project at meetings and other project related fora within the region and globally, as required; and
- ⇒ Submit quarterly reports of relevant project progress and problems to the PSC, IA and EA.
- Manage all activities associated with Outcome 1.1: ORASECOM's capacity to develop innovative financing schemes strengthened, Outcome 1.2, Output 1.2.3, Outcome 1.3 and Outcome 2.3.

### **Qualifications**

- At least fifteen years of experience in IWRM, institutional and policy matters related to water and/or natural resources management. Experience in ecosystem-based management, surface and groundwater resources and conjunctive management and other fields related to implementation of the SAP will be an advantage. Experience in transboundary water resources management is very important and experience in the Orange-Senqu Basin will be an advantage.
- Graduate and/or postgraduate degree(s) in a subject(s) related to the assignment (water resources, environmental management, natural resources economics etc).
- Demonstrated diplomatic and negotiating skills;
- Familiarity with the goals and procedures of international organizations, in particular those of the GEF and the Implementing Agency (UNDP), and regional organizations related to Project and Programme activities, and currently identified Project and Programme donors);
- Excellent command of English and good communication skills.
- Previous work experience in one or more of the participating countries, and previous work experience in the region on issues related to the Project will be very favourably considered.

### **Water Quality / Environmental Expert**

#### **Context and General Responsibilities**

The Water Quality / Environmental Expert will be a key member of the PCU, based in the ORASECOM Secretariat. The Water Quality / Environmental Expert will be in charge of the following two outcomes under Component 2 of the Project:

- Outcome 2.1: Basin-wide water resources quality monitoring system established. All outputs
- Outcome 2.2: Point source pollution in Lower Mohokare Catchment reduced and improved industry standards implemented All Outputs
- Outcome 2.3: Quantity and quality of groundwater resources determined and low-cost groundwater desalination plants piloted in Botswana. Water Quality aspects.

The Water Quality / Environmental Expert will also play a key role in providing expert inputs toward the realisation of Outcomes 3.1 and 3.1 under Component 3.2 concerning the implementation of Environmental Flow Requirements.

It is envisaged that the post of Water Quality / Environmental Expert will be a full-time post over most of the five years of the project and will be recruited through UNDP/ORASECOM. This is a critical position and it is important that person filling this position has a continuous global view of the overall project and in particular aspects related to water quality and environmental flows.

The Expert shall be responsible for the overall coordination of all aspects related to Outcomes 2.1 and 2.2 of the UNDP-ORASECOM-GEF Project. He or she will be expected to prepare a range of written documents and to prepare and present presentations to stakeholders as required. Visits to the field will also be required.

#### **Location**

The Water Quality Expert / Environmental Expert will be based within the PCU within the ORASECOM Secretariat in Centurion, Gauteng, South Africa. He/she will be expected to travel to regional and other International locations consistent with these Terms of Reference.

#### **Specific Duties**

The Water Quality / Environmental Expert will have the following specific duties:

- Under Component 2, Outcome 2.1, the expert will be in charge of all aspects related to the following:

- ⇒ Basin-wide water (resources) quality guidelines and monitoring systems developed
- ⇒ Periodic water resources quality monitoring and data sharing carried out and water quality year-books produced
- ⇒ Joint Basin Survey supported in 2020
- ⇒ Pollution hotspots identified and pilot interventions on pollution control demonstrated
- Under Component 2, Outcome 2.2, the expert will be in charge of all aspects related to the following:
  - ⇒ Point-sources of pollution in the Lower Mohokare Sub-catchment located and mapped
  - ⇒ Improved water resource quality management system established
  - ⇒ Improved industry management system in place and point-source pollution reduced
  - ⇒ Pollution hotspots identified and pilot interventions on pollution control demonstrated
- Under Component 2, Outcome 2.3, the expert will provide water quality inputs related to the following:
  - ⇒ Viable and sustainable groundwater monitoring system established and implemented in selected sub-catchment areas
  - ⇒ Improved groundwater desalination technology tested in pilot sites demonstrated
- Under Component 3, which concerns getting agreement on environmental flow requirements and their implementation, the Water Quality / Environmental Expert will provide expert inputs and support to the Policy Analyst, as required
- Contribute to the Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the Project Coordinator;
- Coordinate and monitor the activities described in the work plan;
- Flag any risks emerging during the project implementation that will hamper timely progress of the project implementation or successful delivery of intended outputs and outcomes.
- Contribute to the preparation of Terms of Reference for consultants and contractors;
- Contribute to preparation of the substantive and operational reports from the Program;
  - ⇒ Contribute to the fostering and establishment of close linkages with the other Projects within the zone, with other related GEF programs and, where appropriate, other relevant regional International Waters and related programs and projects within and outside of the region;
  - ⇒ Represent the Project at meetings and other project related fora within the region and globally, as required; and
  - ⇒ Submit quarterly reports of relevant project progress and problems to the Project Coordinator;

### ***Qualifications***

- At least fifteen years of experience in Water quality aspects as related to surface and groundwater resources. This should include institutional and policy matters related to water quality and ecosystem management. Experience in data collection systems and surveys, as well as other fields related to implementation of the SAP will be an advantage. Experience in transboundary river basins and aquifers is important and experience in the Orange-Senqu Basin will be an advantage.
- Graduate and/or postgraduate degree(s) in a subject(s) related to the assignment (water quality, environmental management etc).
- Good written and spoken communication skills in English language;
- Previous work experience in one or more of the participating countries, and previous work experience in the region on issues related to the Project will be very favourably considered.

## **Communication and Knowledge Management Expert**

### ***Context and General Responsibilities***

The Communications Expert will be a key member of the PCU, based in the ORASECOM Secretariat. The Communications Expert will be in charge of the following two outcome and/or outputs under Component 1 of the Project:

- Outcome 1.5: ORASECOM's capacity on communication, knowledge management, south-south cooperation enhanced. All outputs

- Outcome 1.2, Output 1.2.1: ORASECOM's WIS enhanced
- Outcome 1.2, Outputs 1.2.2: Basin-wide environmental monitoring systems integrated into WIS.

The Communication and Knowledge Management Expert is a new post planned for the ORASECOM Secretariat. The person filling this post will work full-time on the project during the lifetime of the project after which he/she may qualify for full-time employment in the ORASECOM Secretariat.

Inputs of the Expert will be focussed on development of the ORASECOM Water Information System (WIS) and on a wide range of communication aspects including

- Revising the Communication Strategy and supporting its implementation
- Ensure the production and distribution of materials on transboundary water resources management
- Updating and managing the knowledge management system
- Ensuring consistency and creativity in ORASECOM branding
- Ensuring the development and dissemination of ORASECOM/Orange-Senqu River print and broadcast materials

In addition, since communication aspects cut across all components of the project, the expert will have some involvement in the achievement of most outcomes.

The Expert shall be responsible for the overall coordination of all aspects related to Outcome 1.5 and will also be in charge of the WIS development. He or she will be expected to prepare a range of written documents and to prepare and present presentations to stakeholders as required. Visits to the field may also be required.

#### **Location**

The Communication and Knowledge Management Expert will be based within the PCU within the ORASECOM Secretariat in Centurion, Gauteng, South Africa. He/she will be expected to travel to regional and other International locations consistent with these Terms of Reference.

#### **Specific Duties**

The Communication and Knowledge Management Expert will have the following specific duties:

- Under Component 1, Outcome 1.5 the expert will be in charge of all aspects related to the following:
  - ⇒ Lessons learned and best practices on SAP implementation (esp. innovative approaches such as Tb-ESA Guideline application and Source-to-Sea applications) shared widely with African RBOs and Regional Economic Communities through ANBO and AMCOW and globally through IW:LEARN and other global fora, including the active participation in IW:LEARN related activities
  - ⇒ Regular production of communication materials together with their disseminated/year from Year 2 of implementation. Communication and knowledge with respect to supporting 2020 Joint Basinwide Survey.
- Under Component 1, Outcome 1.2, the expert will be in charge of all aspects related to the following:
  - ⇒ A wide range of activities aimed at enhancing the WIS in terms of its functionalities and sustainability
  - ⇒ Promotion of the WIS as an important and highly useful resource
  - ⇒ The integration of data produced by basinwide environmental systems into the WIS so that it can be used by stakeholders and decision-makers.
- Maintain the ORASECOM website
- Provide support for workshops and other learning knowledge exchanges
- Promote innovative approaches in knowledge sharing, including preparation of case studies and fact sheets
- Monitor and evaluate the knowledge sharing; including external benchmarking
- Disseminate information to internal and external audiences
- Organise knowledge sharing events (such as knowledge fairs, site visits, interviews)
- Maintain communications on knowledge sharing across the organisation

- Maintain and update the ORASECOM website
- Participate in orientation and training sessions, and preparation of brochures/presentations
- Contribute to the Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the Project Coordinator;
- Coordinate and monitor the activities described in the work plan;
- Flag any risks emerging during the project implementation that will hamper timely progress of the project implementation or successful delivery of intended outputs and outcomes.
- Contribute to the preparation of Terms of Reference for consultants and contractors;
- Contribute to preparation of the substantive and operational reports from the Program;
  - ⇒ Contribute to the fostering and establishment of close linkages with the other Projects within the zone, with other related GEF programs and, where appropriate, other relevant regional International Waters and related programs and projects within and outside of the region;
  - ⇒ Represent the Project at meetings and other project related fora within the region and globally, as required; and
  - ⇒ Submit quarterly reports of relevant project progress and problems to the Project Coordinator;

### **Qualifications**

- A bachelor's degree in business and/or social sciences. Post graduate is ideal
- Experience in communications
- Experience in information systems, website development and strong IT skills
- Work experience in a relevant discipline: water resources management, natural resources management
- Familiarity with developing and delivering knowledge sharing programs
- Experience in establishing effective partnerships within and outside the organization.
- Communications: Ability to explain complex concepts in layman's language; demonstrate sensitivity for cultural and gender differences
- Stakeholder orientation: Understands stakeholder needs and concerns; respond promptly and effectively
- Teamwork: Collaborates with other structures. Has the ability to get consensus and collaboration
- Learning and knowledge sharing: open to new ideas
- Analytical thinking and decisive judgement
- Fluency in English
- Previous work experience in one or more of the participating countries, and previous work experience in the region on issues related to the Project will be very favourably considered.

### **Policy Analyst**

#### ***Context and General Responsibilities***

The Policy Analyst will be a key member of the PCU, based in the ORASECOM Secretariat. The Policy Analyst will be in charge of the following four outcomes under Component 1, 3 and 4 of the Project:

- Outcome 1.4: Transboundary Environmental and Social Assessment Guidelines endorsed by Basin States
- Outcome 3.1: Basin-wide environmental flow regime agreed and implementation supported
- Outcome 3.2: Critical ecosystem of the Orange-Senqu River Mouth rehabilitated and sustainably managed.
- Outcome 4.1: Invasive species controlled through integrated management in pilot areas in the Orange–Fish River basin and livelihood options based on invasive species control developed

The Policy Analyst is a new post planned for the ORASECOM Secretariat. The person filling this post will work full-time on the project during the lifetime of the project after which he/she may qualify for full-time employment in the ORASECOM Secretariat. This expert would have the key role of advising the Commission on matters of policy and legal nature. During the course of the project these matters will relate specifically to Components 1, 3 and 4.

The Expert shall be responsible for the overall coordination of all aspects related to the above-mentioned outcomes. He or she will be expected to prepare a range of written documents and to prepare and present presentations to stakeholders as required. Visits to the field may also be required.

### **Location**

The policy Analyst will be based within the PCU within the ORASECOM Secretariat in Centurion, Gauteng, South Africa. He/she will be expected to travel to regional and other International locations consistent with these Terms of Reference.

### **Specific Duties**

The Policy Analyst will have the following specific duties:

- Under Component 1, Outcome 1.4 the expert will be in charge of all aspects related to the following:
  - ⇒ Review of previous work and provision of capacity building, technical support and experience sharing
  - ⇒ Take the lead in organising and giving consultations to discuss proposed draft guidelines
  - ⇒ Provide necessary support so that member states can endorse the Tb-ESA Guidelines.
- Under Component 3, Outcome 3.1, the expert will be in charge of all aspects related to the following:
  - ⇒ Integration and harmonisation of existing E-Flows work.
  - ⇒ Organise and facilitate consultative process aimed at agreeing basin-wide flow regime
  - ⇒ Support and facilitate the setting up, implementation and compliance monitoring of basin-wide e-flows regime
- Under Component 3, Outcome 3.2, the expert will be in charge of all aspects related to the following:
  - ⇒ Natural flood plain functions restored and marked improvement in estuarine habitat condition achieved
  - ⇒ Status of over-exploited/ collapsed estuarine species improved
  - ⇒ Nutrient input from agricultural areas below Vioolsdrift reduced
- Under Component 4, Outcome 4.1, the expert will be in charge of all aspects related to the following:
  - ⇒ Determination and mapping of distribution and abundance of invasive species in the basin
  - ⇒ Facilitate projects to clear Prosopis in pilot areas together with development and implementation of management options for Prosopis in pilot areas
- Contribute to the Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the Project Coordinator;
- Coordinate and monitor the activities described in the work plan as required;
- Flag any risks emerging during the project implementation that will hamper timely progress of the project implementation or successful delivery of intended outputs and outcomes.
- Contribute to the preparation of Terms of Reference for consultants and contractors;
- Contribute to preparation of the substantive and operational reports from the Program;
  - ⇒ Contribute to the fostering and establishment of close linkages with the other Projects within the zone, with other related GEF programs and, where appropriate, other relevant regional International Waters and related programs and projects within and outside of the region;
  - ⇒ Represent the Project at meetings and other project related fora within the region and globally, as required; and
  - ⇒ Submit quarterly reports of relevant project progress and problems to the Project Coordinator;

### **Qualifications**

- A bachelor's degree in field related to policy development and planning. Post graduate is ideal
- At least 10 years in the policy and legal development or analysis field



- Experience in water and natural resources management would be an advantage
- Stakeholder orientation: Understands stakeholder needs and concerns; respond promptly and effectively
- Teamwork: Collaborates with other structures. Has the ability to get consensus and collaboration
- Learning and knowledge sharing: open to new ideas
- Analytical thinking and decisive judgement
- Fluency in English
- Previous work experience in one or more of the participating countries, and previous work experience in the region on issues related to the Project will be very favourably considered.

## Annex F. UNDP Social and Environmental Screening Procedure (SESP)

### Project Information

<b>Project Information</b>	
1. Project Title	Support to the Orange-Senqu River Strategic Action Programme Implementation
2. Project Number	PIMS 5506; Atlas Project ID: 00095267
3. Location (Global/Region/Country)	Regional (Botswana, Lesotho, Namibia and South Africa)

### Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

#### QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

##### *Briefly describe in the space below how the Project mainstreams the human-rights based approach*

Component 1 aims at **providing capacity-building to support institutional and policy reform as well as building technical capacity for improved transboundary water management**. The approach is **highly inclusive**.

Component 2 is aimed at improving the **accountability** of those who are responsible for damaging environmental sustainability through pollution of the Orange-Senqu River. It has been a challenge to make all polluters accountable in the past, to address this, the project aims to **implement an improved water quality monitoring network that will incentivize responsible behavior and accountability**. A win-win approach is a key driver, with private companies encouraged to invest in environmentally responsible behaviour for and making savings over time, especially since policy and legal changes are expected to increasingly punish environmentally irresponsible behavior through improved legislation (rule of law).

It is important to note that **Component 4 of the project**, which concerns sharing responsibilities and benefits with local communities and civil society in conserving basin resources, is focused on **community-based ecosystem management**. This means that improved management of natural resources is accompanied by real livelihood benefits for all in each of the demonstration project areas. This is recognized as a condition for sustainability. The proposed projects under Component 4 are based on a **participative approach** with a **high level of stakeholder participation** during demonstration project site selection, design and implementation. Participation and inclusion are principles which underpin the whole process. Beneficiaries will form user associations for demonstration project implementation. These associations will work according to rules set down and agreed by the user associations themselves but according to management guidelines that ensure **equality and non-discrimination and accountability**.

##### *Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment*

Gender mainstreaming is one of the key principles of the Integrated Water Resources Management (IWRM). ORASECOM has developed a draft Gender Mainstreaming Strategy and the project will support the further development and implementation of the Strategy. However, information on gender roles and the differential access of men and women to water resources management and related services is still often lacking in many water strategies and policies, which hinders the progress in the implementation of the Gender Strategy. The Project aims to contribute to:

- Improving/Increasing women's participation in the project activities and in decision making
  - Increase the involvement of women in water resources management and planning at both the strategic transboundary and more local levels.
- defining sex-disaggregated indicators to track gender mainstreaming progress and collecting disaggregated data

**Briefly describe in the space below how the Project mainstreams environmental sustainability**

The overall objective of the project is to strengthen joint management capacity to address priority environmental concerns in the Orange-Senqu River Basin. This will be achieved through:

- Enhancing institutional and policy reform and technical capacity towards improving IWRM
- Reducing stresses on water resources quality
- Addressing changes to the hydrological regime through improved basin-wide management of the environmental flows and rehabilitation of the river mouth (Ramsar site) through
- Improving the management of waste water, reduces women’s exposure to carcinogens and other pollutants
- Addressing land degradation through community-based ecosystem management

**Part B. Identifying and Managing Social and Environmental Risks**

<p><b>QUESTION 2: What are the Potential Social and Environmental Risks?</b>  <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “Yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i></p>	<p><b>QUESTION 3: What is the level of significance of the potential social and environmental risks?</b>  <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i></p>			<p><b>QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?</b></p>
<p><b>Risk Description</b></p>	<p><b>Impact and Probability (1-5)</b></p>	<p><b>Significance (Low, Moderate, High)</b></p>	<p><b>Comments</b></p>	<p><b>Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.</b></p>
<p>Risk 1: There is a risk that duty-bearers do not have the capacity to meet their obligations in the Project</p>	<p>I = 4 P = 2</p>	<p><b>Moderate</b></p>	<p>The Duty-bearers are considered as the country representatives of ORASECOM and the ORASECOM Secretariat. Many of the outcomes will depend on both their technical capacity and their availability in</p>	<p>The project includes extensive capacity-building and will support the sustainable strengthening of the ORASECOM Secretariat. The recent institutional review of ORASECOM recommended the addition of new posts to the ORASECOM Secretariat, including a Communication and Knowledge Management expert and a Policy Analyst. Thus project will cover the costs of these two experts, whose inputs will be</p>

			the face of other commitments	100% devoted to the project. The ORASECOM has committed to finance the two posts with their ordinary budget before the end of the project implementation period to ensure the sustainability.
Risk 4: There are proposed Project activities within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection	I = 1 P = 1	<b>Low</b>	Project aims to improve status of these environmentally sensitive areas e.g. through rehabilitation of the river mouth and clearing of invasive species; therefore, expected impacts from project interventions in legally protected areas, areas with critical habitats and/or environmentally sensitive areas are positive ones, not negative.	As the expected impacts are considered positive during the screening procedure, not negative, no ESIA or SESA is required.  The project design ensures positive impacts on legally protected areas and its adjacent areas. Although prosopis clearance activities are supported primarily in order to increase water availability in the river and aquifer system in the targeted area, clearance of prosopis (invasive alien species) will result in the improvement of habitats for native and endemic species in the targeted areas.
<b>QUESTION 4: What is the overall Project risk categorization?</b>				
			<b>Select one (see <a href="#">SESP</a> for guidance)</b>	<b>Comments</b>
			<i>Low Risk</i>	<b>X</b>
				<p>The project aims to achieve the improved water resources management in the transboundary Orange-Senqu River basin using the ecosystem-based approach; therefore, the project interventions will result in the improved ecosystem in the targeted areas posing little risks in environmental sustainability (Principle 3).</p> <p>The project will make conscious efforts to mainstreaming gender and empower women and girls across all interventions and will make necessary budgetary provision to do so. Due to the current limited experience and best practices in identifying effective indicators to monitor and track the gender empowerment results in the transboundary water resources management and water resources planning to date (most sex-aggregated indicators well established to date are related to watsan issues), sex-aggregated indicators included in the Results Framework are rather limited and of general nature; however, the project stakeholders (both duty-bearers and right-holders) expressed their strong commitment during the project appraisal meeting that they will identify concrete gender empowerment activities as well as effective indicators to monitor progress as the project</p>

			<p>implementation progresses. Therefore, the project will pose low risk in gender equality and women’s empowerment (Principle 2).</p> <p>The capacity-building of duty-bearers, essentially ORASECOM officials at the national levels and of the Secretariat, is of critical importance if the technically and institutionally challenging outcomes are to be realized.</p> <p>The project will not involve any relocation of people or alternation of their existing access to land or water. The project contribute to a long-term objective of improving the quality of water, the productivity of land, and the basin populations resilience to climate shocks, leading to improved water security and food security, through sustainable management and utilization of natural resources in the basin in the context of the basin IWRM plan. The project will be implemented in line with the IWRM principles, which fully embraces human rights-based approach, inclusive approach, and ensuring environmental sustainability.</p>
	<i>Moderate Risk</i>	<input type="checkbox"/>	
	<i>High Risk</i>	<input type="checkbox"/>	
	<b>QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?</b>		
	Check all that apply		<b>Comments</b>
	<i>Principle 1: Human Rights</i>	<input checked="" type="checkbox"/>	
	<i>Principle 2: Gender Equality and Women’s Empowerment</i>	<input checked="" type="checkbox"/>	
	<b>1. Biodiversity Conservation and Natural Resource Management</b>	<input checked="" type="checkbox"/>	
	<b>2. Climate Change Mitigation and Adaptation</b>	<input type="checkbox"/>	
	<b>3. Community Health, Safety and Working Conditions</b>	<input type="checkbox"/>	
	<b>4. Cultural Heritage</b>	<input type="checkbox"/>	
	<b>5. Displacement and Resettlement</b>	<input type="checkbox"/>	
	<b>6. Indigenous Peoples</b>	<input type="checkbox"/>	
	<b>7. Pollution Prevention and Resource Efficiency</b>	<input type="checkbox"/>	

### Final Sign Off

<i>Signature</i>	<i>Date</i>	<i>Description</i>
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have “checked” to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have “cleared” the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

## SESP Attachment 1. Social and Environmental Risk Screening Checklist

<b>Checklist Potential Social and Environmental Risks</b>		
<b>Principles 1: Human Rights</b>		<b>Answer (Yes/No)</b>
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? <sup>3</sup>	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	Yes
6.	Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
<b>Principle 2: Gender Equality and Women’s Empowerment</b>		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women’s groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4.	Would the Project potentially limit women’s ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?  <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
<b>Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below</b>		
<b>Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management</b>		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?	No

<sup>3</sup> Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to “women and men” or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

	<i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	Yes
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>	No
<b>Standard 2: Climate Change Mitigation and Adaptation</b>		
2.1	Will the proposed Project result in significant <sup>4</sup> greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	No
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
<b>Standard 3: Community Health, Safety and Working Conditions</b>		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No

<sup>4</sup> In regards to CO<sub>2</sub>, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]



3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
<b>Standard 4: Cultural Heritage</b>		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
<b>Standard 5: Displacement and Resettlement</b>		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions? <sup>5</sup>	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
<b>Standard 6: Indigenous Peoples</b>		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?  <i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i>	No
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and	No

<sup>5</sup> Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

	traditional livelihoods of the indigenous peoples concerned?	
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
<b>Standard 7: Pollution Prevention and Resource Efficiency</b>		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	No
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs?  <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

**Annex G. Environmental and Social Management Plan (ESMP) for moderate and high risk projects only**

NOT APPLICABLE TO THIS PROJECT as the Project was rated as Low Risk.

**Annex H. UNDP Project Quality Assurance Report**

## Annex I. UNDP Risk Log

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
Basin states will not be willing to release their data for use by ORASECOM and are not willing to be subjected to the quality assurance and control measures that have been proposed to ensure confidence in the quality of the data in the database.	Political/Regulatory	I = 4 P = 1	The countries have a long-standing history of joint coordination, including data exchange, also evidenced by their contributions of data to the WIS. The project will provide the technical support to further strengthen the data exchange.	ORASECOM, Countries	
A lack of political will to implement the legislation in the basin countries and to integrate basin-wide management/ monitoring frameworks into administrative procedures, such as licensing etc.	Political/Regulatory	I = 4 P = 1	Countries have a long history of coordination and willingness to implement joint management activities, as witnessed by the ministerial endorsement of SAP and the adoption of the basin-wide IWRM Plan. The proposed activities of developing basin-wide frameworks are proposed by the countries themselves and have involved stakeholders from a wide variety of sector. It is therefore assumed that there is an ongoing willingness to develop and implement basin-wide joint management frameworks and the project will provide the necessary technical support to strengthen these frameworks.	ORASECOM, Countries	
Lack of inter-sectoral coordination and consultation is the major hurdle to IWRM implementation and every effort needs to be made to overcome it at the local, national and basin-wide levels.	Political/Strategic	I = 3 P = 2	The project is based on a SAP and Action Plans, which have been developed through a strong inter-sectoral, multi-country consultation process. The project will work through/with the Inter-sectoral Committees established during the SAP/ Action Plan development process and will continue to catalyze the engagement of multiple sectors beyond water sector in the SAP implementation activities.	ORASECOM, Countries	

<p>Poor coordination among various projects supported by different entities, leading to sub-optimal results delivery or duplication of work.</p>	<p>Operational</p>	<p>I = 3 P = 1</p>	<p>ORASECOM has demonstrated a strong programme coordination capacity in the last 5 years since the establishment of its permanent secretariat and continues to coordinate the various ICP funded activities in its programme. The project, through the PMU will maintain close collaboration and coordination with all relevant other ongoing initiatives under the guidance by ORASECOM.</p>		
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**Annex J. Results of the capacity assessment of the project implementing partner and HACT micro assessment**

See the separate file.

## **Annex K. Additional agreements**

- K-1: Project Cooperation Agreement to be signed between ORASECOM and UNDP (in a separate file)
- K-2: Letter of Agreement for Direct Project Support Costs between ORASECOM and UNDP (overleaf)



## **Annex K-2:**

### Standard Letter of Agreement between UNDP and ORASECOM for the Provision of Support Services

#### **STANDARD LETTER OF AGREEMENT BETWEEN**

#### **UNDP AND Orange-Senqu River Basin Commission (ORASECOM)**

#### **FOR THE PROVISION OF SUPPORT SERVICES**

Under project “Support to the Orange-Senqu River Strategic Action Programme Implementation”

(PMIS – 5506).

Dear, (ORASECOM),

1. Reference is made to consultations between officials of the Orange-Senqu River Basin Commission (ORASECOM) (hereinafter referred to as “Implementing Partner”) and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally implemented programs and projects. UNDP and ORASECOM hereby agree that the UNDP country office may provide such support services at the request of the ORASECOM through its institution designated in the relevant program support document or project document, as described below.

2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of ORASECOM is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.

3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the program/project:

- (a) Identification and/or recruitment of project and program personnel;
- (b) Identification and facilitation of training activities;
- (c) Procurement of goods and services;
- (d) Financial support services

4. The procurement of goods and services and the recruitment of project and program personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the program support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a program or project, the annex to the program support document or project document is revised with the mutual agreement of the UNDP resident representative and the designated institution.



## DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between ORASECOM and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed program or project “Support to the Orange-Senqu River Strategic Action Programme Implementation” Project (PMIS – 5506).

2. In accordance with the provisions of the letter of agreement signed on [insert date of agreement] and the project document, the UNDP country office shall provide support services for the Project as described below.

3. Support services to be provided:

Support services	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount and method of reimbursement of UNDP (where appropriate)
1. Services related to procurement (including but not limited to): <ul style="list-style-type: none"> <li>• Procurement of goods</li> <li>• Procurement of services:               <ul style="list-style-type: none"> <li>• Consultant recruitment</li> <li>• Advertising</li> <li>• Short-listing &amp; selection</li> <li>• Contract</li> <li>• Travel</li> <li>• Events (training and conferences)</li> </ul> </li> </ul>	Throughout project implementation when applicable	58 transactions per year, over 5 years = 65,228	UNDP will directly charge the project upon receipt of request of services from the Implementing Partner (IP
2. Services related to finance (including but not limited to): <ul style="list-style-type: none"> <li>• Payments</li> <li>• Disbursements</li> </ul>	Throughout project implementation when applicable	70 transactions per year, over 5 years = 9,721	UNDP will directly charge the project upon receipt of request of services from the Implementing Partner (IP
	<b>Total</b>	<b>\$74,949</b>	

**ANNEX: Estimated Direct Project Costs /UNDP Country Office (ATLAS Budget Line 74598):**

Budget Description	Unit price (a)	Amount Year 1		Amount Year 2		Amount Year 3		Amount Year 4		Amount Year 5		TOTAL
		No of units(b)	USD total(a*b)	No of units(b)	USD total(a*b)	No of units(b)	USD total(a*b)	No of units(b)	USD total(a*b)	No of units(b)	USD total(a*b)	
Payment process	\$38.79	24	\$930.96	24	\$930.96	24	930.96	24	930.96	24	930.96	\$4,655
Issue Checks	\$16.34	30	\$490.20	30	\$490.20	30	490.2	30	490.2	30	490.2	\$2,451
Create Vendor Profile	\$20.92	25	\$523.00	25	\$523.00	25	523	25	523	25	523	\$2,615
Personnel Management	\$487.19	8	\$3,897.52	8	\$3,897.52	8	3897.52	8	3897.52	8	3897.52	\$19,488
Recruitment process	\$633.03	2	\$1,266.06	2	\$1,266.06	2	1266.06	2	1266.06	2	1266.06	\$6,330
Procurement (average)	\$362.46	15	\$5,436.90	15	\$5,436.90	15	5436.9	15	5436.9	15	5436.9	\$27,185
Travel management	\$35.79	28	\$1,002.12	28	\$1,002.12	28	1002.12	28	1002.12	28	1002.12	\$5,011
Disposal of equipment	\$288.60	5	\$1,443.00	5	\$1,443.00	5	1443	5	1443	5	1443	\$7,215
<b>Total</b>			<b>\$14,990</b>		<b>\$14,990</b>		<b>\$14,990</b>		<b>\$14,990</b>		<b>\$14,990</b>	<b>\$74,949</b>

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### **XIII. ADDITIONAL ANNEXES**

- AA. Previous studies with direct relevance to SAP implementation
- BB. Details of Integration of the SAP into the ORASECOM Basin-wide IWRM Plan
- CC. XX
- DD. XX
- EE. XX
- FF. XX

## Annex AA. Previous studies with direct relevance to SAP implementation

- Studies and reports carried out as part of early support from the French Global Environment Facility (FGEF) between 2006 and 2009.
- Phase I of the GIZ-supported ORASECOM IWRM planning programme (2004 and 2007)
- Phase II of the GIZ-supported IWRM Planning Programme (2009 to 2011)
- Outputs resulting from the European Union provided support between 2009 and 2011
- Completed recently, UNDP-GEF support was aimed at a comprehensive analysis of environmental issues and their resolution. The main outputs were the Transboundary Diagnostic Analysis (2013) and the Strategic (SAP) and action plans at the national level.
- Completed very recently, Phase III of the GIZ-supported IWRM Planning Programme (2009 to 2011) resulting in the IWRM Plan for the basin.
- Other documents available on the ORASECOM WIS Other. These include the Terminal Evaluation for the UNDP-GEF ORASECOM support and a number of other technical reports produced by the TDA/SAP project.
- Other key non-ORASECOM studies or documents include those drawn up at the SADC and national levels to guide the process of sustainable water resources development:
  - ⇒ Integrated Water Resource Management Plan for Botswana
  - ⇒ First State of Water Resources Report for the Kingdom of Lesotho and the National Water and Sanitation Policy 2007..
  - ⇒ Integrated Water Resource Management Plan for Namibia
  - ⇒ National Water Resource Strategy 2 (NWRS 2) for South Africa
  - ⇒ SADC Regional water Policy (2005)
  - ⇒ SADC Regional Strategic Action Plan (2016 – 2020) RSAP IV

## Annex BB. Integration into the IWRM Plan of Targets and Interventions under the SAP and National Environmental Action Plans

*Integration of targets and interventions under SAP/NAP Priority Area 1: Increasing water demand*

SAP/NAP Targets and proposed Interventions	NAP/SAP Project Concept Note (PCN)
<p><b>Target 1: Improved basin-wide hydrometeorological and geohydrological monitoring systems are established and data shared by the member states</b></p> <p><i>Proposed Interventions: Water monitoring (quantity and quality) networks of rainfall, flow, groundwater levels and water metering improved; data captured, analysed, modelled and findings distributed</i></p>	<p><b>SAP PCN 1: ORASECOM information and knowledge Management:</b>  <i>Outcome 1: Basin -wide environmental monitoring networks established and maintained;</i>  <i>Outcome 2: Technical guidelines for data exchange and sharing developed</i>  <i>Outcome 3: ORASECOM WIS enlarged and maintained</i>  <i>Outcome 5: Capacity development for water resources practitioners</i></p>
<p>These outcomes are integrated under Action Area 1 of the IWRM Plan, <i>Water (and natural) resources data and information</i> and Action Area 12, <i>Ensure effective capacity building at various levels in all appropriate action areas</i></p>	
<p><b>Target 2: Recommendations for transboundary environmental assessments are developed, reviewed, refined and adopted by the basin (member) states</b></p> <p><i>Basin-wide transboundary environmental assessment guidelines developed</i></p>	<p><b>SAP PCN 1: ORASECOM information and knowledge management</b>  <i>Outcome 4: ORASECOM recommendations for transboundary environmental assessment applied by basin states and</i>  <i>Outcome 5 Capacity development for water resources practitioners</i></p>
<p>These outcomes are integrated under Action Area 7 of the IWRM Plan, <i>Environmental water requirements</i></p>	
<p><b>Target 3: Pilot initiatives for improving on-farm water efficiency are upscaled and implemented in priority areas</b></p> <p><i>Establish appropriate technology to measure water abstraction effectively and accurately</i>  <i>Develop appropriate incentives to motivate irrigators to improve water-use efficiencies</i>  <i>Develop awareness-raising and training programmes on WDM and water-use efficiency approaches</i></p>	<p>Namibia NAP PCN 3: Water conservation and demand management in the irrigation sector            South Africa NAP PCN 4: Water conservation and demand management in the irrigation sector</p>
<p>These outcomes are integrated under Action Area 5 of the IWRM Plan; <i>Optimising efficient utilisation, development, adaptive management of water resources</i></p>	
<p><b>Target 4: Potential for alternative options to meet water demand (increased storage, demand management, expanded wastewater treatment, conjunctive re-use of surface and groundwater..) in the basin have been defined</b></p> <p><i>Integrate the management and use of groundwater and surface water resources</i></p>	<p><b>SAP PCN 2: Groundwater management and use</b>  <i>Outcome 1: Understanding of groundwater resources in the basin enhanced</i>            Botswana NAP PCN 2: Improved fresh water availability &amp; GW knowledge potential            Lesotho NAP PCN 4: Improvement of groundwater management in selected aquifers within the Central Mohokare sub-catchment            Namibia NAP PCN 1: Improving groundwater resources management to enhance water supply in the Nossob–Auob sub-basin            Namibia NAP PCN 2: Improve water-use efficiency &amp; demand management in LAs</p>
<p>These outcomes are integrated under Action Area 1, <i>Water (and natural) resources data and information</i>; Action Area 5 <i>Optimising efficient utilisation, development, adaptive management of water resources</i> and Action Area 3, <i>Surface and groundwater assessments</i> of the IWRM Plan</p>	
<p><b>Target 5: Understanding of groundwater use potential enhanced and efficiency of use improved</b></p> <p><i>Identify the threats and issues to groundwater resources that need to be alleviated by basin-wide management</i>  <i>Identify and agree on a uniform groundwater resources management system</i>  <i>Establish shared governance of the groundwater resources within the basin</i></p>	<p><b>SAP PCN 2: Groundwater management and use</b>  <i>Outcome 2: Groundwater governance and management in the basin improved</i>            Botswana NAP PCN 2: See above            Lesotho NAP PCN 4: See above            Namibia NAP PCN 1: See above</p>
<p>These outcomes are integrated under Action Area 5 of the IWRM Plan, <i>Optimising efficient utilisation, development, adaptive management of water resources</i></p>	

*Integration of targets/interventions under SAP/NAP Priority Area 2: Declining water resources quality*

SAP/NAP Targets and proposed Interventions	NAP/SAP Project Concept Note (PCN)
<p><b>Target 1 Basin-wide water resources quality objectives defined and monitoring system established</b></p> <p><i>Basin-wide water resources quality guidelines developed Basin-wide water resources quality monitoring regime refined, agreed and implemented</i></p>	<p><b>SAP PCN 1: ORASECOM information and knowledge Management:</b></p> <p><i>Outcome 1: Basin -wide environmental monitoring networks established and maintained</i></p> <p><i>Outcome 2: Technical guidelines for data exchange and sharing developed</i></p> <p><i>Outcome 3: ORASECOM WIS enlarged and maintained</i></p> <p><i>Outcome 5: Capacity development for water resources practitioners</i></p> <p>South Africa NAP PCN 1: Monitoring priority chemical pollutants</p>
<p>These outcomes are integrated under Action Area 1 of the IWRM Plan, <i>Water (and natural) resources data and information</i> and Action Area 11, <i>Improving water quality</i> and Action Area 12, <i>Promotion/ maximising mainstreaming of key cross-cutting and enabling actions</i> of the IWRM Plan</p>	
<p><b>Target 2: Tools/incentives for reduced agrochemical application in the agriculture sector developed and implemented in pilot areas</b></p>	<p>South Africa NAP PCN 2: Mitigation of impact of agricultural sector on water quality</p>
<p>These outcomes are integrated under Action Area 11 of the IWRM Plan, <i>Improving water quality</i></p>	
<p><b>Target 3: Innovative methods for water quality improvements identified and implemented in pilot sites</b></p>	<p>Botswana NAP PCN 4: Treatment and re-use of wastewater</p> <p>Lesotho NAP PCN 2: Management of water resources quality in Central Mohokare sub-catchment</p> <p>Namibia NAP PCN 4: Improvement of water quality management and pollution control</p> <p>South Africa NAP PCN 3: Support for wastewater treatment upgrade</p>
<p>These outcomes are integrated under Action Area 10, <i>Water resources development</i> and Action Area 11, <i>Improving water quality</i>, of the IWRM Plan</p>	

*Integration of targets/interventions under SAP/NAP Priority Area 3: Changes to hydrological regime*

SAP/NAP Targets and proposed Interventions	NAP/SAP Project Concept Note (PCN)
<p><b>Target 1 Basin-wide environmental flows regime agreed and implementation ongoing</b></p> <p><i>Synchronise existing environmental flows studies</i></p> <p><i>Refine and agree on basin-wide environmental flows scenarios</i></p> <p><i>Agreed scenarios implemented and monitored on ongoing basis</i></p>	<p><b>SAP PCN 3: Basin-wide environmental flows regime:</b></p> <p><i>Outcome 1: Existing E-flows work harmonised and integrated.</i></p> <p><i>Outcome 2: Basin-wide E-flows regime agreed through consultative process</i></p> <p><i>Outcome 3: Setting up, implementation and compliance monitoring of basin-wide flows regime supported</i></p> <p>South Africa NAP PCN 1: Monitoring priority chemical pollutants</p>
<p>These outcomes are integrated under Action Area 7, <i>Environmental water requirements</i>, Action Area 11, <i>Improving water quality</i> and Action Area 12, <i>Promotion/ maximising mainstreaming of key cross-cutting and enabling actions</i> of the IWRM Plan</p>	
<p><b>Target 2: Integrated management plan for the river mouth (Ramsar site) developed and implementation ongoing</b></p>	
<p><i>Remove man-made structures in the floodplain and mouth area of Orange–Senqu River</i></p> <p><i>Align fishing legislation and compliance initiatives on both South African and Namibian sides of the estuary</i></p> <p><i>Verify the origin of the elevated nutrients below Vioolsdrift/Noordoewer and implementing agricultural best practice to reduce input</i></p>	<p><b>SAP PCN 4: Orange-Senqu River mouth management:</b></p> <p><i>Outcome 1: Natural floodplain function and marked improvement in estuarine habitat condition restored</i></p> <p><i>Outcome 2: Status of over-exploited/collapsed estuary species improved</i></p> <p><i>Outcome 3: Nutrient input from agricultural area(s) below Vioolsdrift reduced</i></p>
<p>These outcomes are integrated under Action Area 7, <i>Environmental water requirements</i>, Action Area 11, <i>Improving water quality</i></p>	



SAP/NAP Targets and proposed Interventions	NAP/SAP Project Concept Note (PCN)
<b>and Action Area 12, <i>Promotion/ maximising mainstreaming of key cross-cutting and enabling actions of the IWRM Plan</i></b>	

*Integration of targets and interventions under SAP/NAP Priority Area 4: Land degradation*

SAP/NAP Targets and proposed Interventions	NAP/SAP Project Concept Note (PCN)
<b>Target 1 Local level monitoring systems for rangeland conditions (including alien invasive species) developed and implemented</b>	<b>SAP PCN 1: ORASECOM information and knowledge Management:</b> <i>Outcome 1: Basin -wide environmental monitoring networks established and maintained</i> <i>Outcome 2: Technical guidelines for data exchange and sharing developed</i> <i>Outcome 3: ORASECOM WIS enlarged and maintained</i> <i>Outcome 5: Capacity development for water resources practitioners)</i>
<i>Development of rangeland monitoring indicators</i> <i>Establishment of rangeland monitoring system</i>	
These outcomes are integrated under Action Area 1 of the IWRM Plan, <i>Water (and natural) resources data and information</i> , Action Area 4, <i>Catchment degradation, watershed management, settlement and land-use planning</i> and Action Area 12, <i>Promotion/ maximising mainstreaming of key cross-cutting and enabling actions of the IWRM Plan</i>	
<b>Target 2: Catchment protection initiatives upscaled and implemented in priority areas across the basin</b>	<b>SAP PCN 4: Orange-Senqu River mouth management</b> <i>Outcome 2: Status of over-exploited/collapsed estuary species improved</i> <b>SAP PCN 5: Control of alien invasive species</b> <i>Outcome 1: Priority areas identified and selected</i> <i>Outcome 2: Alien vegetation cleared in prioritised areas</i> Botswana NAP PCN 3: Conservation and sustainable land Addressing: Sustainable natural resources use practices for livelihoods improvements Botswana NAP PCN 5: Integrated community-based natural resources management for Kgalagadi District (OSB) Lesotho NAP PCN 1: Integrated catchment management in the lower Mohokare sub-catchment Lesotho NAP PCN 3: Upscaling of the ORASECOM demonstration rangeland management project for sustainable management of Letšeng-la-Letsie (Ramsar site) Namibia NAP PCN 5: Control of invasive species through integrated management in a pilot area in the Orange–Fish River basin, Namibia Namibia NAP PCN 6: Alternative land-use options for improved rangeland conditions and sustainable livelihoods South Africa NAP PCN 5: Complementary support for LandCare Programme
<i>Strengthening of institutional frameworks for effective catchment management</i> <i>Rehabilitation of degraded rangelands and wetlands</i> <i>Improvement of ecosystem services functioning of catchments</i>	
These outcomes are integrated under Action Area 4, <i>Catchment degradation, watershed management, settlement and land-use planning</i> and Action Area 12, <i>Promotion/ maximising mainstreaming of key cross-cutting and enabling actions of the IWRM Plan</i>	