



**NILE BASIN INITIATIVE**  
INITIATIVE DU BASSIN DU NIL

STRATEGY

NILE BASIN SUSTAINABILITY FRAMEWORK

# **NBI WETLANDS MANAGEMENT STRATEGY 2022**



the 1990s, the number of people in the UK who are employed in the public sector has increased from 10.5 million to 12.5 million, and the number of people in the public sector who are employed in health care has increased from 1.5 million to 2.5 million (Department of Health 2000).

There are a number of reasons why the public sector has become an important part of the UK economy. One of the main reasons is that the public sector provides a wide range of services that are essential for the well-being of the population. These services include health care, education, and social care. The public sector also provides a number of other services that are important for the economy, such as the postal service and the railway network.

Another reason why the public sector has become an important part of the UK economy is that it provides a source of employment for a large number of people. In 2000, the public sector employed 12.5 million people, which is about 20% of the total UK workforce. This is a significant proportion of the workforce, and it shows that the public sector is an important source of employment for many people in the UK.

There are a number of challenges that the public sector faces in the future. One of the main challenges is that the population is ageing, and this is leading to an increase in the number of people who need health care and social care. This is putting a strain on the public sector, and it is likely that the public sector will need to provide more services in the future. Another challenge is that the public sector is facing a number of budget cuts, which is leading to a reduction in the number of people who are employed in the public sector.

Despite these challenges, the public sector remains an important part of the UK economy. It provides a wide range of services that are essential for the well-being of the population, and it provides a source of employment for a large number of people. The public sector is likely to continue to be an important part of the UK economy in the future, and it is likely that it will continue to provide a wide range of services that are essential for the well-being of the population.

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### About the Nile Basin Initiative

The Nile Basin Initiative (NBI) is an intergovernmental partnership of riparian states of the Nile River: Burundi, the Democratic Republic of Congo (DRC), Egypt, Ethiopia, Kenya, Rwanda, South Sudan, the Sudan, Tanzania, and Uganda. The NBI is led by the Nile Council of Ministers (Nile-COM) assisted by a Technical Advisory Committee (Nile-TAC) and a Secretariat (Nile-SEC) based in Entebbe. The NBI is committed to its shared vision of “achieving sustainable socio-economic development through the equitable utilization of, and benefit from the common Nile Basin water resources.”

### About this strategy

In 2011, the Nile Council of Ministers (NILE-COM) adopted the Nile Basin Sustainability Framework (NBSF) as a strategic framework document in which the priority thematic fields of activity are agreed for the sustainable transboundary management of the Nile Basin water resources. The NBI Wetland Management Strategy was developed as stipulated in the Nile Basin Sustainability Framework under its Key Strategic Direction 3: “Environmental and water-related natural resources management”. The Nile Basin Countries adopted the strategy in 2013. The NBSF and the Wetland Management Strategy were subsequently further mainstreamed as a strategic direction into NBI’s 10 Years Strategy (2017 - 2027) - Goal 4 Environmental Sustainability - Protecting and Restoring Degraded Ecosystems. The Wetland Management Strategy forms an integral part of the existing landscape of NBI policies, strategies and guidelines and complements national efforts of NBI member countries. The strategy focuses on the transboundary management of Nile Basin wetlands to guide their sustainable utilization and enhance their greatest possible contribution towards the common benefit for the Nile Basin. The NBI is the addressee of this strategy.

### Process of strategy development

The process of developing the 2013 Wetland Management Strategy involved comprehensive consultations and workshops at regional, national and local levels between 2007 and 2013 under the NTEAP and NBSF projects. The process included socio-economic and

ecological studies on wetlands in different sites in the basin, a baseline mapping of the Nile Basin’s wetlands, the demonstration of piloted transboundary wetland management plans in two selected transboundary wetland sites: Sio-Siteko (Uganda and Kenya) and Dinder-Alatish (Ethiopia and Sudan). The strategy has been developed in close consultation with and under the guidance of the members of the Nile-TAC, as well as the Wetlands Regional Expert Working Group. Major progress on the strategy implementation was achieved under the Project ‘Biodiversity Conservation and Sustainable Utilisation of Ecosystem Services of Wetlands of Transboundary Relevance in the Nile Basin’ Project funded by the International Climate Change Initiative (IKI) from the German Federal Ministry for the Environment in the period 2015-2021. Under projects three cross-border management plans were developed for Sango Bay / Minziro Forest (Ug/Tz); Semliki Delta (DRC/Ug) and Sio Siteko (Ug/Ky) as well as for the major South Sudanese wetland landscapes of Sudd and Machar Marches. A wetlands environmental flow requirement study was completed for the Mara wetland (Kenya and Tanzania). A wetlands inventory, a detailed hydrological model of the basin’s wetlands, a panel process on the economics wetlands, methods for environmental flow requirements of wetlands as well as assessments of the carbon stock and emission potential were completed.

As a result, a significant percentage (c 80%) of the 2103 strategy has been implemented. The NBI’s Wetlands Task Team - in a series of four consultations between 2019 and 2021 on the actions to be taken moving forward - recommended that instead of developing a basin wide management plan as foreseen under the 2013 Wetlands Strategy a more subsidiary approach be taken. This would be based on the one side of an update of the Wetland Management Strategy at the basin-wide level and on the other side an enhanced focus on wetland management plans and actions for specific important wetland landscapes. Subsequently, the strategy review mechanism was triggered and the strategic actions that had emerged from the Wetlands REWG consultations were incorporated into this 2021 update of the strategy.

## FOREWORD

*Dear Reader,*

**I**t gives me great pleasure to welcome you to the updated Nile Basin Initiative (NBI) Wetland Management Strategy (WMS) 2022. This Strategy is expected to continue fostering the sustainable management and utilization of the Nile Basin's wetlands; subsequently preserving and enhancing their environmental and socio-economic functions. The WMS will serve as a guide to national, transboundary and basin-wide efforts.

The updated WMS has benefited from the experience of implementing the 2013 original Strategy; and is therefore informed by extensive socio-economic assessments and ecological baseline studies on wetlands in different parts within the Nile Basin. These include an inventory and mapping of the Nile Basin's Wetlands, piloted trans-boundary wetland management plans, and implementation of key international conventions and agreements together with international best practices.

Furthermore, the Strategy builds heavily on previous studies carried out under NBI as well as an examination and systematic review of Nile Basin riparian countries' related legal and policy documents.

The guiding principles and approaches to strengthen trans-boundary cooperative wetlands management put forward by this Strategy are based on the rules, principles, and approaches of international, regional, basin-wide, as well as sub-basin experiences and lessons learned. Alignment of trans-boundary wetland management with national requirements was also ensured.

The updated WMS presents an operational definition and different classifications of wetlands; describes Nile Basin wetlands and their significance; highlights Nile Basin wetlands functions and values; justifies the applicability of the worldwide accepted principles and approaches (ecosystem-based approach; wise use, nature-based solutions approach; ecosystem-based adaptation approach and NBI's Environmental and Social policy principles) within the Nile Basin context; defines strategic outcomes together with their corresponding priority outputs; and lays down the respective implementation plan.

I expect that the updated Strategy will support the Nile Basin countries' efforts to reduce the rapid degradation of wetlands in the region, regulate and guide multiple developments in order to diminish existing pressures in a way that restores the Basin wetlands adaptive potential and therefore strengthens the overall resilience of the Basin's hydrological system. Once adopted, the updated WMS will bring about significant positive effects on water quality and quantity, with substantial laudable and tangible impacts on the livelihoods of local communities and their overall socio-economic development potential.

« This Strategy is expected to continue fostering the sustainable management and utilization of the Nile Basin's wetlands; subsequently preserving and enhancing their environmental and socio-economic functions. »



It is my hope that collaborative endeavors and proactive measures will be in place shortly so that the strategic means towards achieving sustainable management and conservation of wetlands are fully undertaken. The updated WMS will play a vital role in decreasing poverty, maintaining precious ecosystems and rich biodiversity, increasing rural development, maintaining pollution, stabilizing hydro-power, and limiting displacement of people - thus significantly contributing to the NBI Shared Vision and 10-Year Strategy (2017-2027).

I commend the Nile Basin Secretariat for developing this Strategy and thank the Government of the Federal Republic of Germany through the International Climate Initiative (BMU-IKI) for supporting the development process.

I call upon all Nile Basin countries to mobilize necessary resources to move forward with this Wetland Management Strategy.

*Sincerely,*

A handwritten signature in blue ink, appearing to read 'J. Lagu', with a horizontal line extending to the right.

**Hon. Josephine Joseph Lagu**  
Chairperson,  
Nile Council of Ministers (Nile COM),  
Acting Minister of Water Resources and Irrigation;  
and Minister of Agriculture and Food Security  
Republic of South Sudan



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## ACRONYMS AND ABBREVIATIONS

CBD	Convention on Biological Diversity
DRC	Democratic Republic of Congo
DSS	Decision Support System
EAC	East African Community
ENSAP	Eastern Nile Subsidiary Action Program
ENTRO	Eastern Nile Technical Regional Office
ESIA	Environmental and Social Impact Assessment
ESP	Environmental and Social Policy (NBI)
IWRM	Integrated water resources management
LVBC	Lake Victoria Basin Commission
NBI	Nile Basin Initiative
NBSF	Nile Basin Sustainability Framework
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NELSAP-CU	Nile Equatorial Lakes Subsidiary Action Program Coordination Unit
Nile-COM	Nile Basin Council of Ministers of Water
Nile-SEC	Nile Basin Initiative Secretariat
Nile-TAC	Nile Technical Advisory Committee
RAMSAR	Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat
RAMCEA	Ramsar Center for Eastern Africa
SAP	Subsidiary Action Program
SSEA	Strategic Social and Environmental Assessment
UNFCCC	United Nations Framework Convention on Climate Change



# NBI WETLAND MANAGEMENT STRATEGY

## 1. PREAMBLE

This Wetland Management Strategy is premised on the following observations pertaining to Nile Basin countries' efforts to sustain the Nile and its associated resource base for future generations, while also striving to judiciously utilize them to address the development needs of the present generation, particularly to tackle endemic and persistent poverty that characterizes most of the basin countries. The observations are summarized below:

1. Today's population and economic growth and development put growing demands on the river system and the basin's resources. Once the carrying capacity is surpassed, the Nile Basin could sustain irreversible damage.
2. The Nile harbors valuable natural resources. Though it is difficult to assert their continued survival into the future, the Nile Basin, at present, boasts unique environmental and cultural assets.
3. The Nile Basin is highly vulnerable to the impacts of climate change owing to a multiplicity of factors. Basin communities have limited ability to cope with the negative impacts of climate variability. There is scientific consensus that the region can expect an increase in frequency and severity of extreme events like floods, droughts, and heat waves, and an intensification of natural variability. The socio-economic consequences of climate change in the basin will be severe and exacerbate the impacts of existing challenges. These include, among others, negative impacts on agriculture, fisheries and livestock, with strong implications for food security and future economic growth.
4. Wetlands are key natural environmental assets providing crucial ecosystem services that support livelihoods and socio-economic development in the basin. Their role in mitigating climate change and supporting climate adaptation as well as safeguarding water, food and energy security is currently threatened through their insufficient protection and management.
5. Recognizing the above challenges and threats, Nile riparian governments are putting in place plans, policies, strategies and other measures to respond.
6. National-level measures, while playing critical roles in their own right, cannot sufficiently address basin-wide and transboundary full-scale impacts and threats on shared waters.

« The Nile Basin Initiative (NBI), being the only forum that brings together the Nile riparian states, has been mandated to initiate and implement measures that complement national efforts to address these transboundary challenges. This strategy aims to reverse wetlands degradation and institute cooperative management and wise use practices for these important transboundary ecosystems. »

The Nile Basin Initiative (NBI), being the only forum that brings together the Nile riparian states, has been mandated to initiate and implement measures that complement national efforts to address these transboundary challenges. This strategy aims to reverse wetlands degradation and institute cooperative management and wise use practices for these important transboundary ecosystems.



## 2. INTRODUCTION

### 2.1. Relevance of wetlands for sustainable development of the Nile Basin

Wetlands are some of the most important ecosystems in the world and provide critical ecosystem services that are indispensable to human beings and biodiversity's health and welfare. In the Nile region, wetlands perform crucial functions, including providing food, water, livelihood sources, improving water quality, providing resilience against drought and flooding, and sustaining biodiversity. Many of these benefits – such as water quality and biodiversity – do not only reach the populations living near them, but also produce positive effects for communities in the basin that live well outside the wetland area.

The River Nile – the longest river in the world – has one of the most complex networks of freshwater subsystems, of which wetlands are an integral component. Embedded within this system, the Nile Basin wetlands maintain close interlinkages. Thus, given the high level of interdependence and positive transboundary effects

of wetlands well beyond national borders, the urgent need to sustainably manage and protect them is a matter of regional and international interest, which demands a basin perspective on the benefits and opportunities that these ecosystems present.

Wetlands represent approximately six percent of the global land surface. In the Nile Basin, wetlands and water bodies represent at least four percent of the total area. This relatively small portion of the territory provides a great range of basin-wide benefits. Circa 70 major wetlands of relevance for the Nile system have been identified by the riparian countries, with concentrations in two areas: the Equatorial Lakes region and the Sudd area in South Sudan (see full list in the Annex). Still, in their aggregation many smaller wetlands are crucial for the Nile Basin's overall resilience. Currently, circa 20 Nile Basin wetlands are designated as “Ramsar wetlands of international importance”, providing wintering grounds for migratory birds and important biodiversity hot spots.



Nevertheless, wetlands in the Nile Basin are rapidly degrading. Multiple pressures alter their ecosystems. Rapid population growth and economic development for improved conditions of the people in the riparian countries impose significant pressure on water and wetland resources in the basin. The Nile Basin countries have some of the highest population growth rates in the world. The majority of the population resides in rural areas, their livelihoods heavily depending on the services provided by wetlands.

As demands on wetlands land to support this economic growth increases, the major threats to wetlands include large-scale conversion, drainage, land-use changes, pollution through municipal and industrial effluents, agriculture, overfishing and reduction of flows from upstream development. Consequently, the Nile Basin is losing its rich wetlands biodiversity and regulating capacity for example related to floods and sediments – with negative downstream effects.

Besides changes in the land use of the wetlands, the upstream development of hydraulic infrastructure that regulates flows such as dams, increased upstream abstraction mainly for irrigation and upstream catchment degradation alterations related to suspended load sediments directly and indirectly affects wetlands. Their productivity is reduced significantly through altered hydrological regimes, preventing the filling of seasonal wetlands - the potential loss of functions and services is often underestimated. This has to be carefully reflected in development strategies to enhance the Nile Basin's resilience to climate change.

In addition, the Nile region is vulnerable and will be affected by the impacts of climate change. The basin's sensitivity to climatic variability originates from its relatively low water discharge compared to the size of the basin. Wetlands are particularly vulnerable to climate change as they occupy the transition zone between aquatic and terrestrial environments. Thus, slight alterations in precipitation and groundwater levels can have dramatic effects such as contraction in size and drying out altogether.

Ultimately, these problems significantly impact on water quality and quantity, biodiversity and ecosystem services with substantial impacts on livelihoods of local communities and the socio-economic development potential of the Nile Basin's countries at large. These environmental concerns are moreover compounded by governance and management challenges further elaborated in the next chapter of this strategy.

## 2.2. Ecosystem functions, services and benefits of wetlands

Wetlands provide ecosystem services that are critical for the region's sustainable socio-economic development, substantially contributing to their water, food and energy security. The direct economic value of or benefits from these ecosystems derives from the use of its goods (fresh water, fish, crops and building materials) and services (water retention and treatment, storage and recycling of nutrients and waste, among others). It is estimated that ecosystem services – in particular also from wetlands - contribute substantially to the economies of the Nile riparian countries.

Moreover, the regulation functions performed by wetlands, such as natural flood control and flow regulation, erosion control and climatic stabilization (through their water retention and buffering capacity), help to make the region more resilient to climate change impacts. Due to their potential for storing water and balancing water flows, and their role as carbon sinks, wetlands have important climate change adaptation and mitigation functions.

For a detailed overview of the key ecosystem functions, services and benefits of wetlands, see the table in the Annex 1.

## 2.3 Relevant definitions for basin approach to wetland management

Four main concepts are significant in view of the transboundary nature of wetlands in a river basin.

The first and foremost important one is the definition of 'wetlands'. Thereafter, the next three (national wetlands, transboundary wetlands and wetlands of transboundary importance) are particularly important for NBI's approach for wetland management.

To understand the multifaceted role of wetlands in a river basin and in order to guide their management, these concepts provide orientation for their classification.

**Wetlands:** For the purpose of this strategy, NBI defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. The term "wetland" is applied to a broad range of different habitats and ecosystems including swamps, flood plains, seasonally flooded grasslands, the edges and shallow waters of rivers and lakes, estuaries and coastal marshes, as well as mangroves and peat bogs.

**National wetland:** wetlands circumscribed within the territory of one state, thus lying in a sovereign area.

**Transboundary (or cross-border) wetlands:** wetlands those that cross international borders or are located on boundaries between two or more states.

Wetlands of transboundary importance: wetlands that are located within a catchment shared by more than one state. Therefore, the actions of the upstream states within the catchment area may result in changes to the ecosystem of the wetland in the downstream. Likewise upstream modifications of wetlands may have a strong transboundary impact downstream. Under the guidance of the Ramsar Convention, international cooperation is to be extended between these states. In the Nile region, a good example is the dependence of the Sudd wetland in South Sudan on water releases from Lake Victoria in Uganda and subsequently the management of the Sudd on the flows downstream. Cross – border wetlands are at the same time wetlands of transboundary importance.

The fifth definition is an additional term agreed on internationally by contracting parties of the Ramsar Convention on Wetlands of International Importance.

**Ramsar Wetlands of International Importance:**

At the time of joining the Convention, each Contracting Party must designate at least one wetland site within their territory for inclusion in the List of Wetlands of International Importance. They are recognized as being of significant value not only for the country or the countries in which they are located, but for humanity as a whole. Parties continue to designate wetlands for inclusion in the List. They select suitable wetlands for designation by referring to the Criteria for identifying Wetlands of International Importance.

For purposes of hydrological assessments used in basin planning – especially in applications of the Nile Basin DSS, NBI further identifies from the wetlands of transboundary importance those wetlands that have major effects on the hydrology.

**Wetlands of transboundary importance with major hydrological interlinkages:** wetlands of transboundary importance who have major effects and interlinkages with the hydrology at the scale of the basin-wide assessment to such a degree that this merits their disaggregated consideration in water balance assessments. This definition is scale dependent and based on hydrological analysis. These wetlands are selected for inclusion in the Nile Basin DSS and become part of the basin wide water resources assessments.

Another further definition is relevant for nature-based climate change mitigation action.

**Peatlands:** Peatlands are terrestrial wetland ecosystems in which waterlogged conditions prevent plant material from fully decomposing. Consequently, the production of organic matter exceeds its decomposition, which results in a net accumulation of peat.



## 3. THE NILE BASIN WETLANDS INVENTORY AND SCOPE OF THE STRATEGY



**N**ile Basin wetlands are varied in size and significance. They stretch from high-altitude mountain bogs, as those in the Rwenzori Mountains, to papyrus dominated swamps like the Sudd, low-lying flood plains like the Machar Marches up to the delta wetlands in Egypt. Along this range of altitudes and geographic locations, wetlands exhibit a series of diverse environmental characteristics that create unique ecosystems.

Detailed information on each of the Nile basin wetlands have been captured in an inventory that was developed under Nile Basin Transboundary Wetlands Project (2015-2021). This inventory brought together and summarized information on the wetlands from various sources. The inventory was complemented with land use and land cover analysis from 1985 and 2015 based on remote sensing data.

This inventory – available on the NBI portal - constitutes the baseline and scope for this wetlands strategy.

Based on the definitions of the previous section, 68 wetlands in the Nile Basin are considered to be of transboundary importance (see Annex 3). In their

aggregation many smaller wetlands are important for the Nile Basin's catchments. Of these 15 are part of cross-border wetland landscapes shared by two countries. 20 are also designated as “Ramsar wetlands of international importance”, providing wintering grounds for migratory birds and important biodiversity hot spots.

The identified wetlands have been further clustered into 12 main wetland groups. 1. ND = Nile Delta; 2. DW = Dinder wetlands; 3. LTW = Lake Tana wetlands; 4. BASW = Baro Akobo Sobat wetlands; 5. Sudd; 6. BeG = Bahr el Ghazal wetlands; 7. LKW = Lake Kyoga wetlands; 8. SW = Semliki wetlands; 9. LVW = Lake Victoria wetlands; 10. KW = Kagera wetlands; 11. MW = Mara wetlands; 12. SNYN = Sio Nzoia Yala Nyando wetlands.

### 3.1 NBI's approach to wetlands management

The broad variety of functions and services provided by wetlands and the intricacies of the ecosystems make their restoration and management a complex challenge. Although these threats have been addressed

to some extent by individual riparian states, given the interconnectivity of wetlands, each of these issues has a transboundary dimension that needs to be understood and addressed. An integrated perspective on the management of competing uses at multiple scales and a cooperative approach to protect the Nile wetlands are crucial to sustain basin-wide benefits, maintain the integrity of these valuable ecosystems, and retain the high levels of functions and services that they perform.

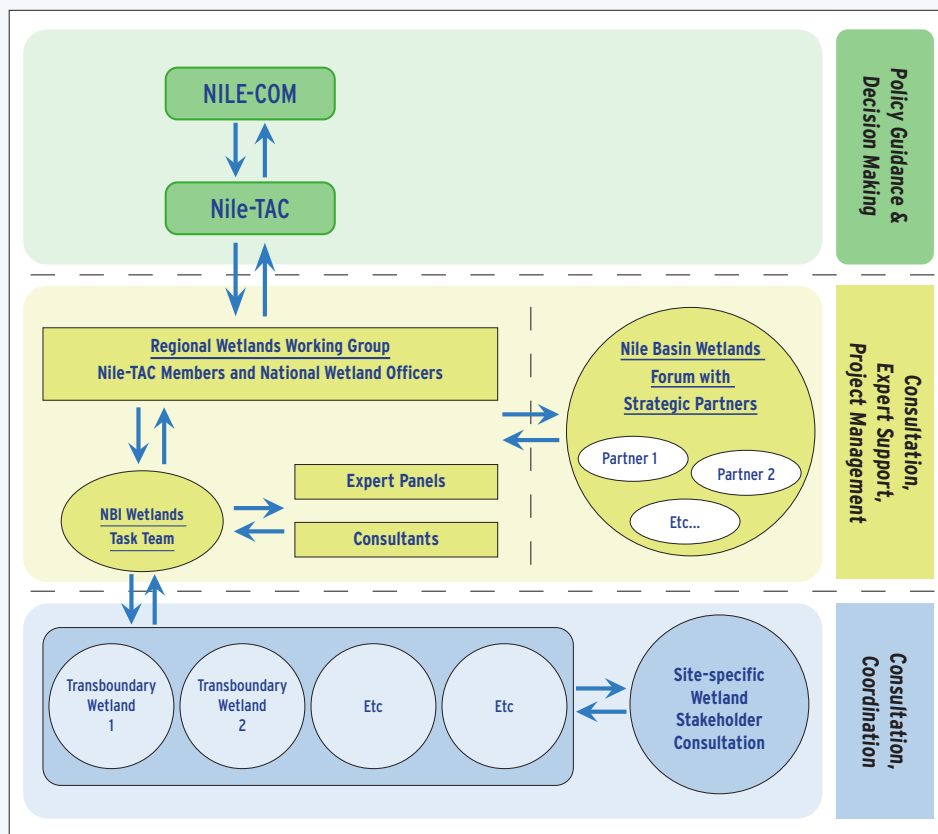
Most riparian counties have acknowledged the importance of wetlands through the establishment of specific policies and guidelines and provisions in the related legal frameworks. Furthermore, they have committed themselves to the protection of wetlands by signing the main international and regional conventions, such as the Ramsar Convention that obliges states to cooperate in the management of shared wetlands. Other relevant conventions for wetland that the Nile riparian countries are parties to include the Convention on Biological Diversity (CBD), The United Nations Framework Convention on Climate Change. Furthermore, they are parties to the Convention on

the Conservation of Migratory Species of Wild Animals (Bonn Convention), as well as the Agreement on the Conservation of African- Eurasian Migratory Water birds (see Annex).

NBI provides a unique platform for joint action and transboundary perspective promoting sustainable and responsible management and development of shared wetlands in the Nile. NBI aims to complement national planning, management and restoration, and to act in compatibility with relevant regional and international agreements.

This strategy sets out the goal and objectives, strategic outcomes and priority outputs for a joint transboundary river basin level response to support the sustainable management and development of wetlands in Africa's largest shared river basin.

To guide the wetlands strategy implementation, NBI has established the Wetlands Regional Expert Working Group under its governance structure. The REWG brings together those responsible for water resources planning and those for wetland management.



At the level of the Subsidiary Action Programs, NBI has developed an approach to support member states in the management of cross-border wetland landscapes. The approach provides orientation to the NBI and member states.

The approach can be summarized into four-steps as follows:

1. Wetland Monographs: ecosystem, hydrological and socio-economic understanding of the transboundary wetlands site.

In this phase, a series of technical studies are developed for the transboundary landscape, including a hydrological and environmental flows assessment and an economic valuation of ecosystem services

2. Transboundary Wetland Management Plan and transboundary wetland management arrangement:

In this phase the management priorities are developed and captured into a management plan. The establishment of a transboundary wetlands management arrangement (e.g. transboundary wetlands committees) guide the cooperative development and implementation of the management plans.

3. Fast-track small-scale Grants and Measures:

In parallel to the establishment of transboundary wetlands committees, the implementation of small scale measures to initiate implementation and to fosters cooperation and trust among the parties sharing the transboundary site. They are important for countries to

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4. Wetland Conservation Plans (CIP), investment project development and resources mobilization:

from the management plans, Wetlands Conservations Plans are developed, that present the business case for investment measures to be to mobilised finance for conservation measures that support the implementation of the wetland management plans. From these CIPs or equivalent, full scale investment projects are developed. The SAPs play an important facilitating role in the development, structuring and resource mobilization of these investment projects upon request of the countries. Involved countries need to ensure alignment to national development plans and funding priorities.

The Annex 2 shows the status of implementation of the approach across different cross border wetlands as well as other wetlands of transboundary importance.



## 4. CHALLENGES TO SUSTAINABLE WETLANDS MANAGEMENT THE STRATEGY AIMS TO ADDRESS



Currently, the management of wetlands continues to be a challenge to the riparian countries. The degraded state of the wetlands of the Nile Basin and the series of pressures and threats that these ecosystems face, are indicators of the difficult circumstances. The ability of the Nile Basin Member States to cooperate in order to tackle the existing threats is crucial. In this regard, a series of challenges arises in the joint management of wetlands in the basin that will need to be overcome to achieve successful outcomes. The key challenges to be addressed in this strategy are listed below:

### a. Insufficient data, information and knowledge on wetland ecosystems and management best practices

Availability of data is an important challenge in the management and conservation of wetlands. A series of baseline studies were developed by the Nile Basin Initiative as part of the activities to implement the Wetlands Strategy – these covered the Nile basin wetlands biodiversity, hydrology, valuation of ecosystem services, environmental flows and carbon storage capacity. From these studies, a Nile Basin Atlas was produced as well as the Nile Basin Wetlands Inventory.



« The uncertainty that arises from the lack of knowledge makes decision-making complex and challenging. The need for the Nile riparian countries to strengthen the knowledge base is crucial to contribute to the conservation of wetlands. »

Moving forward, more detailed information is required at the level of key transboundary wetland landscapes to inform their management. In order to guide the sustainable utilization of wetlands and conservation and planning processes, continued regular monitoring of the status of the wetlands at the basin level remains necessary.

The awareness and understanding of the potential wetlands in terms of ecosystem-based adaptation and mitigation approaches is still insufficient. Peatlands have recently received more attention with regards to their potential contribution to mitigation – yet this is not yet well understood and practices such as rewetting, restoration, low carbon management and paludiculture not yet sufficiently developed.

The uncertainty that arises from the lack of knowledge makes decision-making complex and challenging. The need for the Nile riparian countries to strengthen the knowledge base is crucial to contribute to the conservation of wetlands.

### b. Lack of a cross-border and basin transboundary perspective in the management of wetlands

Given the both the cross-border and transboundary importance of wetlands in the Nile Basin, a basin perspective to plan and make decisions regarding their use, and management are needed. Yet wetland management is fragmented from a basin perspective as well as from a sectoral perspective. Low coordination of management activities between sectors and among riparians of transboundary wetlands constrains

effective action to sustain the overall wetland benefits for the socio-economic development in the basin. Differing problem definitions and sets of priorities hamper sustainable management decisions in the basin. Most Nile Basin wetlands that are cross-border or of transboundary importance still do not have wetland management plans and/or conservation investment plans in place. Also the hydrological interlinkages are not well understood or taken into consideration in water resources and basin planning – this both in relation to the environmental flow requirements of wetland ecosystems and the effects of wetland modification on the downstream hydrology. Information in support of wetland management needs to be acquired at multiple scales from regional, national and local assessments to guide policymaking and prioritization of responses. Considerations of multiple stakeholder involvement are of major importance for the wetland management. Recent experience in the SAPs also demonstrate the importance of sub-basin specific cooperation arrangements that interlink wetland and catchment management and development. Furthermore, the existence of partnerships and cooperation with relevant regional and international institutions -such as the RASMAR Center for Eastern Africa - to amplify efforts is still limited.

### c. Limited human, institutional and financial capacities for management of wetlands of transboundary importance at the national level

The protection and management of wetlands needs considerable human resources to ensure surveillance, regularly monitor their status and fund restoration activities. Wetlands in the basin are vast and often not easily accessible, and their extensive utilization is essential for the livelihoods of local communities. Awareness, understanding and joint management and planning are not yet sufficient, as they require substantial financial resources currently not available. It is necessary to strengthen capacities at the operational

« Taking advantage of mitigation opportunities through access to international carbon finance against land use changes and the promotion of clean energy sources (for example hydropower) could create win-win opportunities for the basin. This potential is not yet sufficiently taken into account into decision making. »

level and countries' coordination abilities to support the implementation and enforcement of existing policies.

Need for strengthening the capabilities for wetland management at local and national institutions responsible for the protection and management of wetlands in the region continues to be high – this includes need for more peer-to-peer exchange to learn from good practices already developed across the region.

In general, funding of wetland conservation and management is lacking across the basin. There is a need to identify and access a wide range of funding sources to support the protection and management of wetlands in the basin. Only a few countries have a wetland specific policy or strategy in place. Instead, they are governed by different policy frameworks. Thus, the allocation of funds does not contain the necessary funding support for wetlands.

#### d. Nature based solutions are not sufficiently reflected in development priorities

Larger-scale development processes across the basin, such as infrastructure development (e.g. multi-purpose reservoirs) and agricultural conversion are potentially threatening wetland integrity and reduce the ecosystem services they provide. The protection and sustainable management of wetlands has great – but often undervalued - potential for the socio-economic development of the Nile Basin. The concept of nature-based solutions (or green infrastructure) that focuses on investing in the enhancing the multifunctional use of ecosystem services as more economic alternative for addressing many other challenges such as maintaining water quality and flows. The same applies to nature-based adaptation approaches to climate change, e.g. using wetlands enhance flood management. Also, In the field of climate change mitigation, the ecosystem services of peatlands as carbon sinks presents significant unused opportunities. Taking advantage of mitigation opportunities through access to international carbon finance against land use changes and the promotion of clean energy sources (for example hydropower) could create win-win opportunities for the basin. This potential is not yet sufficiently taken into account into decision making.

## 5. GUIDING PRINCIPLES AND APPROACHES



**T**his strategy is informed by core principles and approaches for wetland management, that guide NBI in the implementation of the wetlands strategy.

### a. Ecosystems-based approach

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Thus, the application of the ecosystem approach will help to reach a balance of three objectives: conservation; sustainable use; and the fair and equitable sharing of the benefits.

### b. Wise use principle

Wise use of wetlands is the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development. The wise use of

« Wise use of wetlands is the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development. »

wetlands maintains its ecosystem benefits and services with a long-term perspective to conserve biodiversity and ensure human well-being.

### c. Nature based solutions approach:

Nature based solutions are actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits. Common societal challenges include climate change, food security, disaster risks, water security, social and economic development as well as human health



#### d. Ecosystem - based adaptation approach:

the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change.

#### e. Ecosystem-based mitigation approach:

the use of ecosystems and biodiversity to reduce greenhouse gas emissions. Natural systems such as peatlands act as carbon sinks and reduced emissions can be achieved through interventions that maintain or enhance these ecosystems

#### f. NBI's Environmental and Social Policy Principles

In addition to the principles for wetland and ecosystem management, this strategy is guided by nine overarching principles that inform all NBI's interventions. These are elaborated in detail in the NBI's Environmental and Social Policy (ESP). These are (1) Sustainable socio-economic development (2) Basin-wide cooperation (3) Subsidiarity (4) Compatibility and complementarity (5) Precautionary principle (6) Public participation and consultation (7) Accountability and transparency (8) Social equality

## 6. STRATEGY GOAL AND OBJECTIVES

### Goal

In view of the pressing threats and challenges for Nile Basin wetlands, the overarching goal of this Wetland Management Strategy is to foster the sustainable management and utilization of the Nile Basin's wetlands.

### Strategic objectives

This strategy has the following five strategic objectives that govern NBI's Wetland Management Strategy. These are established on NBI's recognized and mandated role and guided through the wetland specific guiding principles:

**Objective 1:** Enhance the data, information and knowledge on wetland ecosystems and management best practices for cross-border wetlands / wetlands of transboundary importance in the Nile Basin

**Objective 2:** Raise awareness on the important role of wetlands, their ecosystem services and nature-based solutions for the basin's development.

<< In view of the pressing threats and challenges for Nile Basin wetlands, the overarching goal of this Wetland Management Strategy is to foster the sustainable management and utilization of the Nile Basin's wetlands. >>

**Objective 3:** Enhance cooperative approaches for the sustainable management of cross border wetlands and wetlands of transboundary importance

**Objective 4:** Strengthen national human and institutional capacities for the effective management of cross-border wetlands / wetlands of transboundary importance.

**Objective 5:** Mobilize resources for sustainable management of cross-border wetlands / wetlands of transboundary importance in the Nile Basin.

These strategic objectives give rise to expected strategic actions achievable in short, medium and longer-term timeframes, depending on the NBI's current levels of readiness to implement them.

## 7. STRATEGIC ACTIONS

The strategic objectives shall be realized through the implementation of a defined set of strategic actions further elaborated and described in this section. Some of the strategic actions cut across multiple policy objectives.

### Strategic Action 1: A wetlands inventory and portal is in place and used to regularly monitor and report on the state of the basin's wetlands

A comprehensive baseline assessment of transboundary wetlands and wetlands of transboundary significance of the Nile Basin was carried out by NBI (2018-2020). The baseline assessment includes a Wetlands Inventory.

Wetlands in the database have been categorized according to agreed criteria related to transboundary significance.

The Nile Basin Wetlands Inventory and Database is accessible to all the Nile riparian countries for informing decision-making and monitoring. To this end, the Inventory and Database shall be developed to a wetland portal that is integrated into NBI's Integrated Knowledge Platform (IKP). This digital online Nile Basin wetlands portal will enable stakeholders to update the inventory and upload relevant information for sharing (such as management plans). The updated inventory can subsequently be used for monitoring and reporting will be made available to support the wetland monitoring under the State of Basin reporting process.

Riparian countries will regularly report on the status of wetlands under the State of Basin reporting process and aligned to its cycle. To this end NBI has prepared a "Nile Basin Monitoring Guidelines" that is aligned with the State of the Basin (SoB) reporting and the reporting requirements of countries vis-a-vis relevant multilateral environmental agreements (such as Ramsar Convention, CBD, UNFCCC).

A help desk function on the wetland portal to assist monitoring building on sufficient internal and external capacity for its operation and maintenance will be provided.

As part of the baseline studies, the NBI published in 2021 a Nile Basin Wetlands Atlas whose focus is awareness raising for information contained in the inventory. The Atlas shall be updated every 10 years.

### Strategic Action 2: Wetland ecosystems are mainstreamed into water resources management and basin planning, taking their hydrological interlinkages into consideration.

Wetlands and their ecosystem services have been integrated into the Nile Basin DSS Tool that is used to assist planning. This methodology is based on more detailed studies of hydrological inter-linkages between wetlands in the basin and enables assessment of impact of large-scale development processes on critical transboundary wetlands and help to assess ranges of potential impacts on selected wetlands.

In addition, a guidance and methodology for wetland environmental-flow requirement assessment has been developed. A coarse basin-wide environmental flows assessment has been completed as well as several wetland site applications. A separate Strategy on Environmental Flows is in place and guides NBI's approach.

This planning support toolbox allows for an integrative perspective regarding the hydrological regime and interconnectedness of wetlands cross the basin, also incorporating a cross-sectoral perspective to balance the various uses and demands on the resources.



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This methodology is based on more detailed studies of hydrological inter-linkages between wetlands in the basin and enables assessment of impact of large-scale development processes on critical transboundary wetlands and help to assess ranges of potential impacts on selected wetlands. >>

This planning support toolbox now needs to be continuously applied and used to inform riparian countries and provide concrete recommendations to inform decision-making on relevant aspects in the management of transboundary wetlands, water resources management and project development.

### Strategic Action 3: Information on the ecosystem services and valuations of their contribution to socio-economic development is enhanced and mainstreamed into basin development and project- planning

Understanding of the role of wetlands for the socio-economic development of the basin and support to the basin's resilience are still not widely acknowledged in planning and management. Studies on the services and function of wetlands to maintain and stabilize the regional water balance, reduce and buffer extreme events, and capacity to store carbon, as well as economic valuation of their contributions in sustaining livelihoods and fisheries for the basin's populations can help to inform management decisions and activities.

NBI has conducted a compilation and assessment of wetland valuation studies from the Nile basin, which also provides guidance on valuation approaches. The study repository (meta data) needs to be made easily accessible on the wetland portal. Additional studies should be conducted to enrich the body of evidence

and mainstream the ecosystem service assessment and valuation approach into the basin project development process to better reflect on the critical role of wetlands as the basin's natural infrastructure in investment planning process.

### Strategic Action 4: Development and sharing of knowledge and best practices on wetlands in relation to global challenges on biodiversity, climate change mitigation and adaptation action are enhanced.

Wetlands play an important role in the global agendas to address challenges related to sustaining biodiversity, mitigating and adapting to climate change. This is also captured in key international agreements that relate to wetlands such as CBD, UNCCC, RAMSAR and the SDGs. NBI can provide a regional platform to assist countries to increase knowledge basis, share experience and develop best practices as well as advocate accordingly.

Key topics to address under this approach are: (a) biodiversity - This links to topics, such as the protection of habitats to maintain the basin's biodiversity and internationally important migratory bird routes. (b) climate change mitigation - This in particular relates to the role of peatlands as carbon stock and avoiding greenhouse gas emissions through drainage. (c) climate change adaptation - This in particular relates to actively using nature-based adaptation approaches that use wetland ecosystem services as green infrastructure e.g. in relation to flood and drought risk management.

Specifically, NBI has initiated the mapping of peatlands and their carbon stocks. NBI will support countries to assess their peat resources and develop actions that can be incorporated into the Nile Basin's Countries Nationally Determined Contributions (NDCs). NBI will support countries to pilot peatland management approaches that reduce Greenhouse GAs Emissions such as rewetting and restoration approaches as well as paludiculture (i.e. sustainable use of undrained peatlands).

In line with the Ramsar Convention Resolution X.27 on Wetlands and Urbanization, NBI can support countries to build capacity and peer-to-peer learning on the management of, urban and peri-urban wetlands in accordance with an ecosystem approach, taking into account issues including climate change, ecosystem services, food production, human health and livelihoods. Special focus will be on the role and impact of constructed and/or rehabilitated wetlands to urban flood and water quality management and livelihood opportunities are generated and/or enhanced. This approach can be mainstreamed into NBI's investment plans on flood management and water quality.

### Strategic Action 5: Development of management plans and arrangements for cross-border and major wetlands of transboundary significance is supported, integrating a multi-purpose perspective on the development of critical transboundary wetlands in the basin

Key to sustainable management of wetlands of transboundary significance is that site specific management plans and arrangements are in place and being implemented. Based on the subsidiarity principle, NBI will provide support in this regard to countries or clusters of countries who are the sovereign custodians of these respective wetlands. NBI and other regional entities have developed and applied a step-wise approach to support countries. The approach features the development of the transboundary management plan for a given transboundary wetland accompanied by a Conservation Investment Plan (CIP). The CIP serves as a tool for mobilizing resources for implementation and coordination of management plans priorities.

Countries that share a cross-border wetlands or are custodians of wetlands of transboundary significance - upon request - will be supported to enhance the wetland landscape management, especially through developing projects and mobilizing resources to address the needs

« Countries that share a cross-border wetlands or are custodians of wetlands of transboundary significance - upon request - will be supported to enhance the wetland landscape management, especially through developing projects and mobilizing resources to address the needs and by enabling exchange of best-practices and learning form approaches that work. »

and by enabling exchange of best-practices and learning form approaches that work.

NBI will also support establishment of transboundary wetland cooperation arrangements - such as joint wetland committees. The implementation and coordination of the plans and measures will ideally be linked to the relevant sub-basin institutional arrangements that countries have already put in place. Linking the wetland and sub-basin coordination mechanisms is key for effective natural resources management at the cross-border level.

NBI can also assist countries to establish trans-frontier wetland conservation areas - such as for example establishing cross- border RAMSAR sites.

### Strategic Action 6: Resources for the portfolio of wetlands investment projects are mobilized, to support the implementation of wetland management plans in wetlands of transboundary significance.

Countries and NBI have and will continue to develop a portfolio of wetland investment projects, that are based on management and conservation investment plans for cross border wetland landscapes and wetlands of transboundary significance. NBI - through its SAPs - will support countries to mobilizes investment resources for implementation. Pooling of wetland projects into dedicated regional wetland investment programmes

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(WIP) and/or integrating wetland projects into other investment programmes are both viable options in this regard. NBI will help countries to access new lines of funding especially related to climate and biodiversity finance as well as draw on funding opportunities for regional cooperation.

While wetland ecosystem services could be the source of substantial revenue streams, adequate mechanisms to harness this potential need to be developed. There is a need to identify and tap potential funding streams, for example in the frame of climate and biodiversity funding and other emerging specialized instruments. Moreover, new approaches, such as water funds based on ecosystem payments need to be developed. Regional approaches to fund mobilization will significantly improve access to funding, since the bundling of wetlands for funding applications will broaden the range and scale of funding streams for which they are eligible.

### Strategic Action Area 7: Recommendations on the management and conservation of transboundary significant wetlands are taken into account in national planning and management

Concrete recommendations for riparian countries' conservation and management efforts on shared wetlands shall be regularly provided by NBI. Recommendations will be delivered from the basin-wide assessment of development impacts and require an integrative planning perspective to sustain the overall benefits and functionality of the basin's wetland network.

Specific recommendations for different wetland categories of transboundary relevance will be elaborated.

Furthermore, recommendations on the role of wetlands for national biodiversity, climate change adaptation and mitigation strategies and actions shall be provided.

Recommendations will also be presented in different NBI publications, including the wetlands atlas, the state of the basin report, and specific policy briefs and knowledge products.

NBI can support the mainstreaming of recommendations through NBI governance including the Wetlands REWG, the Nile Basin Wetlands Forum or support and engagement with national wetland working groups.

### Strategic Action 8: The management of the basins wetlands is supported by regional cooperation platforms and mechanisms

NBI's Wetlands Regional Expert Working Group has been established as a regional cooperation mechanism to support cooperation on transboundary wetland management and help to convene science-policy dialogues for transboundary wetland management. It shall be utilized for concrete cooperation projects and to cooperate around national activities and approaches. This platform shall call meetings on demand on particular issues. Engagement of relevant country policy makers in specific processes shall be ensured.

To further strengthen regional cooperation on transboundary wetlands, linkages with relevant regional initiatives and international conventions related to wetland management shall be strengthened. NBI has to date entered close cooperation with the RAMSAR Convention with its RAMSAR Center for Eastern Africa (RAMCEA) as well as the Global Peatlands Initiative. Developing the strategic partnership with the Ramsar Center for Eastern Africa (RAMCEA) can



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be particularly beneficial to strengthen the cooperation between the river basin management with the wetland management stakeholders across the basin.

NBI through the Nile Basin Wetlands Forum has established a platform for engaging with other strategic partners mainly from the non-governmental sector. This platform needs to be maintained and further strengthened in relation to all strategic action areas identified in the strategy. The Nile Basin Development Forum has developed into one of the dedicated regular opportunities for the Wetlands Forum to meet and exchange.

NBI aims to maintain and mobilize resources for the position of an Environmental/ Wetland Expert in its staff, to be able to provide the required help-desk and coordination function on the strategic actions of the wetlands strategy.

### Strategic Action 9: Capacity of national stakeholders for the sustainable management of the basins wetlands is strengthened

Capacities of national stakeholders (both at community level and at the decision makers level along the stakeholder continuum) to effectively manage the Nile Basins wetlands shall be strengthened. To fulfill its mandate in supporting riparian countries with the management of their shared resources, specific training programs and expert support to improve the

management of transboundary resources shall be made available at the request of countries. The capacity building efforts shall support the implementation of all the strategic actions identified in the strategy and apply a variety of suitable approaches.

NBI will actively develop and maintain relations with regional wetland experts through involvement in its activities, that can subsequently be called in to support wetland management at the regional or national level as need arises.

### Strategic Action 10: Communication and awareness raising to promote the sustainable management of the Nile Basin wetlands is mainstreamed and enhanced

A Wetlands related communication shall be mainstreamed in NBI's approach and communication strategy and avenues to disseminate the generated information and knowledge to relevant stakeholders across the basin. NBI will use opportunities offered by global and regional thematic days i.e. World Environment Day, World Wetlands Day, e.t.c, to raise awareness on sustainable management and protection of wetlands.

Adequate communication products shall be defined. The approach shall encompass a strategic approach centred around the NBI website and the wetlands portal as the core knowledge hub. The approach will assist the further utilization in the countries and within NBI of the knowledge products available. Wetland related studies will continue to feature in the publication of Technical Reports and policy briefs. The topic of wetlands shall feature in NBI's media communication - actively using occasions such as the International Wetlands Day to showcase regional cooperative efforts.

The approach shall be based on NBI's approach on joint learning in the basin and be implemented in close partnership with NBI's strategic partners - especially also those convened in the Nile Basin Wetlands Forum.

## 8. IMPLEMENTATION ARRANGEMENTS



**T**he principal implementation mechanism of this strategy is the mainstreaming of identified strategic actions into the relevant work programs and action plans at national, sub-regional and basin-wide levels:

NBI will mainstream the implantation of the strategy into the Strategic Action Plan / Programmes (Nile-Sec, NELSAP, ENSAP).

NBI will encourage and support mainstreaming into other relevant programs of regional inter-governmental partner institutions of NBI in the Nile Basin as appropriate.

NBI will encourage and support mainstreaming into the relevant national water resources management and sector planning frameworks and water-related national

management and development programs executed by line agencies.

Specifically, the role of the NBI organs and member states is:

**Nile Basin Council of Ministers (Nile-COM):**

The Nile-COM is the governing body and the supreme policy and decision-making body of the NBI and will approve the strategy document and any revisions of it.

**Nile-TAC:**

The Nile-TAC participates actively in the formulation process of policies, strategies and guidelines and ensures that relevant national stakeholders are adequately consulted during formulation processes. Nile-TAC is responsible for undertaking a technical review of any policy, strategy or guidelines developed for the NBI, and advises Nile-COM on their suitability



for application. Nile-TAC will oversee and provide strategic guidance and advice on the implementation of the strategy.

**NBI / Nile Wetlands Regional Expert Working Group:** The Expert Group is nominated through Nile-TAC and brings together key national policy makers and experts from NBI member states line agencies that hold responsibility for wetlands management and policy. The expert group is the key consultative format in the formulation of related policies, strategies and guidelines and their review and evaluation. The Expert Group reports to the Nile TAC. Regional and international subject-matter experts will be part of the Expert Group transitorily when their input is needed.

**Nile Secretariat (Nile-SEC):** Nile-SEC is the full-time professional body that assist Nile-COM and Nile-TAC in their respective functions and coordinates basin-wide activities of the NBI. Nile Sec will be responsible for mainstreaming the strategy into NBI work program / strategic action plan. Nile-SEC will also coordinate the development of policies, strategies and guidelines required for the sustainable management of transboundary wetlands and will be responsible to develop the central service functions as outlined in the strategy.

**Subsidiary Action Programs (SAPs):** The SAPs of the Eastern Nile (ENSAP) and Nile Equatorial Lakes

« NBI will encourage and support mainstreaming into the relevant national water resources management and sector planning frameworks and water-related national management and development programs executed by line agencies. »

region (NELSAP) will contribute to the formulation of transboundary wetlands specific strategies, programmes and projects. They will be responsible for mainstreaming the strategy into their work program/ strategic action plan and ensuring the application of the Nile Basin Transboundary Wetlands Strategy in the preparation and implementation of NBI investment program and projects.

**Nation Line Agencies:** The national line agencies, together with relevant ministries, and represented and guided through the Nile-TAC and the NBI/Nile Basin Wetlands Regional Expert Working Group will help identify key national stakeholders to participate in the formulation and review of wetlands policies, strategies and guidelines. They will be responsible for mainstreaming strategic actions of the strategy into their work programs as appropriate. Furthermore, they will be in charge of coordinating of the participation of national agencies and other stakeholders in wetlands management activities of both SAPs and national projects.

## 9. DATE OF EFFECTIVENESS AND REVIEW



This NBI Wetlands Strategy becomes effective upon approval by Nile-COM. It has an indicative timeframe of 10 years and shall remain effective until further note. The strategy shall be reviewed and updated periodically as required; the revision can be initiated by the Nile-Sec in consultation with the Nile-TAC and the NBI Wetlands Regional Expert Working Group.



## 10. ANNEXES

### Annex 1: Ecosystem functions, services and benefits of transboundary wetlands

Key wetland ecosystem services in the Nile Basin		
Provisioning	Food	Wild fish, insects, wild game, fruits, vegetables and grains, as well as provision of fodder and pasture for livestock production and farmland for crop cultivation, supporting both subsistence-level and commercial-industrial production and consumption
	Fresh water	Storage and retention of water for domestic, industrial, agricultural and hydropower uses.
	Fuel and fibre	Timber, polewood, fuelwood, thatch and handicraft materials, supporting both subsistence-level and commercial-industrial production and consumption
	Medicinal products	Wild plant and animal products used as traditional remedies as well as providing the raw materials for the pharmaceutical industry
	Genetic materials	Materials used for medical, pharmaceutical, agricultural, nutritional, cosmetic and other applications; resistance to plant pathogens; ornamental species; etc.
Regulating	Waterflow regulation	Stabilisation of flows, groundwater recharge/discharge
	Water purification and waste treatment	Retention, recovery, and removal of excess nutrients and other pollutants
	Erosion regulation	Control of runoff, soil stabilisation, sediment and silt trapping
	Maintenance of soil fertility	Retention of soil moisture, maintenance of soil structure and quality, supply of soil nutrients required to support plant growth and agriculture.
	Natural hazard regulation	Drought mitigation, flood control, storm protection, landslide control, etc.
	Climate regulation	Source of and sink for greenhouse gases, moderation of local and regional temperatures, precipitation, and other climatic processes
	Pollination	Habitat for bird, bat, mammal and insect pollinators important for cultivated crops and wild species
	Biological control	Control of pests and diseases through the activities of predators and parasites such as birds, bats, flies, wasps, frogs and fungi
Supporting	Soil formation	Sediment retention and accumulation of organic matter
	Nutrient cycling	Storage, recycling, processing, and acquisition of nutrients
	Habitat for species	Space, materials and conditions that flora and fauna need to survive or are essential for key stages of their lifecycle (breeding, feeding, migratory, etc.), including rare, endangered and endemic species and those of special cultural or commercial importance
	Maintenance of genetic diversity	High numbers of plant and animal species, enhancing the robustness of the system as well as providing the basis for well-adapted cultivars and livestock, and a gene pool for further local-level and industrial product development.
Cultural	Cultural, spiritual and inspirational	Source of traditional knowledge, sacred sites, customary practices and knowhow; spiritual and religious significance and inspiration; national or international heritage and iconic status
	Recreational	Opportunities for leisure and tourism
	Educational and research	Space, species and natural processes to support and inform formal and informal education and training, generate knowledge and learning
	Aesthetic	Visual and artistic beauty and appreciation of wetland landscapes, species and cultural elements

Source: Nile Basin Initiative TEEB Scoping Report (2018).

## Annex 2: Status of cross-border wetland management in the Nile Basin as developed under regional cooperative projects (\*)

Inventory Number	Wetland Name	Cross Border wetland landscape	Significant transboundary hydrological interlinkages	Monograph	Economic valuation	Hydrological Assessment	Management Plan	Environmental flows assessment	(TB) Management Structure	Initial small-scale measures	Wetland Investment Plan	Investment proposal and resource mobilisation	Investment Project
	Cross Border / Transboundary Wetlands												
4	Sio Siteko	Ky - Ug	DSS										
9,12,14	Lake Cohoha, Lake Rweru and Aknyaru Marshes	Br - Rw	DSS										
23	Kagera Swamps	Rw - Tz	DSS										
25	Sango Bay - Minziro Forest	Ug - Tz	DSS										
35	Rwenzori Mountains Landscape	Ug - DRC											
37	Lake Edward	Ug - DRC	DSS										
38,39	Semliki Valley Wetlands, Lake Albert	Ug - DRC	DSS										
53	White Nile Floodplain	Et - Ssud											
61	Lake Nubia / Nasser	Eg - Sud	DSS										
	Other wetlands of significant transboundary hydrological interlinkages												
5	Mara	Tz	DSS										
52	Machar Marshes	Ssud	DSS										
34	Kyoga Kwania Swamp Complex	Ug	DSS										
41	Sudd Wetlands	Ssud	DSS										
51	Barok Akobo Sobat Wetlands	Et	DSS										
45	Bahr el Gazahl Floodplain	Ssud	DSS										
21,22	Nyabarongo Wetlands and Lake Mugesera	Rw	DSS										
56	Lake Tana	Et	DSS										
3,2	Lake Victoria (Nzoia Wetlands, Yala Wetlands)	Ky	DSS										
30,29, 28,27	Lake Victoria (Lutembe, Mabamba, Nabujuzi)	Ug	DSS				(28 only)				(28 only)		
55	Dinder Floodplain	Sud	DSS										

\* this includes processes conducted under NBI and LVBC. Not all national processes are known - so the list is likely to be incomplete.

### Annex 3: Summary of the wetlands of transboundary importance as per the wetlands inventory for the Nile Basin

Nr	Sub-basin	Name	Wetland Group	Country (incl. Cross Border if shared by two countries)	River / Lake	Wetlands of transboundary importance with major hydrological interlinkages *	Ramsar Site
1	LV	Nyando	SNYN	Kenya	Nyando River		
2	LV	Yala Swamp	SNYN	Kenya	Yala River		
3	LV	Nzoia River	SNYN	Kenya	Nzoia River		
4	LV	Sio Siteko	SNYN	Kenya, Uganda	Sio/ Siteko		
5	LV	Mara Wetland	MW	Tanzania	Lake Victoria	NB-DSS	
6	LV	Ruvubu National Park	KW	Burundi	Ruvubu River		
7	LV	Ruvyironza River	KW	Burundi	Lake Victoria		
8	LV	Paysage Aquatique Protégé du Nord	KW	Burundi	Akanyaru		
9	LV	Lake Cohoha South	KW	Burundi, Rwanda	Akanyaru	NB-DSS	
10	LV	Lake Rwihinda	KW	Burundi	Nyabarongo/ Kagera River		
11	LV	Lake Kanzigiri	KW	Burundi	Lake Rweru		
12	LV	Lake Rweru	KW	Burundi, Rwanda	Akanyaru River	NB-DSS	
13	LV	Akanyaru Swamps	KW	Burundi	Akanyaru		
14	LV	Akanyaru River Swamps	KW	Burundi, Rwanda	Akanyaru	NB-DSS	
15	LV	Lake Cohoha North	KW	Rwanda	Akanyaru		
16	LV	Rugezi Marsh	KW	Rwanda	Rwangabavu		
17	LV	Lake Burera	KW	Rwanda	Lake Ruhondo		YES
18	LV	Lake Ruhondo	KW	Rwanda	Mukungwa		

Nr	Sub-basin	Name	Wetland Group	Country (incl. Cross Border if shared by two countries)	River / Lake	Wetlands of transboundary importance with major hydrological interlinkages *	Ramsar Site
19	LV	Kamiranzovu Swamp	KW	Rwanda	Lukarara /Kamiranzovu		
20	LV	Lake Muhazi	KW	Rwanda	Nyabarongo		
21	LV	Nyabarongo Wetlands	KW	Rwanda	Nyabarongo	NB-DSS	
22	LV	Lake Mugesera	KW	Rwanda	Nyabarongo	NB-DSS	
23	LV	Kagera Swamps	KW	Rwanda, Tanzania	Kagera River	NB-DSS	
24	LV	Lake Mbuuro Nakivali System	KW	Uganda	Ruizi River, Kibali River		YES
25	LV	Sango Bay-Musambwa Islands -Kagera Wetland System	KW	Uganda, Tanzania	Katonga, Bukola, Lake Victoria	NB-DSS	YES
26	LV	Lake Wamala	LWV	Uganda	Akanyaru		
27	LV	Nabajuzi Wetland	LWV	Uganda	Nabajuzi		YES
28	LV	Lake Nabugabo	LWV	Uganda	Lake Victoria		YES
29	LV	Mabamba Bay	LWV	Uganda	Lake Victoria		YES
30	LV	Lutembe Bay	LWV	Uganda	Lake Victoria		YES
31	LV	Winam Gulf	LWV	Kenya	Lake Victoria		
32	VN	Lake Bisina	LWV	Uganda	Lake Kyoga		YES
33	VN	Lake Opeta	LWV	Uganda	Lake Kyoga		YES
34	VN	Kyoga Kwania Swamp Complex	LKW	Uganda	Lake Kyoga, Victoria Nile	NB-DSS	
35	LA	Rwenzori Mountains Ramsar Site	SW	Uganda, DRC	George, Edward, Albert, Semliki		YES
36	LA	Lake George	SW	Uganda	Lake Edward		YES



Nr	Sub-basin	Name	Wetland Group	Country (incl. Cross Border if shared by two countries)	River / Lake	Wetlands of transboundary importance with major hydrological interlinkages *	Ramsar Site
37	LA	Lake Edward	SW	Uganda, DRC	Semliki		
38	LA	Semliki Valley Wetlands	SW	Uganda, DRC	Semliki		
39	LA	Lake Albert Delta	SW	Uganda	Semliki River, VN, AN		YES
40	LA	Lake Bunyonyi	SW	Uganda	Ishasha, Semliki		
41	BJ	Sudd	Sudd	South Sudan	Bahr el Jebel	NB-DSS	YES
42	BJ	Lake Yiroi	Lakes in BJ	South Sudan	Yei River		
43	BJ	Lake Anyi	Lakes in BJ	South Sudan	Yei River		
44	BJ	Lake Nyiropo	Lakes in BJ	South Sudan	Lau River		
45	BG	Bahr el Ghazal Floodplain	BeG	South Sudan	B. el Ghazal	NB-DSS	
46	BG	Lake Ambadi	BeG	South Sudan	B. el Ghazal		
47	BA	Badigeru Swamp	BASW	South Sudan	Kinyeti River		
48	BA	Kenamuke/ Kobowen Swamp	BASW	South Sudan	Kangen River, Sobat River		
49	BA	Lotilla River Swamps	BASW	South Sudan	Lotilla River		
50	BA	Veveno/Adier/Liliebook Swamps	BASW	South Sudan	Lotilla River		
51	BA	Baro-Akobo-Sobat Wetlands	BASW	Ethiopia	Alwero		
52	BA	Machar Marshes	BASW	South Sudan	Sobat River	NB-DSS	
53	WN	White Nile Floodplain	Not assigned	Ethiopia, South Sudan	White Nile		
54	WN	Gebel Auliya	Not assigned	Sudan	White Nile		

Nr	Sub-basin	Name	Wetland Group	Country (incl. Cross Border if shared by two countries)	River / Lake	Wetlands of transboundary importance with major hydrological interlinkages *	Ramsar Site
55	BN	Dinder Floodplain	DW	Sudan	Dinder River		YES
56	BN	Lake Tana	LTW	Ethiopia	Lake Tana		
57	BN	Fincha-Chomen	Not assigned	Ethiopia	Blue Nile		
58	BN	El Roseires	Not assigned	Sudan	Blue Nile		
59	BN	Sennar	Not assigned	Sudan	Blue Nile		
60	TA	Khashm el Girba	Not assigned	Sudan	Atbara River		
61	MN	Lake Nubia/Nasser	Lower Nile Valley	Sudan, Egypt	Nile		
62	MN	Wadi El Rayan Protected Area	Lower Nile Valley	Egypt	Nile		
63	MN	Lake Qarun	Lower Nile Valley	Egypt	Nile		
64	MN	The Nile Delta	ND	Egypt	Nile Delta		
65	MN	Lake Maryut	ND	Egypt	Nile Delta		
66	MN	Lake Idku	ND	Egypt	Nile Delta		
67	MN	Lake Burullus	ND	Egypt	Nile Delta		YES
68	MN	Lake Manzala	ND	Egypt	Nile Delta		

Wetland Groups: 1. ND = Nile Delta; 2. DW = Dinder wetlands; 3. LTW = Lake Tana wetlands; 4. BASW = Baro Akobo Sobat wetlands; 5. Sudd; 6. BeG = Bahr el Ghazal wetlands; 7. LKW = Lake Kyoga wetlands; 8. SW = Semiiki wetlands; 9. LVW = Lake Victoria wetlands; 10. KW = Kagera wetlands; 11. MW = Mara wetlands; 12. SNYN = Sio Nzoia Yala Nyando wetlands.

NB-DSS: For purposes of hydrological assessments used in basin planning - especially in applications of the Nile Basin DSS, NBI further identifies from the wetlands of transboundary importance those wetlands that have major effects on the hydrology. The list indicates the wetlands currently considered in the NB DSS.







## Annex 5: Membership of key international conventions of NBI member states in relation to wetlands

CBD: Convention on Biological Diversity

UNFCCC: United Nations Framework Convention on Climate Change

RAMSAR: Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat

SDG: Sustainable Development Goals

CMS: Convention on the Conservation of Migratory Species of Wild Animals

AEWA: Agreement on the Conservation of African-Eurasian Migratory Waterbirds

CONVENTIONS	RAMSAR	CBD	UNFCCC	SDG	CMS	AEWA
Burundi	X	X	X	X	X	X
DRC	X	X	X	X	X	
Egypt	X	X	X	X	X	X
Eritrea		X	X	X	X	
Ethiopia		X	X	X	X	X
Kenya	X	X	X	X	X	X
Rwanda	X	X	X	X	X	X
South Sudan	X	X	X	X		
Sudan	X	X	X	X		X
Tanzania	X	X	X	X	X	X
Uganda	X	X	X	X	X	X





# ONE RIVER ONE PEOPLE ONE VISION



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#### **NBI MEMBER STATES**



Burundi



DR Congo



Egypt



Ethiopia



Kenya



Rwanda



South Sudan



The Sudan



Tanzania



Uganda



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