



# NILE BASIN INITIATIVE

## CLIMATE CHANGE STRATEGY

June 2013



Burundi



DR Congo



Egypt



Ethiopia



Kenya



Rwanda



S. Sudan



Sudan



Tanzania



Uganda



# NBI Climate Change Strategy

## Preamble

This Climate Change Strategy is premised on the following facts and 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 economic growth and development put growing demands on the river system and the basin's resources. Driven by population and economic growth across many riparian countries, the Nile Basin resources are currently bearing growing pressure. 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 will 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 natural environmental assets providing crucial ecosystem services that are supporting livelihoods and the socio-economic development in the basin. Their role in mitigating climate change and supporting climate resilience 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 climate change 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 sets out the NBI's approach for a joint transboundary river basin level response to support climate compatible water resource development in Africa's largest shared river basin.

## Context

### 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 seeks to develop the River Nile in a cooperative manner, managing jointly its transboundary water resources and sharing the socio-economic benefits that arise from their development. 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

The NBI Climate Change Strategy was developed as stipulated in the Nile Basin Sustainability Framework under its Key Strategic Direction 4: "Climate Change Adaptation & Mitigation". The Climate Change Strategy forms an integral part of the landscape of NBI policies, strategies and guidelines and complements national efforts of NBI member countries. It focuses on transboundary water resources management as a strategic element of climate adaptation and low carbon development in the region. It integrates key strategic plans and activities of the NBI subprogrammes and provides a broader framework for action. The NBI is the addressee of this Strategy.

### Process of policy development

The process of developing the Climate Change Strategy involved comprehensive consultations and workshops at the regional and national level since 2009, involving the members of the Nile-TAC and national thematic experts, as well as a task-team of technical experts from the Nile-SEC, NELSAP and ENSAP, among others. It has been informed by sub-basin level studies commissioned by the NBI to inform about climate change impacts on water resources and the socio-economic development of the region, vulnerabilities to climate change, appropriate coping measures, and feasible development options. The comprehensive regional assessment carried out by ENTRO, the multi-sector investments opportunities assessment (MSIOA) carried out by NELSAP-CU, specific basin monographs prepared by NELSAP-CU and the basin-wide climate change assessment carried out by the WRPM Project have been of particular relevance. Furthermore, the State of the River Nile Basin Report 2012, which consolidates scientific findings on climate change impact in the Nile region, has informed the development of this strategy. International experts supported the process, bringing in state of the art analysis and knowledge on the topic. The finalization of the strategy has been complemented by a screening of relevant legal and policy documents of riparian countries in order to ensure complementarity and consistency of provisions. Furthermore, key international conventions and agreements signed by riparian countries, as well as international best practice were taken into consideration to assure compatibility.

## Foreword



Dear Valued Reader,

I'm pleased to welcome you to the Nile Basin Initiative Climate Change Strategy (CCS). This Strategy contributes substantially to strengthening the Nile basin-wide resilience and adaptability to climate change and also firmly ensures climate compatible water resource management and development.

The Nile Basin is particularly hydrologically sensitive given the uneven distribution and availability of water resources within the Basin. Both water supply and demand are unevenly distributed. Several large-scale developments are putting pressure on already limited water resources. The most significant of these is climate change, which is increasing the already high climatic diversity and variability across both seasons and years. Extensive wetlands and large reservoirs already result in large losses of water from evapotranspiration, and increased temperatures predicted for the region by global climate models will accelerate this. In addition, the move away from traditional livelihood systems which proved resilient against climatic and water variability leads to a loss of adaptive capacities.

Climate change impacts have the potential to undermine and even undo progress made in reducing poverty, attaining Millennium Development Goals (MDGs), and in improving the socio-economic wellbeing of broad parts of the population. Climate change also acts as a multiplier, exacerbating impacts of existing challenges.

Climate change is likely to intensify the uneven distribution of water resources within the region, presenting a major challenge for water resources management. Hotter and longer dry periods will increase the risk of drought, raise demand for irrigation water and the vulnerability of rain-fed agriculture, particularly in already existing arid regions. Higher frequency and intensity of rainstorms increases the risk of flooding and storm damage, and rising sea levels threaten to submerge large areas of fertile cropland. Furthermore, higher water temperatures in the Equatorial Lakes are expected to strengthen thermal stratification, increase algal productivity and reduce oxygen dissolution.

This Climate Change Strategy identifies gaps and future threats and consequently defines requirements and constituents of climate change resilience basin-wide; sets out proper strategic objectives and outputs, introduces effective mitigation and adaptation measures, and describes appropriate institutional set-ups.

It is my hope that this Strategy will enable the Nile Basin to adequately cope with climate change effects, reinforce basin resistance and adaptability, while simultaneously maintaining the desired development targets.

I commend the Nile Secretariat for developing this Strategy, and thank the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ-Germany) for supporting the Strategy development process.

I urge all Nile Basin countries to uphold, stock-take from, and make insightful use of this Climate Change Strategy.

Sincerely,



Hon. Ms. Jemma Nunu Kumba  
Chairperson, Nile Council of Ministers (Nile COM) &  
Minister of Electricity, Water and Irrigation  
Republic of South Sudan

# NBI Climate Change Strategy

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## Acronyms

<b>AfDB</b>	African Development Bank	KSD	Key Strategic Direction
<b>AUC</b>	African Union Commission	MDG	Millennium Development Goals
<b>CC</b>	Climate Change	NAPs	National Adaptation Plans
<b>CDKN</b>	Climate and Development Knowledge Network	NAPAs	National Adaptation Plan of Action
<b>CDM</b>	Clean Development Mechanism	NBI	Nile Basin Initiative
<b>CIF</b>	Climate Investment Funds	NBSF	Nile Basin Sustainability Framework
<b>CO2</b>	Carbon Dioxide	NELSAP	Nile Equatorial Lakes Subsidiary Action Program
<b>DRC</b>	Democratic Republic of Congo	NELSAP-CU	Nile Equatorial Lakes Subsidiary Action Program Coordination Unit
<b>DSS</b>	Decision Support System	Nile-COM	Nile Basin Council of Ministers of Water
<b>EAC</b>	East African Community	Nile-SEC	Nile Basin Initiative Secretariat
<b>EIA</b>	Environmental Impact Assessment	Nile-TAC	Nile Technical Advisory Committee
<b>EMG</b>	Environmental Management Guidelines	PIU	Project Implementation Unit
<b>ENSAP</b>	Eastern Nile Subsidiary Action Program	PMU	Project Management Unit
<b>ENTRO</b>	Eastern Nile Technical Regional Office	RKH	Regional Knowledge Hub
<b>ESIA</b>	Environmental and Social Impact Assessment	SAP	Subsidiary Action Program
<b>ESP</b>	Environmental and Social Policy (NBI)	SSA	Sub-Saharan Africa
<b>GDP</b>	Gross Domestic Product	SSEA	Strategic Social and Environmental Assessment
<b>GHG</b>	Greenhouse Gas	UNECA	United Nations Economic Commission for Africa
<b>IPCC</b>	Intergovernmental Panel on Climate Change	UNEP	United Nations Environmental Programme
<b>IWRM</b>	Integrated Water Resources Management	UNFCCC	United Nations Framework Convention on Climate Change

# NBI Climate Change Strategy

## 1. Introduction

### 1.1 Impacts of climate change in the Nile Basin

Climate change is real and is happening now with severe and diverse impacts. The African continent, while contributing least to greenhouse gas (GHG) emissions, is most vulnerable and will be hit hardest by the impacts of climate change. Climate change impacts have the potential to undermine development and even undo progress made in reducing poverty, attaining MDGs, and improving the socio-economic well-being of broad parts of the population. Rising temperatures and changed rainfall patterns are expected to increase climate variability and both the number and intensity of extreme weather events such as heat waves, droughts, storms, and floods, resulting in water contamination, vector-borne diseases and food shortages. Between 5-10% of the continent's GDP may be needed to cope with these impacts of climate change.

A lack of long-term hydro-meteorological data in the Nile Basin, coupled with the region's strong degree of natural variability in precipitation and sensitivity to climate effects makes the precise projection of climate change impacts difficult.

Despite these uncertainties and challenges, the following climate trends in the Nile Basin seem likely:

- Higher evaporation and consequent increased losses from reservoirs.
- Higher evapotranspiration rates and rising crop water requirements leading to an increase in demand for irrigation water.
- Hotter and longer dry periods which will increase drought events, especially in traditionally dry regions.
- Higher frequency and intensity of severe rainstorms that will lead to increased flood risk and serious storm damage.
- Higher water temperatures in the Equatorial Lakes, which strengthen thermal stratification, increase algal productivity, accelerate microbial mineralization, and reduce oxygen dissolution, among other effects.
- Expansion of the range of vector-borne diseases such as malaria to higher altitudes due to warmer temperatures.
- Sea-level rise that could threaten the very productive Nile Delta and the cities along the Indian Ocean coast.

Through direct effects on temperature and water availability, climate change will have a number of additional cascading effects on agriculture, fisheries, energy, health, disasters, and freshwater ecosystems. Tangible socio-economic effects in the Nile Basin include the following:

- Sea-level rise will seriously threaten the delta. The problem of flooding is compounded by land subsidence. It is estimated that a 1-metre sea-level rise could cause a loss of 4,500 square kilometers of cropland and displace some 6.1 million people in the Nile Delta.
- Warming of water and changes in water level pose a threat to fisheries, resulting in widespread negative impacts on economies and food security.
- The hydropower potential of the Nile is large, but it is also vulnerable to changes in river flows driven by climate change. The vast majority of existing infrastructure as well as projects under planning or construction have not been designed for climate resilience and could experience serious harm.
- Wetlands, which provide beneficial water filtration, are highly vulnerable to climate change, calling

into question the continued quality of water in the basin.

- Negative influences on agriculture and livestock are expected, with strong implications for food security and future economic growth. Degradation of livelihoods through climate change may accelerate and intensify cross-border and rural-urban migration.
- High rates of urbanization that are triggered by the above factors are placing increased pressure on already stressed urban and peri-urban ecosystem services, health systems and food security.

The above points highlight that climate change exacerbates impacts of existing challenges such as human-induced land-use changes, poverty, high population growth, and rising demand for natural resources. Further to this, most parts of the Nile region have a very low level of economically developed infrastructure. There is low water-storage capacity, few water-control systems, and the transport, energy, information, and communication systems still need further improvement.

Combined with the exposure and sensitivity of the basin countries to climate change, this contributes to the basin's vulnerability and low adaptive capacity.

### 1.2 Basin-wide cooperation as a strategic response to climate change in the Nile region

Water is a vital development component of nearly every sector in the Nile region, including urban services and industry, energy, land management, agriculture, fisheries, and environmental services. Lack of reliable water supply of adequate quality undermines public health, restricts industrial growth, limits energy production from hydropower, constrains agricultural productivity and food production, and is likely to significantly reduce and at times even eliminate important environmental services.

The high sensitivity of the Nile Basin to increased climate variability will significantly alter the availability of water resources. Joint action to build climate resilience in the basin and to support suitable low carbon efforts will be crucial to maintain the essential socio-economic and ecosystem functions of the Nile River.

#### 1.2.1 Climate adaptation

Climate change in Africa will manifest itself primarily through changes in average temperature and precipitation, which are important drivers of the water cycle and hence the seasonal occurrence and volume of water in soils, lakes, rivers and wetlands. The Nile Basin is particularly sensitive to those changes as it is characterized by a relatively small discharge compared to the size of the basin. This presents a huge challenge to water resource development planners and managers who will have to deal with more uncertainty and high levels of unpredictability in the future. In addition to the challenge of supplying enough water at the right time for all economic sectors and the environment, most countries will have to cope with the destructive and sometimes cumulative impacts of extreme weather events on water-ecosystems brought about by climate change.

The expected impacts of climate change on the basin highlight the need for the development of targeted adaptation strategies on the national and regional level. Adaptation strategies enhance and implement measures to reduce, moderate and take advantage of climate impacts. Such strategies may aim to high levels of economic and livelihood diversity; promote skills, learning and innovation; reduce dependence on ecosystem services; reduce inequality; and ensure decision-making processes at multiple levels are well-connected and involve participation from all stakeholder groups. Some practical examples include investing in disaster risk reduction, creating measures to protect food security when droughts increase food prices or developing additional water storage capacity to deal with changing rainfall patterns.

A basin-wide assessment of climate risks, impacts and vulnerabilities can lay the ground and inform actions to be undertaken to increase resilience in the region. This level of coordinated planning will enhance resilience to climate change across the riparian countries and the different sub-basins. Effective coordination and planning will help to maintain the basin's resource base and biodiversity significantly (for example of hydro-climatological regimes and food production systems).

### 1.2.2 Low carbon development

It is not acceptable for carbon mitigation efforts to hinder economic growth in Nile riparian countries as this will be key for poverty reduction and socio-economic development. Moreover, with only 25 percent of the population having access to electricity, ensuring that energy access and consumption grows rapidly in Africa is a key development objective.

However, strategies for low carbon development can evolve as a clear opportunity for the region. Two Basin countries (Rwanda and Ethiopia) have seen their Cabinets approve strategies on low carbon development, and others are in progress. They recognize the benefits of promoting the transition towards a low carbon economy.

Opportunities for low carbon development in the region have been identified for the following areas, among others:

- increased energy access through hydropower, including small-scale installations
- decentralized energy solutions, such as solar and wind
- the sustainable use and protection of natural infrastructure, such as forests and wetlands in the basin as carbon sinks

Hydropower is a low carbon technology that offers major socio-economic opportunities for the region, provided that sustainability criteria are met. In addition, the pressure on the electricity sector and overburdened grid infrastructure can be reduced through off-grid renewable energy options that, through their decentralized design, are particularly suitable for semi-urban and rural areas. Regional cooperation in this sector can enhance energy supply and reduce overall costs while keeping emissions low. As large-scale hydropower is likely to be impacted negatively by climate change, switching to off-grid options in some areas might increase climate resilience for the energy sector.

With land and forest degradation contributing significantly to CO<sub>2</sub> emissions in the region, the basin countries could also help mitigate climate change through the protection and sustainable management of natural infrastructure such as wetlands and forests. These ecosystems perform crucial basin-wide socio-economic 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 the areas in question, but also produce positive effects for communities in the basin that live well outside them. The maintenance and sustainable management of this natural infrastructure could contribute considerably to carbon mitigation and at the same time enhance adaptation capacity as well as economic and social development in the region.

To scale-up these low carbon opportunities, additional public and private finance will be required. Bilateral and multilateral climate funds for developing countries, such as the Clean Technology Fund under the Climate Investment Funds (CIFs) umbrella, have increased considerably over the last few years. Furthermore, the UNFCCC process is expected to produce an agreement on new, additional and predictable funding streams to finance the additional costs of climate resilience and low-carbon growth in Africa and other developing countries.

### 1.3 The NBI's approach to climate change

The NBI recognizes the need and urgency for mounting and coordinating basin-wide efforts to respond effectively to the impacts of climate change. National responses to climate change are essential but need to be complemented by transboundary mechanisms as both, the water resources impacts (droughts and floods) and the population responses within the basin (such as migration) are transboundary in nature. Major watershed management and infrastructure measures to mitigate the impacts of droughts and flooding also have transboundary impacts and require the establishment of mechanisms for basin-wide planning, joint action and cooperation.

A multi-purpose and integrated approach – which follows directly from the unitary character of water resources – has the clear potential not only to help countries build economic resilience to climate change, but also to diversify their economies and develop and deepen new economic activities made possible by a larger and more stable supply of electricity at the same time as incorporating off-grid renewable energy options.

Toward this end, the NBI provides a unique platform for joint action and transboundary perspective to build upon and complement national, regional and international activities that aim to strengthen climate resilience and low carbon development in the basin. Through its transboundary mandate the NBI holds a comparative advantage to facilitate, support and implement bilateral, multilateral and basin-wide cooperative approaches.

It is therefore important that NBI activities are informed by and compatible with key relevant regional and international initiatives and agreements that riparian states have subscribed to, such as key agreements under the United Nations Framework Convention on Climate Change (UNFCCC), the EAC Climate Change Policy, the EAC Master Plan and agreed Food Security Action Plan, the African Convention on the Conservation of Nature and Natural Resources, the Convention on Biological Diversity, and the Ramsar Convention on Wetlands of International Importance, as well as initiatives under the African Ministers' Council on Water (AMCOW) .

This strategy sets out the NBI's goal and objectives, strategic outcomes and priority outputs for a joint transboundary river basin level response to support climate compatible water resource development in Africa's largest shared river basin. It hereby emphasizes measures that minimize the harm caused by climate impacts while maximizing the many human development opportunities presented by a low carbon, more resilient future.

## 2. Challenges

Existing studies such as the NBI-commissioned State of the Basin Report 2012 demonstrate that climate change impacts will place additional stress on the Nile Basin. For riparian states the pressure to develop cooperation-based responses to strengthen basin-wide resilience and foster low carbon development options will increase. This adds to demands on the NBI to effectively plan, coordinate and foster cooperation. Key challenges that will need to be overcome to achieve successful outcomes are listed below:

### 2.1 Insufficient data, information and knowledge

Uncertainties about the pace and extent of climate change and the impacts on different sub-regions and sectors in the basin make policy decisions difficult, and magnify the need for the region to improve its knowledge and analytical base. NBI programs and projects have to be developed even when future risks, impacts and vulnerability of climate change remain uncertain.

Whilst the national level information and analysis on climate change risks, vulnerability and impacts has improved substantially over the past decade, well-synthesized information and an established knowledge base, at a basin, sub basin or even national level, is often absent. This is particularly critical to decision-making processes, providing policy guidance and considering transboundary responses to climate change.

### 2.2 Multi-sectoral complexities

Water demands in the Nile Basin are increasing rapidly, for example for renewable energy production, in particular hydropower and biofuels, agriculture and municipal demands due to urbanization and population growth. Given the already intensive utilization of the water resources for existing development plans, e.g. for agricultural intensification and hydropower production, which in some parts of the basin are already exceeding the available water resources, there is a need for basin-wide coordination and planning. Particularly, at the nexus of water, agriculture and energy the emerging demands need to be integrated with climate adaptation and mitigation planning in order to avoid mal-adaptation.

Limitations on water availability in all sectors require a shift towards increased resource use efficiency, demand management and more sustainable consumption patterns. Better integrated policy- and decision-making that account for external costs across sectors will have to complement conventional approaches aimed at only improving sectoral resource productivity.

### 2.3 Limited institutional arrangements and capacities

Nile countries on average have a low level of developed infrastructure. There is low water-storage capacity, few water-control systems, and the transport, energy, information, and communication systems are not so advanced. These conditions combined with the natural and socio-economic factors mentioned above constrain the adaptive capacity of the Nile countries.

Recent needs assessments in the framework of the process have shown that institutional weaknesses and a lack of technical capacity on the national level are reasons for ineffective climate-related policy formulation and implementation. This also results in weak capacities to coordinate policies and measures at the regional and transboundary level.

Clearer definition of institutional roles and responsibilities within policy was raised as an important issue linked to the need to strengthen accountability and enforcement. A high frequency of overlapping and conflicting roles and responsibilities between institutions exist, linked to poor inter-sectoral

collaboration and control. Some countries highlight a lack of overall cooperation within the sector between different institutional (frequently ministerial or departmental) jurisdictions. Both protective institutional responses and lack of effective coordinating mechanisms featured as reasons. Also, decentralization tendencies have left many countries with ill-defined roles and responsibilities between levels resulting in implementation inertia and even failure.

The development of technical capacity is key in both specific technical and broader development areas including rural development, community participation and effective dialogue with partners.

#### 2.4 Lack of coordination between existing regional and national climate change response measures

There are diverse initiatives on climate change at the regional and national level (see box below) which are often weakly connected and with little informational flow between them.

It will be crucial to build platforms and cooperation and coordination mechanisms to make sure that synergies in the programs and initiatives are adequately used and activities are coordinated to maximize the related outcomes and benefits.

#### Examples of key initiatives to partner and coordinate with

##### UNFCCC related activities and processes:

- The Nairobi Work Program and its water segment
  - The ongoing development of the Africa Common Position (ACP) in the UNFCCC climate negotiations
  - The Country-driven National Adaptation Plan of Action (NAPA) and National Adaptation Plans (NAPs) processes
  - A number of Nile countries are preparing Nationally Appropriate Mitigation Actions (NAMAs)
- Others:
- The AFRICA Water Climate and Development Program implemented by the African Ministerial Council for Water (AMCOW) and supported by the Global Water Partnership (GWP) Africa
  - The Climate for Development in Africa Programme (ClimDev-Africa), a joint initiative of the United Nations Economic Commission for Africa (UNECA), the African Union Commission (AUC), and the African Development Bank (AfDB) and its African Climate Policy Centre (ACPC)
  - The Intergovernmental Authority on Development's Climate Prediction and Application Centre (ICPAC)
  - The Lake Victoria Basin Commission (LVBC)'s Environmental Management Programme
  - UNEP's Programme "Adapting to Climate Change induced water stress in the Nile River Basin"
  - The Africa EU Climate Partnership
  - The World Bank administered Climate Investment Funds (CIFs)

**2.5 Opportunities to access finance for climate compatible development in the basin have not been sufficiently realized**

**There is a clear need for additional financing to build capacity, mainstream climate change considerations into development planning, and climate-proof existing and future investments in the basin. To access international and national climate funds and increase additional private contributions, however, capacities to tap these opportunities need to be enhanced and investment conditions in target countries need to be improved.**

### 3. Strategy goal and objectives

#### 3.1 Overall goal

In view of the pressing threats of climate change in the Nile Basin, the overall goal of this strategy is to strengthen basin-wide resilience to climate change and ensure climate compatible water resource management and development.

#### 3.2 Strategic objectives

There are five strategic objectives that govern NBI's climate change strategy. These are based on the NBI's recognized and mandated role as well as the climate specific guiding principles:

**Objective 1:** Strengthen the knowledge base to enhance common understanding of climate change risks and its impacts on water resources, ecosystems and the socio-economic system of the Nile Basin.

**Objective 2:** Strengthen long-term capacities for addressing climate risks and uncertainty in the Nile Basin at national and transboundary levels.

**Objective 3:** Support climate resilient planning and implementation addressing climate risks and uncertainty in NBI's programs.

**Objective 4:** Promote scalable low carbon development through enhanced transboundary cooperation in areas such as protection of wetlands as well as clean energy use and development.

**Objective 5:** Strengthen basin-wide climate finance access and the capacity for development of feasible projects in the Nile Basin.

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

## 4. Guiding principles

This strategy rests on four cornerstone principles for climate change management. The NBI will strive to adhere to them in the course of its activities.

### 4.1 Integrated approach to disaster risk reduction and adaptation

Adapting to climate change requires preparing for long-term changes. From a development perspective, however, most impacts of climate change, especially in the short to medium term, will materialize through climate variability and extreme events. Because extreme climate events are already occurring on a regular basis, disaster risk management provides an immediate entry point for most development planning and investment decisions. It would also yield positive economic and social returns in the short run. Strengthening disaster risk reduction capacity builds resilience whilst creating a focus on acclimation, or the gradual onset of climate change. Disaster risk reduction and adaptation need to be managed as one integrated agenda.

### 4.2 Adaptation and risk reduction for socio-economic development

Climate-change adaptation and risk reduction are fundamentally about sound socio-economic development. Many of the 'no-regret' measures are essential elements of strategic actions to achieve sustainable development. Therefore, climate-change adaptation interventions need not be viewed as a stand-alone set of measures but as an integrated part of development programs and policy initiatives.

### 4.3 Low carbon efforts for growth and development

Given that African countries contribute little to GHG emissions and that two-thirds of the continent's CO<sub>2</sub> emissions originate with land-use changes, the continent should continue on a growth path through a mix of clean energy technologies, along with sustainable land and water management.

### 4.4 Scaling-up financing

Scaling-up financing is essential for the adaptation and resilience-building in the Nile Basin. The UNFCCC process is expected to produce an agreement on additional and predictable funding to finance additional costs of climate resilience and low-carbon growth in developing countries. These funding streams will be augmented by new climate investment funding, carbon finance (for example, through the CDM and other crediting mechanisms), other emerging specialized instruments, and additional financing from the private sector. In addition, NBI programs, as feasible, shall leverage national resources (such as climate funds) to address climate change. The NBI and Nile Basin riparian states should make use of these new funding opportunities to implement key measures described in this strategy. The NBI should ensure that the basin is positioned to access the existing and emerging climate funds for transboundary climate response options, an issue under consideration in the Green Climate Fund.

## NBI's overarching principles

In addition to these four climate specific principles, 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).

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
9. Gender equity

## 5. Outcomes

The overarching goal of this strategy will result in five outcomes contributing to the vision of the Nile Basin countries.

### Outcome 1: Information on climate risks, impacts and vulnerability in the Nile Basin is synthesized, accessible and used by decision makers

The design and implementation of cooperative climate change responses will be based on the best available and synthesized information on climate risks, impacts and vulnerability in the Nile Basin. Synthesized, quality information will be developed by the NBI, building on available national level information and will be made accessible to decision makers through a structured communication plan and process.

### Outcome 2: Awareness for needs and benefits of basin-wide activities to address risks, impacts and vulnerability of climate change has improved

Awareness of the needs and benefits of responding to climate change has strengthened significantly over the past decade. However, the transboundary nature of climate change is not widely acknowledged or understood. The NBI, as the transboundary entity responsible for promoting sustainable management and development of all shared water resources in the Nile, will promote awareness of the needs and benefits for cooperative action in responding to climate change by raising awareness at appropriate levels and amongst all relevant stakeholders.

### Outcome 3: Climate change is embedded in relevant NBI strategies and programs and capacities are enhanced to address climate risks at transboundary and national levels

Relevant NBI policies, strategies and guidelines will consider the key climate risks, impacts and vulnerabilities facing the Nile Basin and ensure that the strategic objectives, outcomes and actions contained in policies, strategies and guidelines reflect the challenges posed by climate change. NBI will strengthen its own as well as national capacities to consider the transboundary environmental and social implications of their climate change and water resource management and development responses.

### Outcome 4: NBI activities complement climate change programs of national and regional institutions

The NBI is the transboundary institution promoting sustainable and responsible water resource management and development of shared water resources in the Nile. Its complementary role to national and regional institutions and their initiatives and activities ensures it fully reflects national and regional efforts and adds value to these by ensuring that the transboundary implications are understood and the benefits of joint planning and implementation are maximized.

### Outcome 5: Basin-wide adaptive management in the Nile Basin is coordinated and win-win opportunities for low carbon development are realized

Coordinated adaptive management across the basin and its sub-systems is needed to build resilience to climate change in the Nile Basin. The NBI, as the transboundary institution, will implement a mechanism for both coordinating and strengthening adaptive management and climate response measures in the Nile. In this framework it will also promote scalable low carbon solutions to improve energy access and climate resilience of energy infrastructure in the region.

## 6. Priority outputs

The outcomes in Section 5 shall be realized through the implementation of a defined set of priority outputs further elaborated in this section. Some of the outputs cut across multiple policy objectives and thus support the achievement of multiple outcomes. In this section each output is further elaborated and necessary key actions are described.

**Output 1: A NBI climate change service function is established**

The NBI Secretariat is supporting riparian states on demand in their efforts and actions on climate change adaptation and mitigation. This includes provision and sharing of information and technical support through a Regional Knowledge Hub (RKH), a shared data base on projects and initiatives in the region, an expert roster, the development of joint methodologies and analytical tools, and the targeted use of DSS components to improve predictions on climate change impacts.

**Output 2: Information on climate risks and vulnerabilities is synthesized at a transboundary scale**

Transboundary vulnerability assessments are crucial to develop targeted responses to common risks and threats caused by climate change. A basin-level analysis through the synthesis of existing national climate risk, impact and vulnerability assessments and additional analysis where needed will help to inform joint transboundary climate response actions in the Nile Basin. Furthermore, socio-economic analysis of the transboundary impacts of development decisions, given basin level climate risk and vulnerability, will help to identify cross-sectoral 'trade-offs' and opportunities for cooperation.

**Output 3: A process and mechanism for consistent dissemination of information is operational**

Synthesized information, gained from expert consultation and analysis, is published in accessible formats and key information is summarized in policy briefs for target audiences. Best practice examples on climate adaptation and climate resilient development are communicated to decision makers and the public through targeted reports and policy briefs. A communication strategy will further specify the targeted dissemination of information to relevant stakeholder groups.

**Output 4: NBI facilitates regular cross-sectoral, multi-stakeholder dialogues on climate risks, impacts and vulnerabilities and collaborative responses**

Regular basin and sub-basin level multi-stakeholder dialogues and trainings on climate resilient water management and development are convened, using the generated analysis to inform related policy development, foster cooperation and facilitate joint response actions in the Nile Basin.

**Output 5: Formal partnerships are established with strategic regional and global climate initiatives**

Strategic partnerships between the NBI and relevant regional climate initiatives as well as leading regional and international research institutes are established and formalized. These collaborations will enable NBI to complement effectively existing climate policy initiatives and build upon knowledge and expertise in academic institutions.

**Output 6: NBI implements a coordination mechanism to improve basin-wide adaptive management**

A multilateral working group including national decision makers, experts and other relevant stakeholders is established to discuss water-related adaptation measures with the purposes of (1) providing a space for moderated dialogue on cross-border adaptation efforts, (2) identifying scalable climate change response projects to attract basin-level investment and (3) identifying national level resources which can be leveraged to support implementation of the strategy. Adaptive institutions on the national level will be strengthened and transboundary institutional arrangements will be improved to enhance capacities

for adaptation planning and management.

**Output 7: Low carbon solutions that promote improved energy access and resilience of energy supply in the region are identified and implemented**

Transboundary low carbon solutions that promote increased energy access and independence in the region are identified and implemented through joint planning and collaboration. This involves the development of a basin-wide hydropower strategy, including the enhancement of grid infrastructure, as well as joint strategies for watershed management and the sustainable use and protection of transboundary wetlands as carbon sinks. All major investment projects in the region shall undergo climate proofing to ensure their resilience to future climate variability and extreme events and to make sure that the adaptive capacities in the basin are not adversely affected by the intervention.

**Output 8: A transboundary climate finance mechanism is established**

Targeted approaches and mechanisms for facilitating access to climate finance for transboundary climate response projects are developed. This includes the facilitation of a common position of riparian states in the UNFCCC negotiations regarding the Green Climate Fund and other mechanisms, along the AMCOW lines. To support national and regional efforts, a best-practice manual on Climate Finance is developed and disseminated. This will include guidelines for accessing global climate finance mechanisms, such as the CDM, NAMAs and the Green Climate Fund. Furthermore, proposals for investment projects with positive effects for climate adaptation and low carbon development are screened and improved to fulfill international criteria for climate finance.

## 7. Implementation arrangements

This strategy sets out the strategic directions of the NBI's efforts to strengthen resilience to climate change and support low carbon development in the Nile Basin. Building on the goal and objectives, outcomes and outputs outlined here, an implementation plan including a roadmap on how to put the strategy into practice will be developed. The implementation plan will be based on a five-year horizon and will include further details on how the strategy will be put into action, including the following provisions:

### Definition of activities

Identification, further development and prioritization of short- and medium-term activities is planned to achieve the stated outputs, such as review and update of country status with respect to vulnerability, adaptation to climate change, review of relevant efforts at country, regional and national levels, and the establishment of important partnerships with key basin initiatives on climate change, for example, the AMCOW's Water Climate and Development Program.

### Log-Frame

A Log-Frame Matrix will be developed indicating a detailed timeline for achieving each of the outputs, defining roles and responsibilities within the NBI and for National Focal Points, allocating a corresponding budget, and including indicators to enable measurement of progress.

### Monitoring and Evaluation (M&E)

An M&E mechanism or system for following-up on the operationalization of the strategy will be put in place. For this purpose, indicators at the level of outcomes, outputs and activities will need to be identified and formulated (see Log-Frame Matrix above), including a timeline for their achievement.

### Risk Assessment

An assessment of the potential obstacles and impediments will be undertaken within the course of action planning; appropriate risk mitigation measures will be introduced.

### National Focal Points (NFPs)

The implementation plan will reflect on ways to strengthen the coordinating role of the NFPs with relevant national institutions in riparian countries and define procedures for liaison with the NFPs, or their formal nominees.

### Institutional arrangements

The Nile-SEC, in collaboration with technical experts from the two SAPs, shall develop the roadmap, logical framework, corresponding budget, and risk assessment, as well as an M&E plan for the operationalization of this strategy in line with already established NBI procedures. The following institutional arrangement has been proposed to expedite the implementation of the Strategy:

#### NBI governance bodies

##### The Nile Basin Council of Ministers of Water (Nile-COM)

- Approve any future revisions of the Strategy on the advice of the Nile-TAC.
- Approve annual work plans of Nile-SEC, which include provisions to support activities related to the implementation of this strategy.

##### The Nile Technical Advisory Committee (Nile-TAC)

- Oversee and provide strategic guidance and advice for the implementation of the Strategy.

- Act as the technical and operational link between the countries and the Nile-SEC and SAPs and aim for accordance between the national level and the basin-wide approaches in activities related to NBI projects.

#### The NBI Secretariat (Nile-SEC)

- Manage the processes related to preparation of the roadmap, implementation, M&E, risk assessment, revision, updating, dissemination, and proper use of the Strategy.
- Oversight and technical backup to the SAPs in their application of the Strategy.
- Provision of reports on the implementation of the Strategy.

#### ENTRO and NELSAP-CU

- Primary responsibility for implementation of the Strategy in their investment planning
- Joint responsibility with Nile-SEC for preparation of the roadmap and risk assessment.
- Application and regular revisions of the established respective SAP guidelines.
- Preparation of other detailed center-specific guidelines based on the Strategy, as needed.

#### National Agencies

- The entry point for NBI's work in the countries is the respective National Focal Point (NFP) in charge of coordination of the participation of national agencies and other stakeholders in addressing climate change activities of SAP projects.

#### Guidelines and Regulations under the scope of this strategy

Relevant existing NBI guidelines and regulations shall be revisited to assure consistency with the goal and objectives established in this strategy.

#### Review

In case new issues emerge that are relevant for the content of this strategy, revisions shall be initiated by Nile-SEC as necessary and consulted with active participation of all relevant stakeholders.

## 8. Annexes

### Annex 1: Glossary

#### Adaptive capacity

The ability or potential of a system to respond successfully to climate variability and change, and includes adjustments in both behavior and in resources and technologies. The presence of adaptive capacity has been shown to be a necessary condition for the design and implementation of effective adaptation strategies so as to reduce the likelihood and the magnitude of harmful outcomes resulting from climate change. (IPCC Fourth Assessment Report: Climate Change 2007, Annex II, p. 76.)

#### Climate compatible development

'Climate compatible development' is development that minimizes the harm caused by climate impacts, while maximizing the many human development opportunities presented by a low carbon, more resilient, future. Climate change and responses to it are changing patterns of innovation, trade, production, population distribution and risk in complex ways. This is creating a new development landscape for policy makers, who need to nurture and sustain economic growth and social development in the face of multiple threats and uncertainties while also cutting emissions or keeping them low. (CDKN 2010: Defining climate compatible development, Policy Brief November 2010.)

#### Maladaptation

Maladaptation is defined as business-as-usual development which, by overlooking climate change impacts, inadvertently increases exposure and/or vulnerability to climate change. Maladaptation could also include actions undertaken to adapt to climate impacts that do not succeed in reducing vulnerability but increase it instead. (OECD 2009: Integrating Climate Change Adaptation into Development Co-operation. Policy Guidance.)

#### Resilience

The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions. (IPCC Fourth Assessment Report: Climate Change 2007, Annex II, p. 86.)

#### Vulnerability assessment

A vulnerability assessment typically seeks to achieve three main goals: to identify the degree of future risks induced by climate change and sea-level rise; to identify the key vulnerable sectors and areas within a country; and to provide a sound basis for designing adaptation strategies and their implementation. (Adapted from IPCC 2001: Climate Change 2001: Impacts, Adaptation, and Vulnerability, p.866.)

## Annex 2: List of consulted national policies and legal documents

This Climate Change Strategy builds upon policies and legal frameworks in place in NBI countries. The following relevant national policies and pieces of legislation were consulted as part of the development process of this strategy. NBI complements diverse national efforts by strengthening the transboundary and cooperative dimension in the Nile Basin.

### BURUNDI

#### National policies, laws and regulations relating explicitly to climate change

National Strategy and Action to the Climatic Changes (NAPA) (2006)  
National Adaptation Plan of Action (NAPA) (2007)  
Second National Communication to the UNFCCC (2010)  
National Climate Change Strategy and Action Plan (2012)

#### International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory

United Nations Framework Convention on Climate Change (UNFCCC) (1997)  
United Nations Convention to Combat Desertification (UNCCD) (1997)  
UNFCCC Kyoto Protocol (2005)  
EAC Climate Change Master Plan 2011-2031 (2011)  
EAC Climate Change Policy (2011)

### D.R. CONGO

#### National policies, laws and regulations relating explicitly to climate change

National Adaptation Plan of Action (NAPA) (2006)  
Second National Communication (2009)

#### International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory

United Nations Framework Convention on Climate Change (UNFCCC) (1995)  
United Nations Convention to Combat Desertification (UNCCD) (1997)  
UNFCCC Kyoto Protocol (2005)

### EGYPT

#### National policies, laws and regulations relating explicitly to climate change

Second National Communication to the UN FCCC (2010)

#### International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory

United Nations Framework Convention on Climate Change (UNFCCC) (1995)  
United Nations Convention to Combat Desertification (UNCCD) (1996)  
UNFCCC Kyoto Protocol (2005)

## ETHIOPIA

### National policies, laws and regulations relating explicitly to climate change

First National Communication to the UNFCCC (2001)  
Climate Change National Adaptation Programme of Action (NAPA)  
Climate Change Adaptation Action Plan for the Water and Energy Sector (2011)  
Ethiopia's Climate-Resilience and Green Economy Strategy (2011)

### International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory

United Nations Framework Convention on Climate Change (UNFCCC) (1994)  
United Nations Convention to Combat Desertification (UNCCD) (1997)  
UNFCCC Kyoto Protocol (2005)

## KENYA

### National policies, laws and regulations relating explicitly to climate change

First National Communication to the UNFCCC (2001)  
Kenya Vision 2030 (2008)  
National Climate Change Response Strategy (2010)  
Climate Change Action Plan (2011)  
National Adaptation Plan (2012)

### International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory

United Nations Framework Convention on Climate Change (UNFCCC) (1994)  
United Nations Convention to Combat Desertification (UNCCD) (1997)  
UNFCCC Kyoto Protocol (2005)  
EAC Climate Change Master Plan 2011-2031 (2011)  
EAC Climate Change Policy (2011)

## RWANDA

### National policies, laws and regulations relating explicitly to climate change

National Adaptation Programme of Action (NAPA) (2006)  
Green Growth and Climate Resilience National Strategy for Climate Change and Low Carbon Development (2011)  
Second National Communication to the UNFCCC (2012)

### International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory

United Nations Framework Convention on Climate Change (UNFCCC) (1998)  
United Nations Convention to Combat Desertification (UNCCD) (1999)  
UNFCCC Kyoto Protocol (2005)  
EAC Climate Change Master Plan 2011-2031 (2011)  
EAC Climate Change Policy (2011)

## **SOUTH SUDAN**

### **National policies, laws and regulations relating explicitly to climate change**

Environmental Protection Bill (2010)  
South Sudan Development Plan 2011-2013 (2011)  
National Environmental Policy (2012)

### **International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory**

United Nations Framework Convention on Climate Change (UNFCCC) (Observatory State)

## **SUDAN**

### **National policies, laws and regulations relating explicitly to climate change**

First National Communication to the UNFCCC (2003)  
National Adaptation Programme of Action (NAPA) (2007)  
Desertification Control Act (2009)

### **International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory**

United Nations Framework Convention on Climate Change (UNFCCC) (1994)  
United Nations Convention to Combat Desertification (UNCCD) (1994)  
UNFCC Kyoto Protocol (2005)

## **TANZANIA**

### **National policies, laws and regulations relating explicitly to climate change**

First National Communication to the UNFCCC (2003)  
National Adaptation Programme of Action (NAPA) (2007)

### **International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory**

United Nations Framework Convention on Climate Change (UNFCCC) (1996)  
United Nations Convention to Combat Desertification (UNCCD) (1997)  
UNFCCC Kyoto Protocol (2002)  
EAC Climate Change Master Plan 2011-2031 (2011)  
EAC Climate Change Policy (2011)

## **UGANDA**

### **National policies, laws and regulations relating explicitly to climate change**

First National Communication to the UNFCCC (2002)  
National Adaptation Programme of Action (NAPA) (2007)

### **International and regional conventions/treaties/protocols on climate change and related issues to which country is a signatory**

United Nations Framework Convention on Climate Change (UNFCCC) (1994)  
United Nations Convention to Combat Desertification (UNCCD) (1997)

UNFCCC Kyoto Protocol (2002)  
EAC Climate Change Master Plan 2011-2031 (2011)  
EAC Climate Change Policy (2011)



**NILE BASIN INITIATIVE**  
Initiative du Bassin du Nil

# NILE BASIN INITIATIVE

The NBI Climate Change Strategy is available online at <http://nileis.nilebasin.org>

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ISBN: 978-9970-444-08-3

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