



# Lake Chad Basin Strategic Action Programme (SAP)

Abridged Version

31/07/2023



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## List of Acronyms

<b>AA</b>	Action Area
<b>AfDB</b>	African Development Bank
<b>AFROSAI</b>	African Organization of Supreme Audit Institutions
<b>AMCOW</b>	African Ministers' Council on Water
<b>ANBO</b>	African Network of Basin Organizations
<b>AWF</b>	African Water Facilitation
<b>BMZ</b>	Federal Ministry for Economic Cooperation and Development
<b>CAR</b>	Central African Republic
<b>CEMAC</b>	Central African Economic and Monetary Community / Communauté Economique et Monétaire de l'Afrique Centrale
<b>CITES</b>	Convention on International Trade in Endangered Species of Wild Fauna and Flora
<b>CIWA</b>	Cooperation in International Waters in Africa
<b>CNRD</b>	Centre National de Recherche pour le Développement (Consulting firm)
<b>ECCAS</b>	Economic Community of Central African States
<b>ECOWAS</b>	Economic Community of West African States
<b>EQO</b>	Environmental Quality Objectives
<b>EU</b>	European Union
<b>FAO</b>	United Nations Food and Agriculture Organization
<b>GEF</b>	Global Environment Facility
<b>GIWA</b>	Global International Water Assessment
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>GWP</b>	Global Water Partnership
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources
<b>LCB</b>	Lake Chad Basin
<b>LCBC</b>	Lake Chad Basin Commission
<b>PTEP</b>	Priority Transboundary Environmental Problem
<b>REC</b>	Regional Economic Commission
<b>SAP</b>	Strategic Action Programme
<b>SDG</b>	Sustainable Development Goals
<b>TDA</b>	Transboundary Diagnostic Analysis
<b>UNDP</b>	United Nations Development Programme
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>WAEMU/ UEMOA</b>	West African Economic and Monetary Union / Union Economique et Monétaire Ouest-Africaine
<b>WASSMO</b>	Water and Sanitation Sector Monitoring and Reporting System

The Lake Chad Basin is one of the first transboundary river/lake basins, wherein the Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme (SAP) were developed. The TDA and SAP are planning instruments used by the Global Environment Facility (GEF) to identify and find solutions to priority environmental problems in transboundary ecosystems like shared river and lake basins.

The first TDA was developed in 2005, followed by the SAP in 2008. But due to rapid hydroclimatic, ecological, socio-economic and security changes, it became imperative to update both documents. As a result, the TDA was updated in 2018, while the SAP is the purpose of this document.

This SAP aims to find solutions to the Priority Transboundary Environmental Problems

(PTEPs) identified in the 2018 TDA. The PTEPs identified in the TDA include:

- i. Variability in hydrological and hydrogeological regimes,
- ii. Biodiversity degradation,
- iii. Sedimentation and
- iv. Climate variability and change.

As a response to these threats, stakeholders of the Basin agreed on an ambitious vision to reverse the degradation trends of natural resources and restore the Basin's once-verdant environment and landscape. The agreed 15 years vision declaration is as follows: *"In 2037, the once-luxuriant natural resources and landscapes of the Lake Chad and its basin are rehabilitated and managed sustainably and equitably to build resilience to climate change and variability, support inclusive economic growth, prosperity and enhance social cohesion, the spirit of solidarity and sharing in a peaceful and secure regional context"*. In addition, the following Environmental Quality Objectives (EQO) were defined for the Vision:

- ▶ **EQO 1.** Integrated, efficient and sustainable management of fresh surface, ground, and rainwater resources to meet the growing and competing needs of states, sectors, and users, including ecosystems.
- ▶ **EQO 2.** Conservation of biodiversity through the restoration and sustainable management of ecosystems and, in particular, sensitive habitats for the protection and survival of endangered and endemic species in the basin
- ▶ **EQO 3.** Decrease and, in some areas, reverse silting and sedimentation such that they are no longer a significant obstacle to the development of productive activities, human and animal health, and ecosystems in the Lake and its tributaries.
- ▶ **EQO 4.** Reduce the vulnerability and strengthen the resilience of human and animal populations, production systems and ecosystems in the light of variability and climate change.
- ▶ In addition to these EQOs, cross-cutting objectives were posited to create enabling governance.

For each of the five objectives (EQO and cross-cutting objective), the SAP outlines five Action Areas, subsequently broken down into Actions. Thus, the SAP has 24 Action Areas and 89 Actions.

The estimated budget for the SAP over the agreed 15 years stands at about \$210 million US Dollars, of which \$73 million US Dollars is allocated to phase one, which spans over 5 years (2023 to 2027). A succinct five-year action plan, annexed herein, is developed for phase one.

Mindful of the number and diverse nature of its actions, it can be said that this SAP is ambitious. Its implementation will require considerable effort and creativity in mobilising funding. Some proposed solutions include capitalising on the fact that the implementation periods of some ongoing projects could be extended. The extended projects should contribute to funding some priority activities of the SAP. Another solution is to establish a trust fund (or foundation) to fund the conservation and sustainable management of water and environmental resources of the Lake Chad Basin. The trust fund will receive funding from the implementation of provisions of the Water Charter, for example, the "Abstractor Pays" and "Polluter Pays" principles. The mobilisation of funds for the SAP and its implementation are considered shared responsibilities between LCBC, its Member States and even non-State actors in the Basin.



## PREFACE

In their travel diaries, European explorers who visited Central Africa between the 19th and the beginning of the 20th century marveled at the green meadows and fertile lands of Lake Chad and its basin – a unique, heavenly ecosystem with a rich and diverse wildlife.<sup>1</sup>

Located in the heart of the Saharo-Sahelian zone, Lake Chad indeed appears as a giant oasis in a hyper-arid environment. Despite low rainfall and significant evaporation due to high temperatures, the lake remains a permanent freshwater body, the extent of which varies considerably from year to year and seasonally. Under the lake's body of water lies an immense aquifer with an estimated reserve of 675 billion cubic meters of freshwater<sup>2</sup>. These distinctive hydrogeological and hydro-climatic characteristics have shaped the unique features of the lake ecosystem. The lake region hosts a rich biodiversity and supports diversified livelihoods (agriculture, livestock, fishing, hunting, and exploitation of forest products). Hence, the lake region is home to high concentrations of population and has historically been an area of encounters, exchanges, and cultural mixing and the place of the emergence of brilliant civilizations and powerful states.

Over the past few decades, the challenges of managing the lake and its basin have multiplied and become more complex. The population living in the islets and shoreline of the lake has grown from 700,000 people in the 1970s to almost 3 million today – with the conventional basin housing between 50 and 60 million people. Demographic pressure on the resources of the basin is increasing. At the same time, the hydraulicity of the lake, subject to strong interannual climatic variability, is part of a long-term downward trend, leading to a decline in the average surface area of the water body. The degradation of the environment of the basin is also manifested by an advanced level of deforestation, the rapid silting of the water body and the supply channels of the lake, the proliferation of aquatic weeds, and biodiversity loss. For two decades, the lake region has been the scene of armed confrontations between national defense forces and insurgent groups, plunging the region into chronic insecurity.

In response to threats facing this unique ecosystem, the countries of the basin created the Lake Chad Basin Commission (LCBC) shortly after their access to independence. Today bringing together six member states (Cameroon, Libya, Niger, Nigeria, Central African Republic, and Chad), the LCBC's mission is to ensure the management of the lake and its shared water resources, the preservation of ecosystems, and the promotion of regional integration, peace, security and development in the lake region.

This Strategic Action Plan (SAP) as well as the Transboundary Diagnostic Analysis (TDA) on which it is based are important analytical and participatory planning instruments that the LCBC uses to respond to the challenges and dangers mentioned above. Based on the problems identified in the updated TDA (2018) of the Lake Chad Basin, this SAP defines environmental quality objectives that contribute to the achievement of a long-term vision of restoration

1. Excerpts from explorers' travel diaries quoted in Atlas du lac Tchad. Passages. Paris (Magrin, G. ; J. Lemoalle ; R. Pourtier. 2015)

2. CNRD. 2020. Etudes paléoclimatologiques et hygroclimatologiques. Biosphere and Heritage of the Lake Chad (BIOPALT Project). LCBC-UNESCO-AfDB-IRD-CNRD. NDjamena. January

and sustainable management of the basin resources. The objective is to strengthen resilience to climate variability and change, support inclusive economic growth, and promote solidarity and sharing between riparian populations and neighboring States in a regional context of peace and security. The SAP sets the course, an ambitious course, and indicates the way to move toward it.

Following its endorsement by the LCBC Council of Ministers and by the Heads of State Summit (both held in Abuja in November 2022), this SAP is now an official planning document of the LCBC. Its financing and implementation are primarily the duty of the LCBC and its Member States. But it is also the shared responsibility of all the stakeholders and in particular the users of the basin's resources, local communities, non-governmental organizations, the private sector, and technical and financial partners. To all, I appeal for a resolute, constructive, and coordinated commitment to the restoration, safeguarding, and sustainable use of the resources of the Lake Chad Basin, our common heritage.

**S.E. MAMMAN NUHU**

*Secrétaire Exécutif, Commission du Bassin du Lac Tchad*

*signature of author*



## 01. INTRODUCTION AND BACKGROUND

The conventional basin of the Lake Chad – coinciding to a large extent with the active part of the lake watershed – has a surface area of 984,455 km<sup>2</sup>, and partly covers the territories of Chad (37% of the conventional basin); Cameroon (6%); Nigeria (21%); Niger (16%); Central African Republic - CAR (20%). In the middle of this hydro-system, the Lake Chad water body is subject to strong seasonal and inter-annual variations, punctuated by the variability of hydro-rainfall conditions. In its medium to large lake configuration – configurations during which the lake water body covers 10,000 to 25,000 km<sup>2</sup> – Lake Chad is ranked as the 4<sup>th</sup> largest African lake after Lakes Victoria, Tanganyika and Malawi. It is also the largest endorheic freshwater lake in the world.

Straddling the Sahelian zone and the Sahara desert, between isohyets 500 mm in the south and less than 200 mm in the north, Lake Chad is comparable to a giant oasis in a hyper-arid environment. It is therefore an area of high concentration of human and animal populations. An estimated 50 million people live in the Lake Chad watershed. Half of this population lives in the Nigerian part of the basin, which represents only 7.5% of the total area of the basin.

The Lake Chad Basin faces a number of challenges. Due to climate variability and change, the lake's water body has shrunk considerably in recent decades, from 25,000 km<sup>2</sup> in the early 1960s to 1,350 km<sup>2</sup> in the 1980s, hence a decrease of 90%. Today the surface area of the body of water varies between 8,000 and 14,000 km<sup>2</sup> depending on the annual hydro-rainfall conditions. The southward migration of isohyets and the advance of the desert are accelerating sand encroachment in parts of the basin, which adds to the silting that results from increased erosion and degradation of the banks in the main rivers that feed the lake (Chari-Logone, Komadugu Yobe). The invasive plants that have now colonized much of the lake as well as the basin's floodplains continue to expand their coverage year after year. Since the early 2000s, the Lake Chad region has been the scene of clashes between terrorist movements and the armed forces of neighbouring countries, leading to a climate of insecurity and the massive displacement of populations. In general, the degradation of the Lake Chad basin's environment remains closely linked to major deficiencies in the governance and sustainable management of water and other natural resources in the basin.

The LCBC was created in 1964, with the mandate to:

- a. sustainably and equitably manage the waters of Lake Chad and the other transboundary resources of the basin;
- b. conserve and protect ecosystems; and,
- c. preserve and promote transboundary integration, peace and security in the basin.

The LCBC, therefore, finds itself at the forefront of the search for responses to the major current and emerging challenges of the basin. To this end, the LCBC needs effective and appropriate instruments to address the multiple threats that beset the Lake Chad basin.

The Strategic Action Plan (SAP) is one of the tools available to transboundary basin organizations to formulate and implement solutions to major transboundary environmental problems already identified in the Transboundary Diagnostic

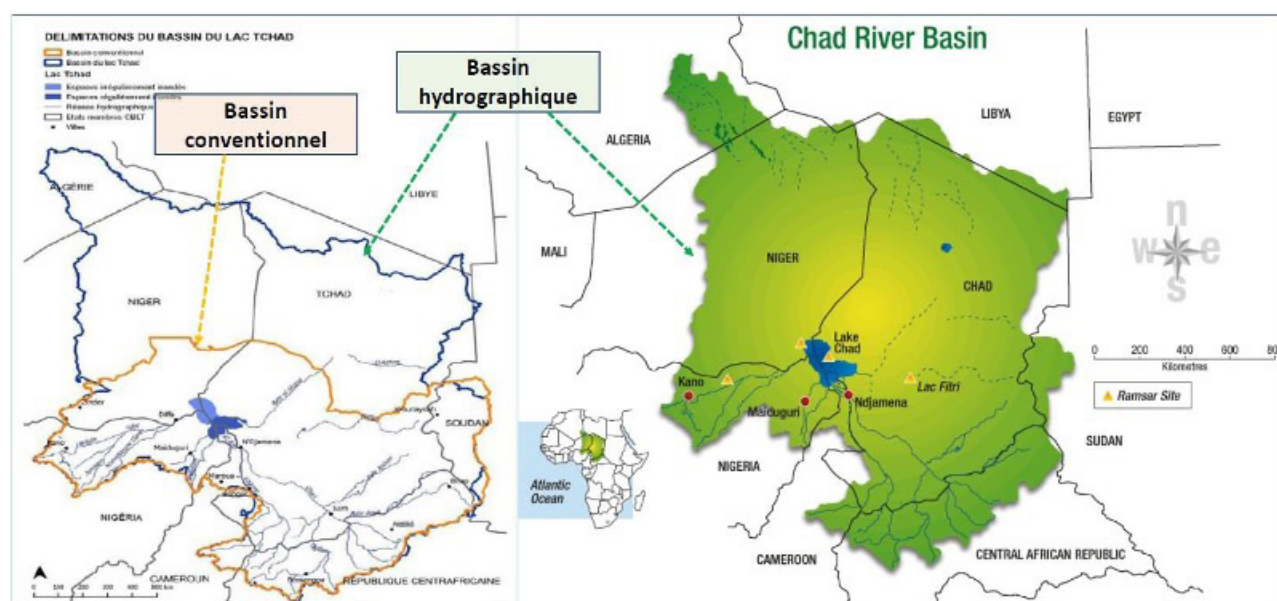
Analysis (TDA). The TDA and the SAP are therefore complementary planning and decision-support tools designed by the Global Environment Facility (GEF).

The Lake Chad Basin is one of the first river and lake basins in which a Transboundary Diagnostic Analysis (TDA) exercise was carried out. Based on the Lake Chad Basin TDA produced in 2005, the first Strategic Action Plan (SAP) was developed in 2008.

The first TDA of the basin was updated in 2018, taking into account new factors such as the adoption in 2000 of the Lake Chad Basin Vision 2025 and of the Water Charter in 2012. The continued deterioration of the hydro-climatic, ecological and security context of the basin also prompted the updating of the TDA. After reviewing and examining in detail the challenges and threats in the basin, the 2018 TDA retained 4 of them, which are hence considered to be the most urgent priority and/or shared transboundary environmental problems (PETPs) to be resolved in the subsequent phase of the SAP. These PETPs are:

- ▶ **PTEP 1.** Variability in the hydrological and hydrogeological regime: This problem concerns (a) the high frequency and importance of hydrological variability; (b) the tendency for the lake to shrink as a result of the drop in inflows from the hydrographic network that supplies it; (c) downward trend in static groundwater level resulting from reduced aquifer recharge.
- ▶ **PTEP 2.** Biodiversity Degradation: This problem combines the decline in the diversity of biological resources, the loss and modification of ecosystems, the proliferation of invasive species, the decline in fish stocks and in the diversity of the fish populations, the threats to rare and endemic plant and wildlife species, etc.
- ▶ **PTEP 3.** Sedimentation: It focuses on increased silting (sediment deposits) and sand encroachment in the lake and its tributaries. This is closely linked to wind and water-induced erosion.
- ▶ **PTEP 4.** Climate variability and change: The TDA describes climate variability and change as a cross-cutting problem, which amplifies other priority problems while being responsible for the depleting livelihood, social cohesion, or peaceful coexistence between communities in the Basin. The vulnerability of the Basin (physical, human, and animal environment) to the impacts of climate variability and change is underscored.

The updating of the TDA in 2018 required the revision of the SAP to take into account the new challenges identified. This document is the product of the SAP review and updating process. The updated SAP is founded on a consensual vision agreed upon among the stakeholders who engaged in the participatory revision process of the SAP. It presents the environmental quality objectives (EQOs) that underpin this vision, the fields of action and recommended actions, the strategy for mobilizing funds, as well as the principles and modalities for implementing the SAP. The first five-year plan of the SAP is presented in the form of a matrix in the appendix.



**Figure 1:** Hydrographic and Conventional basins of Lake Chad.



## 02. VISION, STRATEGIC OBJECTIVES AND THEORY OF CHANGE

### 2.1. Vision and Strategic Objectives

The long-term vision resulting from the participatory process of formulating the SAP aims to achieve the sustainable conservation of Lake Chad and other wetlands, to ensure the economic security of freshwater resources, biodiversity and aquatic resources, and to reduce the level of poverty in the basin. The vision of the Strategic Action Program (SAP) also aligns with the African Union's Agenda 2063 and the 2030 Agenda on Sustainable Development. Achieving the Sustainable Development Goals depends on the equitable and sound management of water resources in the Lake Chad Basin.

The vision statement for the SAP agreed between key stakeholders in the Lake Chad Basin is as follows:

“

*In 2037, the once-luxuriant natural resources and landscapes of the Lake Chad and its basin are rehabilitated and managed sustainably and equitably to build resilience to climate change and variability, support inclusive economic growth, prosperity and enhance social cohesion, the spirit of solidarity and sharing in a peaceful and secure regional context.*

”

An Environmental Quality Objective is defined as a response to each Priority Transboundary Environmental Problem identified in the TDA

Priority environmental problems identified in the TDA.	Environmental Quality Objective (EQO)
<b>Problem 1. variability of hydrological and hydrogeological regimes;</b>	<b>EQO 1.</b> Integrated, efficient, and sustainable management of fresh surface, ground, and rainwater resources to meet the growing and competing needs of states, sectors, and users, including ecosystems
<b>Problem 2. Biodiversity Degradation.</b>	<b>EQO 2.</b> Conservation of biodiversity through the restoration and sustainable management of ecosystems and, in particular, sensitive habitats for the protection and survival of endangered and endemic species in the basin
<b>Problem 3. Sedimentation</b>	<b>EQO 3.</b> Decrease and, in some areas, reverse silting and sedimentation such that they are no longer a significant obstacle to the development of productive activities, human and animal health, and ecosystems in the Lake and its tributaries
<b>Problem 4. Variability and climate change.</b>	<b>EQO 4.</b> Reduce the vulnerability and strengthen the resilience of human and animal populations, production systems and ecosystems in the light of variability and climate change

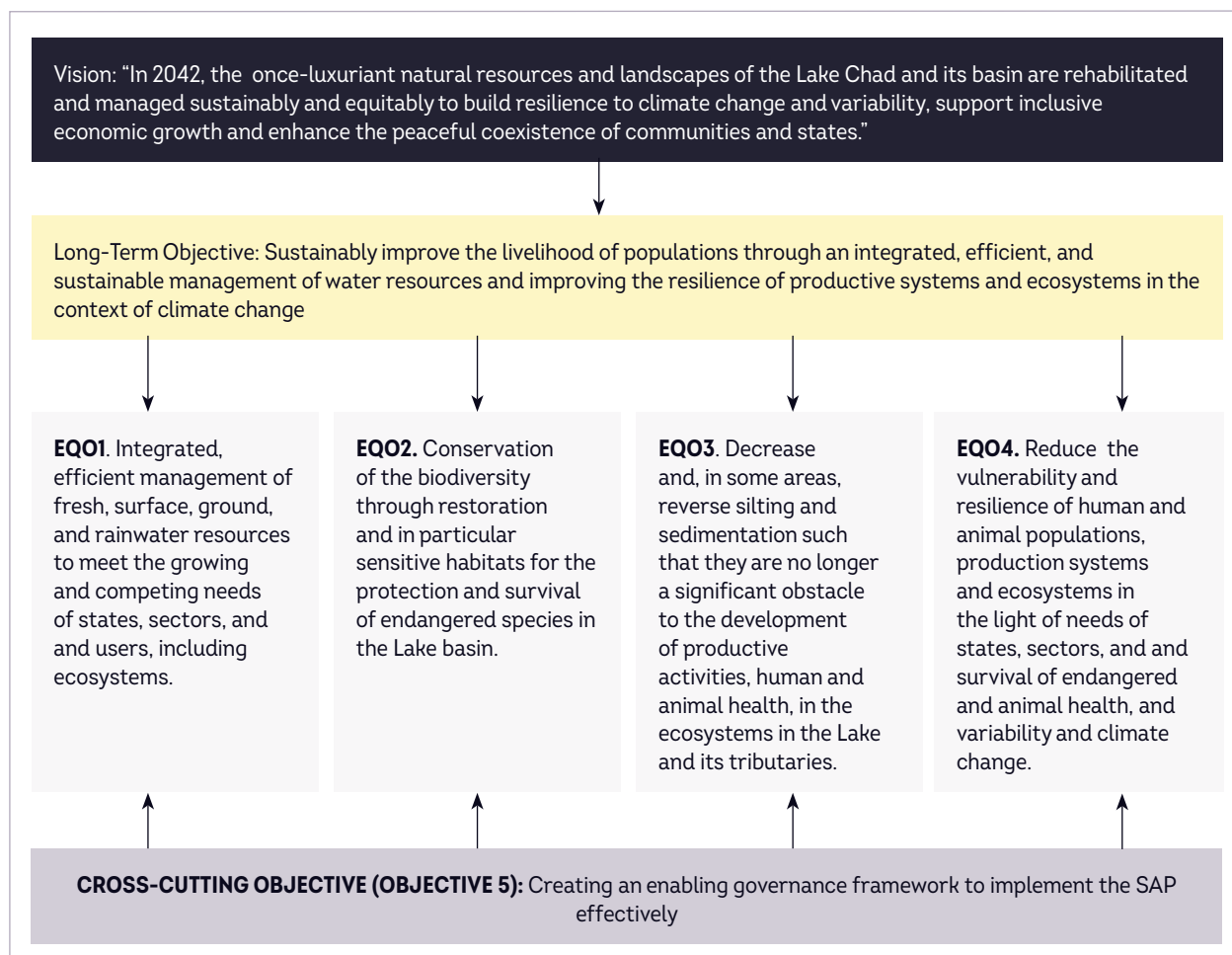
### 2.3. Theory of Change

Until the early 20<sup>th</sup> century, the Lake Chad region was home to dense vegetation, abundant and diverse wildlife. As such, it became the converging and settlement point for humans, in contrast to deserted neighbouring arid lands. Powerful states with brilliant civilisations succeeded one another since at least the 5<sup>th</sup> century AD. Subsequently, and in particular, since the second half of the 20<sup>th</sup> century, the Lake Chad region suffered from a series of crises due to factors such as political fragmentation with the emergence of independent states sharing the waters and associated resources of the lake, rapid demographic growth, climate change and, for the past twenty years, widespread insecurity with the increasingly visible presence of armed groups. While many of these factors are part of a bold trend that is difficult to reverse in the short term, it is still possible to set in motion a process toward rebuilding, at least partly, the grandeur and attractiveness of Lake Chad. It is this audacious challenge that underpins the Vision of the SAP, which consists in rehabilitating or even restoring the natural resources and the once luxuriant landscapes of Lake Chad and its basin while ensuring their sustainable and equitable management, thus contributing to strengthening the resilience of the basin.

Four levers are activated for the achievement of the Vision and the overall long-term objective of the SAP: these are the Environmental Quality Objectives (EQOs). Each of these EQOs is intended to ensure a satisfactory level of resolution to one of the four Priority Transboundary Environmental Problems (PETPs) identified in the 2018 TDA of the Lake Chad Basin. The SAP suggests a focus on meeting the growing and competing water needs through the integrated, efficient and sustainable management of water resources - rainwater, surface water and groundwater (EQO 1). The central concern here is the provision of sufficient quantities of water with adequate quality for human and animal consumption, the maintenance of ecosystems and the development of productive activities. Faced with the loss of diversity of fauna and flora - which is another of the four PETPs - the SAP intends to work for the conservation of biodiversity through the restoration and sustainable management of ecosystems, with particular emphasis on critical habitats for the preservation and survival of threatened and endemic species in the basin (EQO 2). The TDA identified sedimentation and sand encroachment, caused by accelerated water and wind erosion, as one of the major transboundary problems in the Basin. The ambition of the SAP is to slow down and, where feasible and relevant, reverse sand encroachment and silting to such levels that they no longer constitute a major obstacle to the development of productive activities, to human and animal health and to ecosystems in the lake and its tributaries (EQO 3). Climate variability and change play a leading role in the process of degradation of the environment in general and of natural resources, and water in particular. In response to this challenge, the SAP aims to reduce the vulnerability and strengthen the resilience of human and animal populations, production systems and ecosystems in a context of climate variability and change (EQO 4).

The achievement of these interdependent 4 EQOs and their effective implementation require an enabling legal and institutional environment. An important dimension of this environment relates to the operationalization and implementation of international water conventions and, especially, of the Lake Chad Basin Water Charter. Several provisions of this Charter are of great relevance to the EQOs. Consideration of the gender dimension, capacity building at all levels and the implementation of an effective monitoring and evaluation system are key dimensions of the governance framework.

**Figure 2: Vision, Long-Term Objective and EQOs**





### 03. ACTION AREAS AND PRIORITY INTERVENTIONS

**EQO 1. Integrated, efficient and sustainable management of fresh surface, ground, and rainwater resources to meet the growing and competing needs of states, sectors, and users, including ecosystems**

**T**his quality objective is to address the challenges associated with the variability of the hydrological and hydrogeological regime in the Lake Chad basin. The seasonal and cyclical variability of water has a negative impact on the development and sustainable management of basin resources. The causes of this problem include climate change, increasing pressure on water resources and poor management of hydraulic structures. To solve this problem, it is necessary to bridge the knowledge gap, improve water availability, reduce variations in the water regime, preserve water quality and promote innovative water governance.

#### **Action Area 1.1. Improving knowledge of water resources:**

- ▶ **Action 1.1.1.** Establish a regular quality and quantity water resources monitoring mechanism:
- ▶ Strengthen and rehabilitate hydrometeorological mechanisms (groundwater and rainfall)
- ▶ Put in place a relevant network to monitor groundwater resources,
- ▶ Ensure regular monitoring of rainfall, hydrology, and groundwater,
- ▶ Conduct regular targeted sampling and analysis of surface and groundwater quality,
- ▶ **Action 1.1.2.** Promote the sharing/dissemination of the outcomes of the regular monitoring of the quality and quantity of water resources.

#### **Action Area 1.2. Improving water availability:**

- ▶ **Action 1.2.1.** Ensure water supply/generation/production:
- ▶ Support targeted interventions to improve flows into tributaries and the lake,
- ▶ Improve soil retention capacity for groundwater recharge,
- ▶ Promote and support stormwater, surface water and groundwater conjunctive use initiatives.
- ▶ **Action 1.2.2.** Ensure the management of water demand/needs in order to reduce the pressure on water resources:
- ▶ Carry out stock-taking, as well as periodic and systematic assessments of water resources,
- ▶ Promote water use efficiency (agriculture, energy, etc.),
- ▶ Support in disseminating and implementing provisions of the Water Charter relating to regulations on water abstractions and use.

- ▶ **Action 1.2.3.** Support further in-depth review of inter-basin transfer options for the Lake Chad Basin hydro-system:
- ▶ Take stock of the progress of the review on inter-basin transfer options,
- ▶ Conduct, if necessary, the identification and study of additional options, including alternatives to inter-basin transfers,
- ▶ Carry out an in-depth comparative analysis of options, with particular emphasis on environmental advantages and disadvantages,
- ▶ Engage in dialogue with stakeholders on the outcomes of the options analysis and make recommendations.

#### **Action Area 1.3. Mitigating/controlling variability in rainwater, groundwater, and surface water regimes:**

- ▶ **Action 1.3.1.** Design and implement water control investment programmes:
- ▶ Support the construction of reservoirs (small and medium-sized) while paying special attention to social and environmental aspects,
- ▶ Promote irrigation and improved flood-recession agriculture (controlled submersion),
- ▶ Optimise and coordinate the management of existing reservoirs in the lake's tributaries.
- ▶ **Action 1.3.2.** Increase water retention capacity of soils:
- ▶ Support initiatives to reforest/vegetate riverbanks and watersheds of the lake and its tributaries.
- ▶ Disseminate and support the adoption of sustainable water and land management techniques.

#### **Action Area 1.4. Controlling water quality degradation:**

- ▶ **Action 1.4.1.** Conserve and sustainably manage ecosystems/wetlands as natural water purification infrastructure,
- ▶ **Action 1.4.2.** Strengthen control of water pollution/contamination from mining areas, industrial units, and human settlements,
- ▶ **Action 1.4.3.** Improve agricultural drainage systems and promote organic farming to mitigate water pollution from agricultural chemical inputs,
- ▶ **Action 1.4.4.** Control water pollution by discharges of polluted/contaminated water from fishing vessels/boats and inland waterway transport,
- ▶ **Action 1.4.5.** Control water pollution caused by domestic waste discharges (solid and liquid),
- ▶ **Action 1.4.6.** Control water pollution/eutrophication related to the proliferation of invasive aquatic plants,
- ▶ **Action 1.4.7.** Promote best practices of community-managed managed sanitation (community-led total sanitation).

#### **Action Area 1.5. Implementing innovative water governance approaches to arbitrate and align competing needs:**

- ▶ **Action 1.5.1.** Promote integrated water resources management (IWRM) to reconcile competing demands between sectors and uses,
- ▶ **Action 1.5.2.** Promote the Water-Food-Energy-Ecosystem Nexus approach to enhance water resource allocation between competing sectors,
- ▶ **Action 1.5.3.** Organise stakeholder forums on the management of sub-basins and their natural resources.

**EQO 2. Conservation of biodiversity through the restoration and sustainable management of ecosystems and, in particular, sensitive habitats for the protection and survival of endangered and endemic species in the basin**

The hydro-ecological complex of the Lake and its tributaries is home to many animal and plant species, many of which are endemic and/or threatened. However, the biodiversity of the Lake Chad basin is declining due to overexploitation, poaching, deforestation and other anthropogenic pressures. The root causes of this degradation include the absence of appropriate policies and legislation, as well as demographic pressure and climate change. To combat this degradation, it is necessary to restore and sustainably manage sensitive ecosystems, promote sustainable fishing, combat invasive species, and support alternative income initiatives.

### **Action Area 2.1. Improving knowledge of endemic and endangered species:**

- ▶ **Action 2.1.1.** Carry out annual inventories and ecological monitoring of the dynamics of animal, bird, and plant species<sup>3</sup>,
- ▶ **Action 2.1.2.** Establish and disseminate the status of critical animal, bird, and plant species,
- ▶ **Action 2.1.3.** Identify endemic and endangered species in the LCB (listed on the IUCN Red List),
- ▶ **Action 2.1.4.** Conduct targeted studies on the behaviour and habitats of endangered species,
- ▶ **Action 2.1.5.** Implement protection programmes for critically endangered species based on the outcomes of targeted studies on these species.

### **Action Area 2.2. Rehabilitation/Conservation and sustainable management of ecosystems with high biodiversity value:**

- ▶ **Action 2.2.1.** Assess biodiversity and ecosystem services of main biotopes in the LCB,
- ▶ **Action 2.2.2.** Designate high-value biodiversity ecosystems as protected areas,
- ▶ **Action 2.2.3.** Enhance the protection/sustainable management of protected areas, parks and Ramsar sites,
- ▶ **Action 2.2.4.** Secure wildlife corridors,
- ▶ **Action 2.2.5.** Restore degraded landscapes (rehabilitate areas damaged by poor land management practices, rehabilitate groves, etc.),
- ▶ **Action 2.2.6.** Promote reforestation (in collaboration with the Great Green Wall initiative),
- ▶ **Action 2.2.7.** Limit the expansion of agro-pastoral lands while promoting intensive agriculture and livestock farming,
- ▶ **Action 2.2.8.** Support bush fire control activities, with emphasis on agriculture (slash and burn), livestock (early fires), hunting, etc.,
- ▶ **Action 2.2.9.** Support Poaching control interventions,
- ▶ **Action 2.2.10.** Prevent illegal trade in endangered plant and wildlife species (by implementing the Convention on International Trade in Endangered Species - CITES).

### **Action Area 2.3. Supporting the protection and sustainable management of floodplains and Ramsar sites:**

- ▶ **Action 2.3.1.** Conduct studies on required environmental flows, considering the roles of wetlands in the Basin,
- ▶ **Action 2.3.2.** Support the creation of a biosphere reserve in the Lake Chad Basin, which connects and strengthens the management of Ramsar sites in the Basin,
- ▶ **Action 2.3.3.** Support the drafting, funding, and implementation of the LCB biosphere reserve management plan.

### **Action Area 2.4. Protecting and managing fish fauna sustainably:**

- ▶ **Action 2.4.1.** Study fish fauna of the Lake and its tributaries,
- ▶ **Action 2.4.2.** Identify and protect fish spawning grounds/reproduction areas,
- ▶ **Action 2.4.3.** Promote sustainable fishing techniques and control all forms of “ecocidal” fishing practices and methods,
- ▶ **Action 2.4.4.** Identify and implement special protection measures for endangered aquatic species,
- ▶ **Action 2.4.5.** Adopt and implement the principle of periodic biological rest and recovery periods,
- ▶ **Action 2.4.6.** Support the harmonisation of fisheries regulations (water bodies and tributaries of the Lake).

### **Action Area 2.5. Controlling invasive species and/or promoting their economic exploitation:**

- ▶ **Action 2.5.1.** Carry out the inventory of the presence, spatial distribution, and evolution of invasive species (plant and animal),
- ▶ **Action 2.5.2.** Launch an emergency mechanical control programme (dredging, mowing, manual cutting of the grass, etc), targeting priority navigation channels, irrigation channels, lake feeder channels from tributaries, oasian cuvettes (essentially located in the Nigerien and Chadian portions of the Basin), etc.,
- ▶ **Action 2.5.3.** Support sustained mechanical and biological control for all areas colonised by invasive species,
- ▶ **Action 2.5.4.** Establish a monitoring and warning system to address the risk of invasive and proliferating species,
- ▶ **Action 2.5.5.** Promote the economic exploitation of invasive species (biomass for energy production; or as building material, agricultural composting, etc.).

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3. This can build on the inventories of threatened species conducted in the frame of the 2015 Environmental Audit of Lake Chad: GIZ. 2015. Joint Environmental Audit on the Drying up of Lake Chad. European Union (EU)-BMZ-GIZ- . African Organization of Supreme Audit Institutions (AFROSAI). Yaoundé (Cameroon). May

## **Action Area 2.6. Mitigating the pressure on ecosystems and threats to biodiversity by improving access to alternative income sources and practices:**

- ▶ **Action 2.6.1.** Promote fish farming,
- ▶ **Action 2.6.2.** Promote wood energy-saving techniques and technologies (e.g., improved stoves),
- ▶ **Action 2.6.3.** Promote alternative sources of energy (e.g., biomass from crop residues or proliferating aquatic species, solar energy, wind energy, butane gas as a substitute for firewood or charcoal),
- ▶ **Action 2.6.4.** Promote income-generating initiatives for women and the youth.

**EQO 3.** Decrease and, in some areas, reverse silting and sedimentation such that they are no longer a significant obstacle to the development of productive activities, human and animal health, and ecosystems in the Lake and its tributaries

Sedimentation in the lake and the tributaries of the lake basin is mainly caused by water and wind erosion. Each year, more than 2 million tons of sediment are deposited in the lake by the tributaries. In addition, the sand removed from the soil and deposited by the wind in the Lake and tributaries worsens the pace of sedimentation in the overall hydro-system of the Lake. These sediment deposits reduce the thickness of the water table, obstruct the beds of the tributaries and accelerate the silting up of the reservoirs. The causes of sedimentation are deforestation, inappropriate agricultural practices and deficiencies in the governance framework. In response to the sedimentation problem, actions to protect and restore the priority sources of the tributaries will be undertaken, as well as interventions aimed at dune stabilisation and targeted sand removal interventions.

## **Action Area 3.1. Reversing, controlling, or reducing sedimentation of water bodies of the Lake and its tributaries:**

- ▶ **Action 3.1.1.** Rehabilitate and protect the sources of the tributaries of Lake Chad,
- ▶ **Action 3.1.2.** Promote integrated anti-erosion management of various catchments of the Challawa Gorge Dam in Kano-North Nigeria,
- ▶ **Action 3.1.3.** Undertake targeted bank stabilisation initiatives for the Logone and the Maga Lake weir,
- ▶ **Action 3.1.4.** Control the obstruction by invasive plants of channels and tributaries that supply water to the Lake.

## **Action Area 3.2. Reversing, controlling or reducing silting in the river system and throughout the active Lake Basin:**

- ▶ **Action 3.2.1.** Carry out dune stabilisation and planting of windbreaks,
- ▶ **Action 3.2.2.** Launch activities of sand removal in waterways and road networks, rivers, and lakes.
- ▶ **Action Area 3.3.** Targeted dredging of portions of the Lake and tributaries to improve filling and navigability conditions of the Lake and tributaries:
- ▶ **Action 3.3.1.** Carry out the mapping of reaches and areas of the lake to be targeted for dredging activities,
- ▶ **Action 3.3.2.** Conduct dredging in identified priority sites.

## **Action Area 3.4. Promoting agropastoral practices based on efficient land and water management techniques:**

- ▶ **Action 3.4.1.** Promote agroforestry and efficient integration of agriculture, livestock and forestry,
- ▶ **Action 3.4.2.** Promote integrated land and water management practices.
- ▶ **Action Area 3.5.** Promoting reforestation/revegetation of lands in the Lake Chad basin:
- ▶ **Action 3.5.1.** Support reforestation campaigns throughout the Basin in partnership with the Great Green Wall Initiative,
- ▶ **Action 3.5.2.** Initiate deferred grazing interventions in set-aside zones reserved for natural regeneration,
- ▶ **Action 3.5.3.** Support bush fire control activities.

**EQO 4.** Reducing the vulnerability and strengthening the resilience of human and animal populations, production systems and ecosystems in the light of variability and climate change

Lake Chad has experienced a significant decrease in surface area in past decades, although its average level of filling has improved in recent years. However, climate forecasts predict an increase in average temperatures and extreme

weather events such as droughts and floods. The Lake Chad Basin countries are ill-prepared for climate change shocks and are ranked among the most vulnerable at the global level according to the Climate Change Vulnerability Index. Factors contributing to this vulnerability include high dependency on natural resources, undiversified agro-pastoral activities and poor water control. It is therefore important to put in place adaptation measures to minimize the impacts of climate change in the region.

#### **Action Area 4.1. Knowledge of climate developments and identifying areas of vulnerability to climate change:**

- ▶ **Action 4.1.1.** Conduct studies on climate change scenarios in the Lake Basin,
- ▶ **Action 4.1.2.** Identify areas, ecosystems, production systems, and groups most vulnerable to variability and climate change,
- ▶ **Action 4.1.3.** Establish an LCB-wide climate watch platform with a focus on analysing and sharing climate information as a decision support tool [build on the data collected under AA 1.1],
- ▶ **Action 4.1.4.** Put in place a system to monitor the outbreak and spread of zoonoses.

#### **Action Area 4.2. Strengthening the resilience of production systems:**

- ▶ **Action 4.2.1.** Promote the diversification of production systems (contribute to mitigating efforts: green manure; alternative energy such as wind pumping, solar energy; eco-farms, and integrated community farms),
- ▶ **Action 4.2.2.** Promote water management in agriculture (irrigation),
- ▶ **Action 4.2.3.** Support the collection and storage of rainwater,
- ▶ **Action 4.2.4.** Encourage the conjunctive use of rain, surface, and groundwater resources in agriculture as an adaptation measure to climate variability,
- ▶ **Action 4.2.5.** Support the sustainable management of oasian cuvettes (Northern section of the Lake Chad watershed basin) and of their diversified production systems.

#### **Action Area 4.3. Strengthening the resilience of ecosystems:**

- ▶ **Action 4.3.1.** Conduct studies on ecosystem water needs and contribute to defining related environmental flows,
- ▶ **Action 4.3.2.** Implement management mechanisms for hydraulic infrastructure and water abstractions that allow for environmental flows, especially for sensitive ecosystems.

#### **Action Area 4.4. Designing and implementing special protection measures for vulnerable groups:**

- ▶ **Action 4.4.1.** Design and implement social safety nets for the most vulnerable groups,
- ▶ **Action 4.4.2.** Improve access to land and strengthen land tenure security for disadvantaged groups,
- ▶ **Action 4.4.3.** Establish income-generating initiatives for women, youth, and vulnerable groups, while opening up markets to producers.

#### **Action Area 4.5. Developing and updating the disaster warning and response plan and, in particular, its component on extreme climate events (e.g., severe floods):**

- ▶ **Action 4.5.1.** Develop and update a disaster warning and response system and, in particular, a system against extreme climate events, taking into account studies on climate evolutions,
- ▶ **Action 4.5.2.** Ensure the effective implementation of the flood warning and disaster response plan (taking into account flood risks).

**CROSS-CUTTING OBJECTIVE (OBJECTIVE 5) Create an enabling governance framework to implement the SAP effectively**

The Cross-Cutting Objective -- Objective 5 -- responds to the recommendations made by the 2018 TDA to take into account, during the SAP process, the following cross-cutting issues: weak governance framework, lack of knowledge in key areas related to the environment, the lack of capacities at all levels, the context of violence and insecurity in and around the lake, and the lack of adequate consideration of the gender dimension. In response to this recommendation, this SAP defines five Action Areas, specifically on the operationalization of the Water Charter, the popularization of the

principles related to the management of shared freshwater resources, the contribution to the fight against violence and insecurity in the basin, on the need for greater consideration for the gender dimension, and on capacity building at basin, national and local levels.

#### **Action Area 5.1. Promoting, operationalising, and effectively implementing relevant provisions of the Lake Chad Water Charter:**

Adopted in 2012, the Water Charter covers most of the areas of concern of the SAP and contributes to the achievement of Vision 2037. However, much remains to be done to ensure its effective implementation. Special attention needs to be placed on the operationalization of the most relevant provisions of the Charter on raising the awareness of key stakeholders at national and local levels. States must also take into account the provisions of the Charter in national policies and regulations.

- ▶ **Action 5.1.1.** Support the dissemination of the Charter, including as needed, its translation into national languages,
- ▶ **Action 5.1.2.** Support Member States in updating and aligning their national legal and regulatory frameworks to the provisions of the Charter,
- ▶ **Action 5.1.3.** Support the development and implementation of pilot experiments of provisions of the Charter (e.g., “user-pays” and “polluter-pays” principles, etc.),
- ▶ **Action 5.1.4.** Capitalise on the experiences of implementing provisions of the Charter and engage in an inclusive dialogue on lessons learned.

#### **Action Area 5.2. Promoting, and popularising relevant provisions of international water conventions - Water Convention (Helsinki, 1992) and Watercourses Convention (New York, 1997)**

International conventions on water - the 1997 convention on the law of non-navigational uses of international watercourses and the 1992 convention on the protection and use of transboundary watercourses and international lakes - have the same objectives as the Water Charter. They inspired to a considerable extent, water charters that were developed during the last two decades in river basins of Central and West Africa (Lake Chad and the Niger, Volta, and Senegal rivers). These two conventions came into force in 2014 and 1996, respectively. While three Member States (Niger, Nigeria, and Chad) are parties to the New York Convention, only two (Chad and Cameroon) have so far joined the Helsinki Convention (See table below).

**Table 2: LCBC Member States that are part of the 1997 New York Convention and 1992 Helsinki Convention**

	Date of ratification/accession	
	1997 New York Convention	1992 Helsinki Convention
Cameroon		Accession: 1 November 2022
Niger	Accession 20 February 2013	
Nigeria	Ratification 27 September 2010	
CAR		
Chad	Accession 26 September 2012	Accession: 22 February, 2018

Source: United Nations-Depositary of Treaties Convention de New York 1997; 1992 Helsinki Convention (consulted on 9/10/2022)

The two major international water conventions - the 1997 convention on the law of non-navigational uses of international watercourses and the 1992 convention on the protection and use of transboundary watercourses and international lakes -- have to a large extent inspired the water charters that have been developed over the past two decades in the river basins of Central and West Africa (lake Chad, Niger, Volta and Senegal river basins). Three of LCBC member countries (Niger, Nigeria and Chad) are parties to the New York Convention while two (Chad and Cameroon) have for the moment adhered to the Helsinki Convention.

- ▶ **Action 5.2.1.** Support initiatives aimed at disseminating international conventions on water (Helsinki 1992 and New York 1997),

- ▶ **Action 5.2.2.** Conduct awareness-raising activities and advocate for the ratification of water conventions by LCBC Member States,
- ▶ **Action 5.2.3.** Support the national and regional implementation of relevant provisions of international water conventions.

#### **Action Area 5.3. Promoting inclusive and equitable management of shared resources and strengthening capacity in the field of hydro-diplomacy to contribute to the return of sustainable peace:**

The context of insecurity and violence that the Lake Chad region has been experiencing for the past twenty years remains a major constraint to the protection and sustainable management of the basin's water and associated resources and of its environment in general. In addition to the presence of armed groups, factors such as demographic pressure and the scarcity and degradation of natural resources accentuate competition and the risk of conflict at all levels: between neighbouring communities, between States, etc. On the other hand, as shared resources, the lake and its tributaries offer insufficiently explored opportunities for cooperation.

- ▶ **Action 5.3.1.** Conduct a study on identifying areas at risk of transboundary conflict,
- ▶ **Action 5.3.2.** Develop LCBC capacities in preventing and resolving transboundary resource utilisation conflicts,
- ▶ **Action 5.3.3.** Foster and create opportunities for dialogue and transboundary cooperation between local administrative units and local communities,
- ▶ **Action 5.3.4.** Promote jointly conceived major inter-state hydraulic and hydroelectric projects (common projects or projects of common interest),
- ▶ **Action 5.3.5.** Promote the benefit-sharing approach in the LCB and future inter-state investment projects - Water Charter, Chapter 12 (Article 76),
- ▶ **Action 5.3.6.** Strengthen the capacity of LCBC and Member States in hydro-diplomacy in the LCB.

#### **Action Area 5.4. Ensuring gender mainstreaming and strengthening the role of women in protecting and sustainably using LCB resources**

Women play a leading role in the management and use of the natural resources of the basin: water, forests, fauna and flora, agricultural potential, fishing, etc. They are therefore disproportionately exposed to the impacts of basin resource degradation – unavailability, high variability and declining quality of water resources; deforestation (access to firewood, non-timber forest products, etc.); ecosystem degradation and loss of biodiversity; etc.

- ▶ **Action 5.4.1.** Ensure that the need for disaggregated data collection is reflected in the LCB and Member State programmes,
- ▶ **Action 5.4.2.** Launch programmes to develop/valorise and sustainably use local natural resources for women and young people as a priority,
- ▶ **Action 5.4.3.** Support information and awareness-raising activities for women in preventing and managing water-borne diseases, household waste management, etc.

#### **Action Area 5.5. Strengthening LCBC's level of preparedness for the effective implementation of the SAP**

- ▶ **Action 5.5.1.** Develop and implement a communication and funding mobilisation plan for the SAP,
- ▶ **Action 5.5.2.** Develop and implement a monitoring and evaluation system for the SAP and support the establishment and implementation of the LCBC Information System (LIS),
- ▶ **Action 5.5.3.** Support the implementation of relevant recommendations of the recently completed organisational and institutional audit,
- ▶ **Action 5.5.4.** Strengthen the capacity of LCBC and Member State experts in formulating bankable projects for innovative funding (climate funds, mixed funding, etc.),
- ▶ **Action 5.5.5.** Strengthen the technical capacity and operational resources of LCBC for the effective implementation of the SAP.



## 04. FINANCING AND IMPLEMENTATION MODALITIES OF THE SAP

### 4.1. Potential funding sources for the SAP

As part of efforts to mobilise funding for the SAP, the following avenues will be explored:

- a. Inclusion of the SAP in the development of new projects promoted by LCBC's traditional development partners,
- b. Inclusion of SAP activities in other LCBC planning documents,
- c. Partial funding opportunity for the SAP as part of strategies and programmes implemented by riparian States and their partners in national portions of the Basin,
- d. Diversifying partnerships for the mobilization of financing and the implementation of the SAP:
  - ▶ Strengthening collaboration with technical partners such as FAO, UNESCO, IUCN, GWP and other financial partners such as the African Water Facility (AWF/AfDB) and CIWA (World Bank);
  - ▶ Strategic partnerships to be explored with the Regional Economic Commissions (RECs): ECOWAS and WAEMU (for West Africa) and ECCAS and CEMAC for Central Africa
  - ▶ Alliances to consider with AMCOW and the African Network of Basin Organizations (ANBO) – LCBC being a member of this network.
- e. Establishment of a trust fund or a foundation dedicated to financing the conservation and sustainable management of water and the environment of the Lake Chad basin. A feasibility study will be carried out prior to the establishment of this fund.

### 4.2. Basic Principles of the SAP Implementation

The following basic principles will oversee the implementation of the SAP:

- i. The implementation of the SAP complements the development activities of Member States. The SAP does not replace but complements the efforts by LCBC Member States in the area of conservation and efficient and sustainable management of the environment and the resources of the Lake Chad Basin. The SAP emphasizes the transboundary dimension.
- ii. The SAP as well as the TDA are decision-making tools at the disposal of LCBC and its Member States. The TDA and SAP are diagnostic and planning tools for transboundary water and environmental management.
- iii. The implementation of the SAP is the co-responsibility of basin stakeholders. The SAP implementation is envisaged based on the principle of distributed responsibility, while LCBC assumes the leading role of coordinating the delivery of the strategy:

At the basin level, the SAP is one of the links in the LCBC planning cycle and, to this end, benefits from the mechanisms already in place, particularly in the area of coordination between strategies, programs and projects – particularly relating to adaptation to climate change, the fight against sand encroachment, and monitoring-evaluation, the development of pastoral areas and the management of fisheries.

At the national level, each of the Member States is responsible for contributing to the implementation of the relevant local components of the SAP, while not losing sight of the transboundary dimension of the solutions recommended by the SAP. It is expected that each member country develops an action plan to contribute to the implementation of the SAP.

#### **4.3. Monitoring and Evaluation of the SAP**

As part of its role of coordinating the implementation of the SAP, the LCBC is also responsible for the monitoring and periodic evaluation of the SAP. The principle adopted is to use, as much as possible, the relevant indicators of the SDGs and the AMCOW's WASSMO platform – indicators for which there are systems already in place for the regular collection of information to report on the progress made.

The LCBC will have to collaborate with the Member States (which periodically provide the needed information for tracking the above-mentioned indicators) in order to have access to disaggregated data at the level of territorial units in the national portions of the basin: States for Nigeria, Regions for Cameroon and Niger, Provinces for Chad and Prefectures for CAR.

A SAP monitoring committee will be set up at the LCBC. It will bring together the Commissioners of the Member States, the technical committees of experts, the focal points and the country monitoring and evaluation professionals and LCBC experts. Regarding the evaluation of the SAP, it is planned to have an external evaluation one year before the end of the first and second five-year action plans, therefore in 2026 and 2032. A final evaluation will be carried out one year before the end of the period covered by the strategy, therefore in 2036. Its results as well as the results of the updated TDA will be used for the preparation of the SAP for the following period.

## Appendix 1: 2023-2027 Five-Year Action Plan

EQO 1 Integrated, efficient, and sustainable management of fresh surface, ground, and rainwater resources to meet the growing and competing needs of states, sectors, and users, including ecosystems						
Action Area	Action	Timeline				
		Year 1	Year 2	Year 3	Year 4	Year 5
AA 1.1. Improving knowledge of water resources	A1.1.1. Establish a regular quality and quantity water resources monitoring mechanism					
	A1.1.2. Promote sharing/disseminating of the outcomes of the regular monitoring of the quality and quantity water resources					
AA 1.2. Improving water availability	A1.2.1. Ensure water supply/generation/production					
	A1.2.2. Ensure the management of water demand/needs in order to reduce the pressure on water resources					
	A1.2.3. Support further in-depth review of inter-basin transfer options for the Lake Chad Basin hydro-system					
AA 1.3. Mitigating/controlling the variability in rainwater, groundwater, and surface water regimes	A1.3.1. Design and implement water control investment programmes					
	A1.3.2. Increase water retention capacity of soils					
AA 1.4. Controlling water quality degradation	A1.4.1. Conserve and sustainably manage ecosystems/wetlands as natural water purification infrastructure					
	A1.4.2. Strengthen control of water pollution/contamination from mining areas, industrial units, and human settlements					
	A1.4.3. Improve agricultural drainage systems and promote organic farming to mitigate water pollution from agricultural chemical inputs					
	A1.4.4. Control water pollution by discharges of polluted/contaminated water from fishing vessels/boats and inland waterway transport					
	A1.4.5. Control water pollution caused by domestic waste discharges (solid and liquid)					
	A1.4.6. Control water pollution/eutrophication related to the proliferation of invasive aquatic plants					
	A1.4.7. Promote best practices of community-managed managed sanitation (community-led total sanitation)					
AA 1.5. Implementing innovative water governance approaches to arbitrate and align competing needs	A1.5.1. Promote integrated water resources management (IWRM) to align competing demands between sectors and uses					
	A1.5.2. Promote the Water-Food-Energy-Ecosystem Nexus approach to enhance water resource allocation between competing sectors					
	A1.5.3. Organise stakeholder forums in the management of sub-basins and their natural resources					

**EQO 2 Conservation of biodiversity through the restoring and sustainable management of ecosystems and, in particular, sensitive habitats for the protection and survival of endangered and endemic species in the Basin**

Action Area	Action	Timeline				
		Year 1	Year 2	Year 3	Year 4	Year 5
<b>AA 2.1.</b> Improving the knowledge of endemic and/or endangered species	<b>A2.1.1</b> Carry out annual inventories and ecological monitoring of the dynamics of animal, bird, and plant species					
	<b>A2.1.2</b> Establish and disseminate the status of critical animal, bird, and plant species					
	<b>A2.1.3.</b> Identify endemic and endangered species in the LCB (listed on the IUCN Red List)					
	<b>A2.1.4</b> Conduct targeted studies on the behaviour and habitats of endangered species					
	<b>A2.1.5</b> Implement protection programmes for critically endangered species based on the outcomes of targeted studies on these species					
<b>AA 2.2.</b> Rehabilitating/conserving and sustainably managing ecosystems with high biodiversity value	<b>A2.2.1</b> Assess biodiversity and ecosystem services of main biotopes in the LCB					
	<b>A2.2.2</b> Designate high-value biodiversity ecosystems as protected areas					
	<b>A2.2.3</b> Enhance the protection/sustainable management of protected areas, parks and Ramsar sites					
	<b>A2.2.4</b> Secure wildlife corridors					
	<b>A2.2.5</b> Restore degraded landscapes (rehabilitate areas damaged by poor land management practices, rehabilitate groves, etc.)					
	<b>A2.2.6</b> Promote reforestation (in collaboration with the Green Wall)					
	<b>A2.2.7</b> Limit the expansion of agro-pastoral lands: intensive agriculture and breeding					
	<b>A2.2.8</b> Support bush fire control activities, with emphasis on agriculture (slash and burn), livestock (early fires), hunting, etc.					
	<b>A2.2.9</b> Support poaching control interventions					
	<b>A2.2.10</b> Prevent illegal trade in endangered plant and wildlife species (by implementing the Convention on International Trade in Endangered Species (CITES))					
<b>AA 2.3.</b> Supporting the protection and sustainable management of Ramsar sites	<b>A2.3.1</b> Conduct studies on required environmental flows, considering the roles of wetlands in the Basin					
	<b>A2.3.2</b> Support the creation of a biosphere reserve in the Lake Chad Basin, connecting and strengthening the management of Ramsar sites in the Basin					
	<b>A2.3.3</b> Support the drafting, funding, and implementation of the LCB biosphere reserve management plan					
<b>AA 2.4.</b> Protecting and managing fish fauna sustainably	<b>A2.4.1</b> Study fish fauna of the Lake and its tributaries					
	<b>A2.4.2.</b> Identify and protect fish spawning grounds/reproduction areas					
	<b>A2.4.3.</b> Promote sustainable fishing techniques and control all forms of "ecocidal" fishing practices and methods					
	<b>A2.4.4.</b> Identify and implement special protection measures for endangered aquatic species					
	<b>A2.4.5.</b> Adopt and implement the principle of periodic biological rest periods					
<b>AA 2.5.</b> Controlling invasive species and promoting their economic value:	<b>A2.4.6.</b> Support the harmonisation of fisheries regulations (water bodies and tributaries of the Lake)					
	<b>A2.5.1</b> Carry out the inventory of the presence, spatial distribution, and evolution of invasive species (plant and animal)					
	<b>A2.5.2</b> Launch an emergency mechanical control programme (dredging, mowing, manual cutting of the grass, etc.), targeting priority navigation channels, irrigation channels, lake feeder channels from tributaries, oasian cuvettes, etc.					
	<b>A2.5.3</b> Support sustained mechanical and biological control for all areas colonised by invasive species					
	<b>A2.5.4</b> Establish a monitoring and warning system to address the risk of invasive and proliferating species					
<b>AA 2.6.</b> Mitigating pressure on ecosystems and threats to biodiversity by improving access to alternative income sources and practices:	<b>A2.5.5</b> Promote the economic viability of invasive species (biomass for energy production; or as building material, agricultural composting, etc.)					
	<b>A2.6.1</b> Promote fish farming					
	<b>A2.6.2.</b> Promote wood energy-saving techniques and technologies (e.g., improved stoves)					
	<b>A2.6.3.</b> Promote alternative sources of energy (e.g., biomass from crop residues or proliferating aquatic species, solar energy, wind energy, butane gas as a substitute for firewood or charcoal)					
	<b>A2.6.4.</b> Promote income-generating initiatives for women and youth					

**EQO 3** Decrease and, in some areas, reverse silting and sedimentation such that they are no longer a significant obstacle to the development of productive activities, human and animal health, and ecosystems in the Lake and its tributaries

Action Area	Action	Timeline				
		Year 1	Year 2	Year 3	Year 4	Year 5
<b>AA 3.1.</b> Reversing, controlling or reducing sedimentation of water bodies of the Lake and its tributaries	<b>A3.1.1.</b> Rehabilitate and protect headwaters of the tributaries of Lake Chad					
	<b>A3.1.2.</b> Integrated anti-erosion management of various catchments of the Chalawa Gorge Dam in Kano-North Nigeria (Studi, 2015)					
	<b>A3.1.3.</b> Undertake targeted bank stabilisation initiatives for the Logone and the Maga Lake weir (Studi, 2015)					
	<b>A3.1.4.</b> Control the obstruction by invasive plants of channels and tributaries that supply water to the Lake					
<b>AA 3.2.</b> Reversing, controlling or reducing silting in the river system and throughout the active Lake Basin	<b>A3.2.1.</b> Carry out dune stabilisation and planting of windbreaks					
	<b>A3.2.2.</b> Initiate activities to desilt waterways and road networks, rivers, and lakes					
<b>AA 3.3</b> Targeted dredging of portions of the Lake and tributaries to improve filling and navigability conditions of the Lake and tributaries	<b>A3.3.1.</b> Map reaches and areas of the Lake for targeted dredging activities					
	<b>A3.3.2.</b> Conduct dredging in identified priority sites					
<b>AA 3.4.</b> Promoting agropastoral practices based on efficient land and water management techniques	<b>A3.4.1.</b> integration of agriculture, livestock and forestry					
	<b>A3.4.2.</b> Promote integrated land and water management practices					
<b>AA 3.5.</b> Promoting reforestation/ revegetation of lands in the Lake Chad basin	<b>A3.5.1</b> Support reforestation campaigns throughout the Basin in partnership with the Great Green Wall Initiative					
	<b>A3.5.2</b> Promote deferred grazing and natural regeneration initiatives					
	<b>A3.5.3</b> Support bush fire control activities					

**EQO 4 Reduce the vulnerability and strengthen the resilience of human and animal populations, production systems and ecosystems in the light of variability and climate change**

Action Area	Action	Timeline				
		Year 1	Year 2	Year 3	Year 4	Year 5
<b>AA 4.1.</b> Knowledge of climate developments and identifying areas of vulnerability to climate change	<b>A4.1.1</b> Conduct studies on climate change scenarios in the Lake Basin					
	<b>A4.1.2.</b> Identify areas, ecosystems, productive systems, and groups most vulnerable to variability and climate change					
	<b>A4.1.3</b> Establish an LCB-wide climate watch platform with a focus on analysing and sharing climate information as a decision support tool [build on the data collected under DA 1.1].					
	<b>A4.1.4</b> Put in place a system to monitor the outbreak and spread of zoonoses					
<b>AA 4.2.</b> Strengthening the resilience of production systems	<b>A4.2.1.</b> Promote diversification of production systems (contribute to mitigating efforts: green manure; alternative energy in wind pumping, solar, eco-farms, and integrated community farms)					
	<b>A4.2.2.</b> Promote water management in agriculture (irrigation)					
	<b>A4.2.3.</b> Support the collection and storage of rainwater					
	<b>A4.2.4.</b> Encourage the conjunctive use of rain, surface, and groundwater resources in agriculture as an adaptation measure to climate variability					
	<b>A4.2.5.</b> Support the sustainable management of oasian cuvettes (Northern section of the Lake Chad watershed basin) and their diversified production systems					
<b>AA 4.3.</b> Strengthening the resilience of ecosystems	<b>A4.3.1</b> Conduct studies on ecosystem water need and contribute to defining related environmental flows					
	<b>A4.3.2</b> Implement management mechanisms for hydraulic infrastructure and water abstractions that allow for environmental flow, especially for sensitive ecosystems					
<b>AA 4.4.</b> Designing and implementing special protection measures for vulnerable groups	<b>A4.4.1</b> Design and implement social safety nets for the most vulnerable groups					
	<b>A4.4.2</b> Improve access to land and strengthen land tenure security for disadvantaged groups					
	<b>A4.4.3</b> Establish income-generating initiatives for women, youth, and vulnerable groups while opening up markets to producers					

#### EQO 4 Reduce the vulnerability and strengthen the resilience of human and animal populations, production systems and ecosystems in the light of variability and climate change

**AA 4.5.** Developing and updating the disaster warning and response plan and, in particular, its component on extreme climate events (e.g., severe floods)

**A4.5.1** Develop and update a disaster warning and response system and, in particular, a system against extreme climate events, taking into account studies on climate evolutions.

**A4.5.2** Ensure the effective implementation of the flood warning and disaster response plan (taking into account flood risks)


#### OBJ-5 (CC) Creating an enabling governance framework to implement the SAP effectively

Action Area	Action	Timeline				
		Year 1	Year 2	Year 3	Year 4	Year 5
<b>AA5.1.</b> Promoting, operationalising, and effectively implementing relevant provisions of the Lake Chad Basin Water Charter	<b>A5.1.1</b> Support the dissemination of the Charter, including, as needed, its translation into national languages					
	<b>A5.1.2</b> Support Member States in updating and aligning their national legal and regulatory frameworks to the provisions of the Charter					
	<b>A5.1.3</b> Support the development and implementation of pilot experiments of provisions of the Charter (e.g., "Abstractor-Pays," "PolluterPays," etc.)					
	<b>A5.1.4</b> Capitalise on the experiences of implementing provisions of the Charter and engage in an inclusive dialogue on lessons learned					
<b>AA 5.2.</b> Promoting and popularising relevant provisions of international water conventions - Water Convention (Helsinki, 1992) and Watercourses Convention (New York, 1997)	<b>A5.2.1</b> Support initiatives aimed at disseminating international conventions on water (Helsinki 1992 and New York 1997)					
	<b>A5.2.2</b> Conduct awareness-raising activities and advocate for the ratification of water conventions by LCBC Member States					
	<b>A5.2.3</b> Support the national and regional implementation of relevant provisions of international water conventions					
<b>AA 5.3.</b> Promoting inclusive and equitable management of shared resources and strengthening capacity in the field of hydrodiplomacy to contribute to the return of sustainable peace.	<b>A5.3.1</b> Conduct a study on identifying areas at risk of transboundary conflict					
	<b>A5.3.2</b> Develop LCBC capacities in preventing and resolving transboundary resource utilisation conflicts					
	<b>A5.3.3</b> Foster and create opportunities for dialogue and transboundary cooperation between local administrative units and local communities					
	<b>A5.3.4</b> Promote joint inter-state hydraulic and major hydroelectric projects (common facilities or facilities of common interest) - Water Charter, Chapter 11					
	<b>A5.3.5</b> Promote the benefit-sharing approach in the LCB and future inter-state investment projects - Water Charter, Chapter 12 (Article 76)					
	<b>A5.3.6</b> Strengthen the capacity of LCBC and Member States in hydro-diplomacy in the LCB					
<b>AA 5.4.</b> Ensuring gender mainstreaming and strengthening the role of women in protecting and sustainably using LCB resources	<b>A5.4.1</b> Ensure that the need for disaggregated data collection is reflected in the LCB and Member State programmes					
	<b>A5.4.2</b> Initiate popularisation programmes and sustainably use local natural resources for women and young people as a priority					
	<b>A5.4.3</b> Support information and awareness-raising activities for women in preventing and managing water-borne diseases, household waste management, etc.					
<b>AA 5.5.</b> Strengthening LCBC's level of preparedness for the effective implementation of the SAP	<b>A5.5.1</b> Develop and implement a communication and funding mobilisation plan for the SAP					
	<b>A5.5.2</b> Develop and implement a monitoring and evaluation system for the SAP and support the establishment and implementation of the LCBC information system					
	<b>A5.5.3</b> Implement relevant recommendations of the recently completed organisational and institutional audit					
	<b>A5.5.4</b> Strengthen the capacity of LCBC and Member State experts in formulating bankable projects for innovative funding (climate funds, mixed funding, etc.)					
	<b>A5.5.5</b> Strengthen the technical capacity and operational resources of LCBC for the effective implementation of the SAP					

