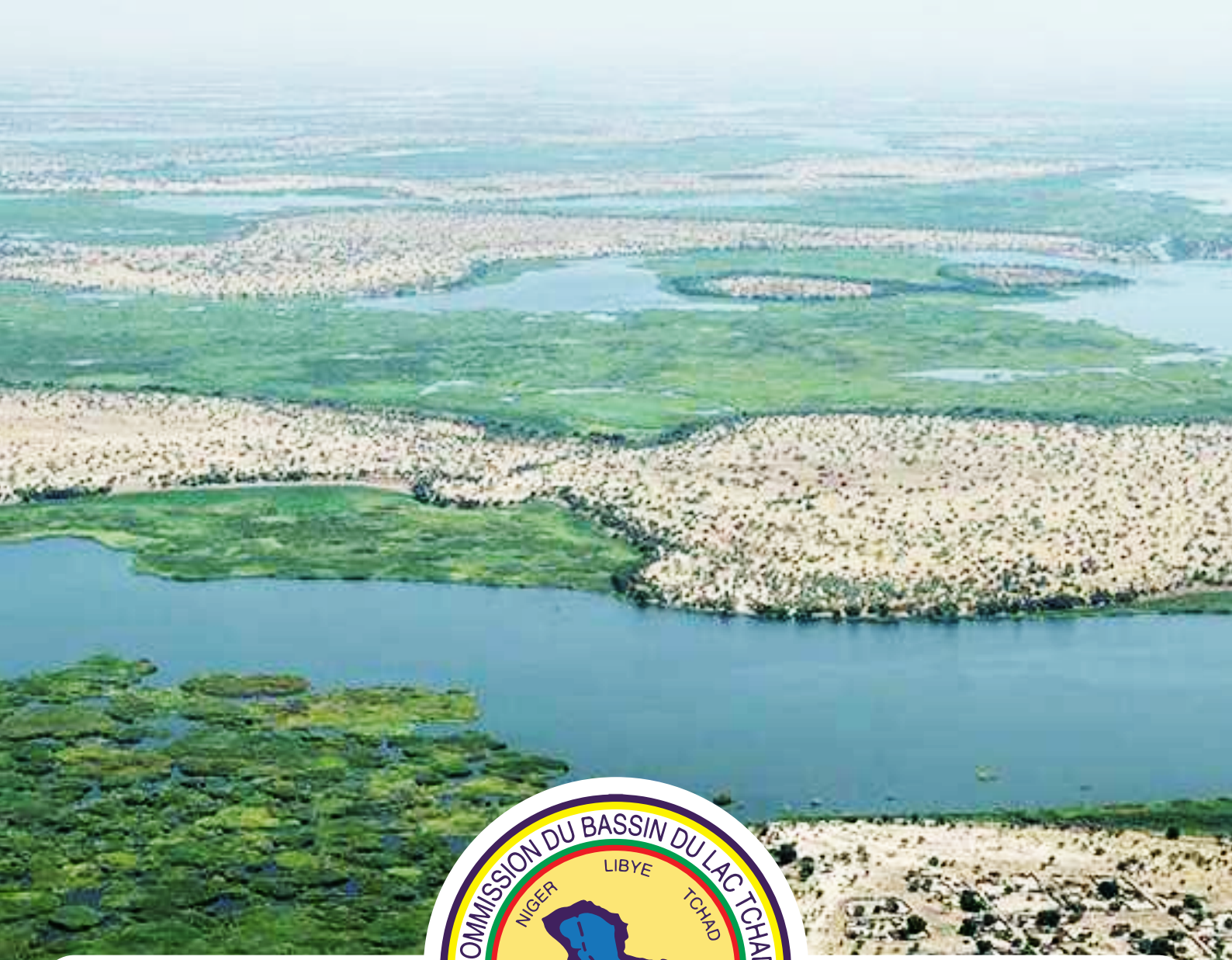

# Lake Chad Basin Strategic Action Programme (SAP)

## For The Reversal of Land and Water Degradation Trends in The Lake Chad Basin Ecosystems

# Lake Chad Basin Strategic Action Programme (SAP) 2023-2037

## For The Reversal of Land and Water Degradation Trends in The Lake Chad Basin Ecosystems

ADOPTED IN 2022 BY THE 16TH SUMMIT OF HEADS OF STATE AND GOVERNMENT OF THE LAKE CHAD BASIN COMMISSION MEMBER COUNTRIES

With contributions:

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## List of Acronyms

| | |
|---|---|
| **AA** | Action Area |
| **AfDB** | African Development Bank |
| **AFROSAI** | African Organization of Supreme Audit Institutions |
| **AMCOW** | African Ministers' Council on Water |
| **ANBO** | African Network of Basin Organizations |
| **AWF** | African Water Facility |
| **AWRM-LCB** | Applied Water Resources Management in the Lake Chad Basin |
| **BIOPALT** | Lake Chad Biosphere and Heritage Project |
| **BMZ** | Federal Ministry for Economic Cooperation and Development |
| **CAR** | Central African Republic |
| **CBD** | Convention on Biological Diversity |
| **CBDA** | Chad Basin Development Authority |
| **CEMAC** | Central African Economic and Monetary Community |
| **CITES** | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| **CIWA** | Cooperation in International Waters in Africa |
| **ECCAS** | Economic Community of Central African States |
| **ECOWAS** | Economic Community of West African States |
| **EQO** | Environmental Quality Objectives |
| **EU** | European Union |
| **FAO** | United Nations Food and Agriculture Organization |
| **FDA** | French Development Agency |
| **FMWR** | Federal Ministry of Water Resources (Nigeria) |
| **GAIN** | Global Adaptation Initiative |
| **GEF** | Global Environment Facility |
| **GIWA** | Global International Water Assessment |
| **GIZ** | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| **GWP** | Global Water Partnership |
| **HJKYB-TF** | Hadejia Jama'are Komadugu Yobe Basin - Trust Fund |
| **HJRBDA** | Hadejia-Jama'are River Basin Development Authority (Nigeria) |
| **IRD** | Institute for Development Research |
| **IUCN** | International Union for the Conservation of Nature and Natural Resources |
| **LCB** | Lake Chad Basin |
| **LCBC** | Lake Chad Basin Commission |
| **LCB-NREE** | Lake Chad Basin Regional Program for the Conservation and Sustainable Use of Natural Resources and Energy Efficiency |
| **LIS** | Lake Chad Basin Information System |
| **NGO** | Non-Governmental Organisation |
| **PAIBLT** | Support Project of the Lake Chad Basin Initiative to reduce Vulnerability and Risks related to STI/HIV/AIDS |
| **PARSEBALT** | Project to Support the Socio-Economic Reintegration of Vulnerable Groups in the Lake Chad Basin |
| **PDA-CCLT** | Development and Adaptation Plan for Climate Change in Lake Chad |
| **PRD-EN** | Regional Development Plan for the Far North Region (Cameroon) |
| **PRESIBALT** | Programme for the Rehabilitation and Strengthening of the Resilience of Socio-ecological Systems in the Lake Chad Basin |
| **PRODEBALT** | Sustainable Development Programme of the Lake Chad Basin |
| **PROLAC** | Lake Chad Region Recovery and Development Project |
| **PTEP** | Priority Transboundary Environmental Problem |
| **PURDEP** | Emergency Development Programme for Youth and Vulnerable Groups in the Lake Chad Region |
| **REC** | Regional Economic Commission |
| **RSS** | Regional Strategy for the Stabilisation, Recovery and Resilience of Boko-Haram affected Areas of the Lake Chad Basin Region |
| **SAP** | Strategic Action Programme |
| **SDG** | Sustainable Development Goals |
| **TDA** | Transboundary Diagnostic Analysis |
| **UNDP** | United Nations Development Programme |
| **UNEP** | United Nations Environment Programme |
| **UNESCO** | United Nations Educational, Scientific and Cultural Organization |
| **WAEMU** | West African Economic and Monetary Union |
| **WASSMO** | Water and Sanitation Sector Monitoring and Reporting System |
| **WB** | World Bank |

## SUMMARY

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.

## INTRODUCTION

The Lake Chad Basin (LCBC) was established in 1964 and has the following Member States: Cameroon, Niger, Nigeria, Chad, Central African Republic (CAR), and Libya. The mandate of LCBC includes:

i. Manage in a sustainable and equitable manner Lake Chad and other transboundary water resources of the basin,
ii. Conserve and preserve the ecosystems of the Conventional Basin; and
iii. Promote regional integration, preserve peace and security in the Conventional Basin.

Since its establishment, LCBC has grappled with increasing, more complex, and urgent challenges such as conserving and managing resources in the basin. As such, LCBC needs efficient and adapted tools to address the emerging challenges of conservation and sustainable management of water and related resources in the Lake Chad Basin. LCBC, therefore,

needs effective and suitable tools to address the emerging challenges of conservation and sustainable management of water and related resources in the Lake Chad Basin.

The Strategic Action Programme (SAP) is a tool developed for basin organisations to formulate and implement solutions to priority environmental problems previously identified in the TDA. The TDA and SAP are complementary planning and decision-making tools developed under the GEF.

The Lake Chad Basin is one of the first transboundary river/lake basins where the TDA and SAP were evaluated. The documents were evaluated in a case study on Lake Chad, conducted by the United Nations Environment Programme (UNEP) and GEF as part of regional assessments of the Global International Waters Assessments (GIWA) Programme. The study was published in 2004 and comprised an innovative causal chain analysis of critical transboundary problems.

Drawing from the GIWA study, the Lake Chad Basin was provided with a formal Transboundary Diagnostic Analysis[1] in 2005 as part of the project: "Reversal of Land and Water Degradation Trends in the Lake Chad Basin Ecosystem", funded by GEF and implemented by the United Nations Development Programme (UNDP). Subsequently, a Strategic Action Programme[2] was developed and adopted in 2008 as part of the same project.

The adoption of Vision 2025, the Water Charter (2012) and the worsening hydro-climatic, ecological, and security situation required an update of the TDA. The updated version of the 2018 TDA[3] was completed in 2018. It equally considers available quality data, particularly through peer-review studies conducted in the Basin by the French Institute of Research for Development (IRD).

Given that the 2018 TDA is based on an update from its 2005 version, this SAP is also a revised version of its 2008 version based on priority areas identified in the 2018 TDA while considering the progress made in addressing these issues.

The SAP is structured as follows: section one presents an overview of the Basin and the main socio-environmental challenges it faces considering the findings of the 2018 TDA. Section two outlines the agreed vision by basin stakeholders and Environmental Quality Objectives (EQOs) that support the Vision. Each EQO is a response to one of the transboundary priority problems identified in the TDA. Section three describes the Action Areas and recommended Actions to achieve the EQOs. Section four presents the budget and explains the resource mobilisation strategy. Section five discusses the principles and implementation of the SAP. The Action Plan to implement the first five-year of the SAP (2023-2027) is annexed herein and presented in a matrix format.

1. https://iwlearn.net/resolveuid/9470ff35bbc5e0205dc364a8322a0f36
2. https://iwlearn.net/resolveuid/478c25cd3fe3e4884e73d94dff80ca74
3. https://iwlearn.net/resolveuid/4a003f5c-d419-4438-a6f6-b0229223c7a0

# 01. Background

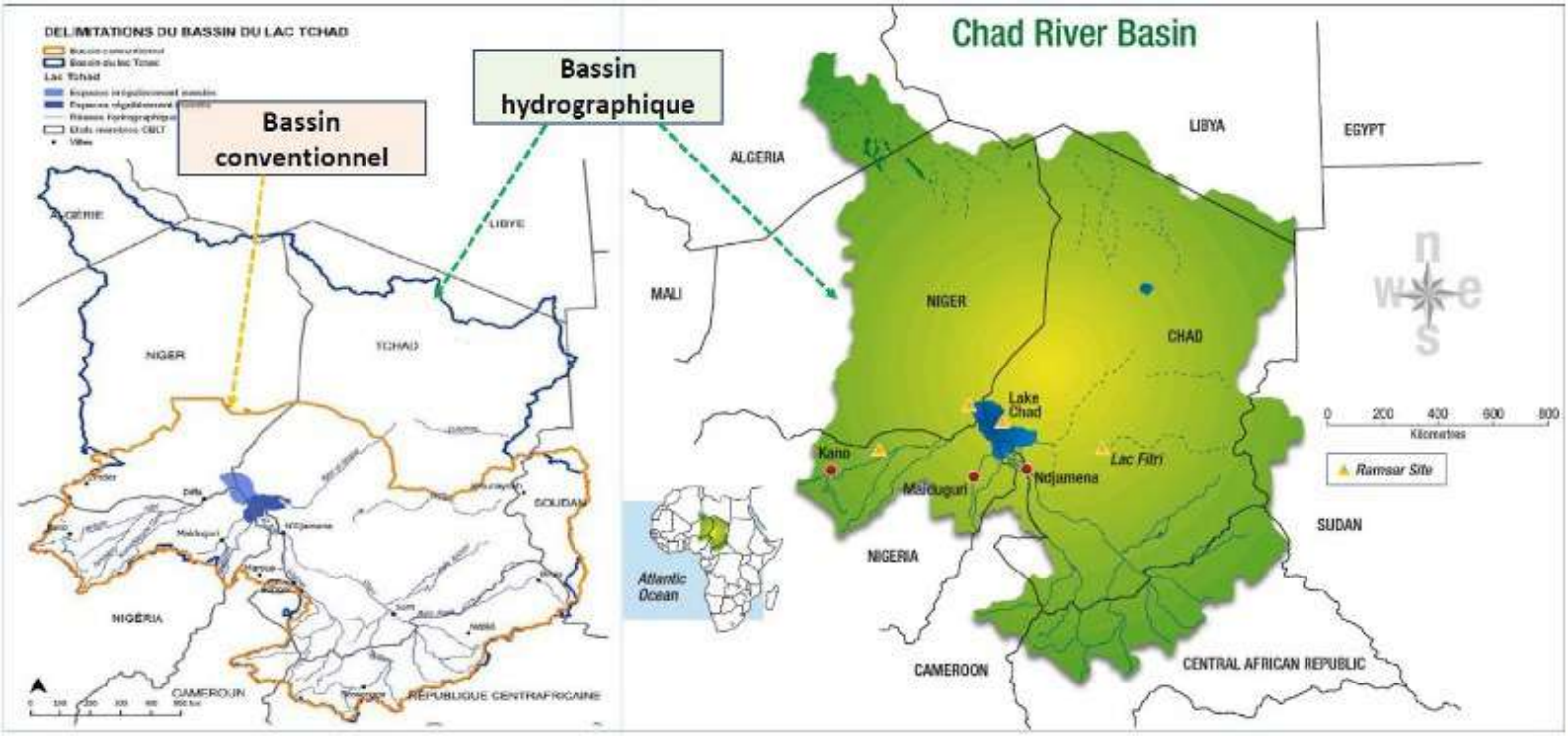



***Figure 1:*** *Hydrographic and Conventional basins of Lake Chad.*

The hydrographic basin of Lake Chad covers a surface area of 2,380,000 km² (UNEP, 2010). As for the Conventional Basin of the Lake, which is the active Basin, it spans over 984,455km² and covers part of Chad (37%), Cameron (6%), Nigeria (21%), Niger (16%), CAR (20%). Please see the map above:

Lake Chad is found between the Sahelian zone and the Sahara Desert, between the 500mm isohyets in the south and less than 200mm in the north. Thus, it is a giant oasis in a hyperarid environment. It is for this reason that this area records a high concentration of human and animal populations.

The lake's surface area varies based on annual hydro-rainfall conditions. In its medium to extensive lake configuration, the water body covers 10,000 to 25,000 km². Lake Chad is ranked the 4th largest African lake after Lakes Victoria, Tanganyika, and Malawi. It is the 1st endorheic freshwater lake in the world. Lake Chad and its tributaries are a closed hydrosystem with no outflow to external water bodies. The main tributary of Lake Chad is the Chari river, enlarged by the Logone River. The Chari-Logone catchment provides 95% of the inflow to the lake, while inflows from the Komadugu-Yobe river account for only 1% to 3% of the inflow.

An estimated 50 million people live in the hydrographic basin. Half of this population lives in the Nigerian portion of the Basin, which accounts for only 7.5% of the total basin area (UNEP, 2010).

The Lake Chad Basin is faced with several significant challenges. In recent decades, the lake's water surface shrank significantly from 25,000 km² in the early 1960s to 1,350 km² in the 1980s. It represents a loss of 90% as a result of variability and climate change. (UNEP, 2010). Today, the water surface oscillates between 8,000 and 14,000 km² based on annual rainfall conditions. The southward migration of the isohyets and the advancing desert are increasing, silting in sections of the basin. It has been worsened by intense erosion and degradation of the banks of major rivers that supply the lake (Chari-Logone, Komadugu Yobe). Invasive plants that have since colonised a large part of the lake and floodplains of the basin continue to grow year in, year out. Since the early 2000s, the Lake Chad region was at the centre of fighting between rebel groups and armed forces from its riparian countries. As such, there was a climate of insecurity and massive population displacement. The Region is facing significant challenges, such as governance and sustainable management of water and other natural resources.

The 2018 TDA reviewed all the challenges and threats in the Basin and retained 4. They were considered Priority Transboundary Environmental Problems (PTEP). The most urgent of them were discussed in the subsequent phase of the SAP development. These PTEPs include:

**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 the hydraulic capacity of the hydrographic network that supplies it; (c) the tendency for the static level of groundwater to decrease as a result of a drop in the recharge of aquifers.

**PTEP 2.** *Biodiversity Degradation:* The problem combines reduced sustainability of biodiversity resources, loss and modification of ecosystems, proliferation of invasive species, a drop in fish stocks and population, threats to rare or endemic wildlife and plant species, etc.

**PTEP 3.** *Sedimentation*: It focuses on increased silting (sediment deposits) and mudding of the lake and tributaries. It is intricately linked to wind and water-induced erosion.

**PTEP 4.** *Variability and climate change:* The TDA analysis variability and climate change as an overarching problem. It fuels other priority problems and is responsible for the depleting livelihood, social cohesion, or peaceful coexistence between communities in the Basin. Vulnerability of the Basin (physical, human, and animal environment) to the impacts of variability and climatic change is underscored.

The 2018 TDA equally suggested that the following transboundary issues be considered when developing the SAP:

a. poor governance (including the absence of adequate policies, poor implementation of the said policies, etc.),
b. inadequate knowledge of environmental issues; and
c. the need to improve capacity at all levels.

According to the 2018 TDA, these crosscutting factors act as common causes for many of the priority issues.

# 02. Vision and Strategic Objectives

### 2.1. Long-Term Vision

As a response to the challenges and threats plaguing the Lake Chad Basin, key stakeholders agreed on a shared long-term vision that highlights a positive image of the Basin. They also took the commitment to implement relevant measures aimed at achieving this dream.

Owing to the fact that the SAP is a tool that contributes as much to LCBC's Mission as other major programmes, it was therefore essential to ensure that the proposed Vision is in line with LCBC's Vision 2025 for the Basin, which is as follows: *"The Lake Chad Region would like to see by the year 2025 the Lake Chad - common heritage - and other wetlands maintained at sustainable levels to ensure the economic security of the freshwater ecosystem resources, sustained biodiversity and aquatic resources of the basin, the use of which should be equitable to serve the needs of the population of the basin thereby reducing the poverty level".*

This SAP Vision aligns with the African Union's Agenda 2063, whose Aspiration 1 aims at a *"Prosperous Africa based on inclusive growth and sustainable development", and paragraph 18, Africa shall have "equitable and sustainable" use and management of water resources for socio-economic development, regional cooperation, and the environment."*

The 2030 Agenda on Sustainable Development also inspire the SAP Vision. As a result, Lake Chad Basin Member States ratified it. Achieving the 17 SDGs of the 2030 Agenda depends on the availability, equitable and sound water resources management. Therefore, it is a central issue in the development of the Lake Chad Basin.

The SAP Vision statement, agreed upon by 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.*

### 2.2. Environmental Quality Objective (EQO)

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) |
|---|---|
| **Problem 1. variability of hydrological and hydrogeological regimes;** | **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 |
| **Problem 2. Biodiversity Degradation.** | **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 |
| **Problem 3. Sedimentation** | **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 |
| **Problem 4. Variability and climate change.** | **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 |

### 2.3. Theory of Change

The theory of change presented here briefly explains how the various objectives outlined will interact and lead to the desired change, i.e., Achieving the Vision.

Until the early 20th 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 5th century AD. Subsequently, and in particular, since the second half of the 20th 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, strong demographic growth, climate change and, for the past twenty years, generalised insecurity with the increasingly visible presence of armed groups.

While many of these factors are part of a significant trend that is difficult to reverse in the short term, it is still possible to set in motion a process to rebuild, at least partly, the grandeur and attractiveness of Lake Chad. This ambitious challenge is based on the **SAP Vision**. It consists of rehabilitating, or better still, restoring once-luxuriant natural resources and landscapes 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 essential step towards achieving the vision is to work towards the overall long-term objective. It includes sustainably improving the living conditions of the communities in the basin through integrated, efficient, and sustainable management of water resources and building the resilience of production systems and ecosystems to the impacts of climate change.

Four levers are outlined in the SAP to achieve this Vision and Overall Long-Term Objective: they include Environmental Quality Objectives (EQOs). These EQOs aim to provide an adequate solution to any of the four PTEPs identified in the 2018 TDA. Thus, as a solution to the variability in hydrological and hydrogeological regimes, the SAP recommends that to meet the growing and competing needs of states, fresh surface, ground, and rainwater resources should be integrated, efficient, and sustainably managed (EQO 1). The main concern here is ensuring sufficient volumes of adequate water are available for human and animal consumption, maintaining ecosystems and developing production activities.

Faced with the loss of plant and animal diversity-which is equally one of the four PTEPs-the SAP intends to ensure biodiversity conservation by restoring and sustainably managing ecosystems and, in particular, fragile habitats for the survival of endangered and endemic species in the Basin (EQO 2). This objective aligns with the Global Biodiversity Framework, which shall be on the agenda of COP 15, in December 2022, under the Convention on Biodiversity, and specifically under the target which aims to ensure that at least 30% of the world's land and maritime surface is conserved as protected areas by 2030 (CBD 2021). As such, significant efforts will be made to protect classified wetlands and sustainably promote the use of floodplains and combat invasive plants.

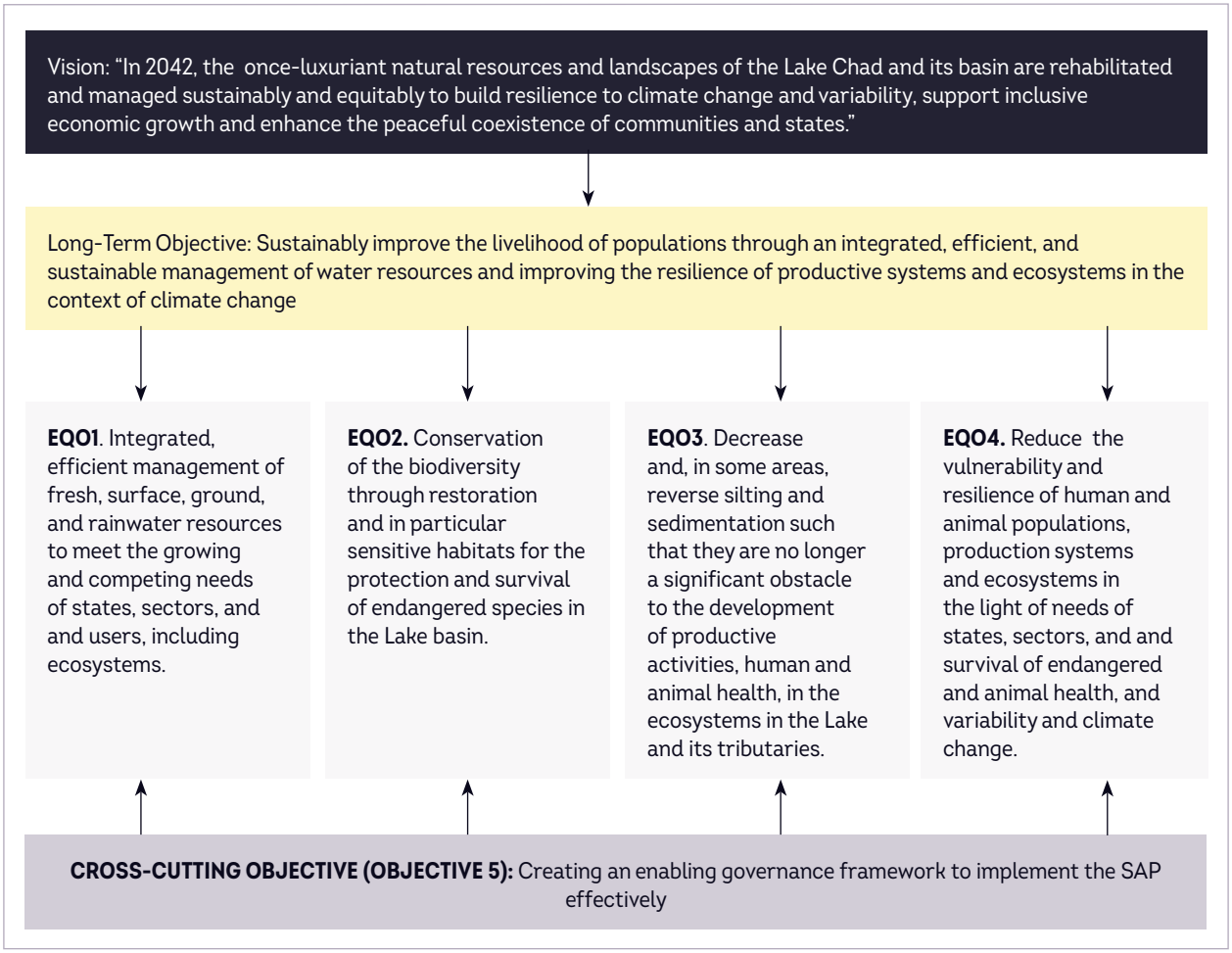
The TDA identified sedimentation, caused by accelerated water and wind erosion, as one of the major transboundary problems in the Basin. The TDA identified sedimentation, caused by accelerated water and wind erosion, as one of the major transboundary problems. The SAP does not aim to eradicate this phenomenon, which is impossible. Still, it would also not ignore that sedimentation is beneficial in some respects (such as the provision of silt that fertilises the soil). Consequently, the SAP intends to reduce and, whenever feasible and relevant, reverse silting and sedimentation such that they are no longer a significant obstacle to the development of production activities, human and animal health, and ecosystems in the Lake and its tributaries (EQO 3).

Climate variability and change play a crucial role in the degradation of the environment and natural resources, especially water. Although mitigating climate change by acting on greenhouse gas emissions is a central global concern, the SAP emphasises the need to build adaptive capacity and resilience to the manifestations and impacts of changing climate conditions. As such, EQO 4 aims to reduce the vulnerability and strengthen the resilience of human and animal populations, production systems and ecosystems in the light of variability and climate change (EQO 4).

EQOs are interdependent and act on each other. It is the case with climate variability and change, which affect resource availability and quality, ecosystem health, sedimentation, and silting processes, such as water and wind erosion amplified by extreme weather events. Addressing sedimentation frees up waterways and creates better conditions for filling up the lake and its tributaries. Ecosystems, especially wetlands, play a role in regulating flows and purifying water. With the presence of quality water, environmental preservation is upheld.

The achievement of the four EQOs and the practical implementation of the SAP requires an enabling legal and institutional environment. It is addressed through the cross-cutting objective of creating an enabling governance framework. An essential dimension of this framework is the operationalisation and implementation of international water conventions, particularly the Lake Chad Basin Water Charter. Several provisions of the Charter are relevant to the EQOs (see Annexe 3). In addition, capacity building at all levels and implementing an effective monitoring and evaluation system are vital components of the governance framework.

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



# 03. Action Areas and Priority Interventions

https://www.grida.no/resources/4832

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

This quality objective addresses the PTEP of variability in the hydrological and hydrogeological regime - one of the four PTEPs identified in the 2005 TDA. High variability and the unpredictable nature of water availability, coupled with degradation of resource quality, were identified in the TDA as major challenges to the development and sustainable management of Lake Chad Basin resources. In the Lake Chad Basin, seasonal and cyclical variability in hydro-rainfall conditions is rampant in a tropical climate, especially the Sahelian climate. Such variability is a distinctive and fundamental characteristic of this environment, even before climate change became a global concern. The natural and usual variability of the water regime is not a problem. This is because it is beneficial in some respect (feeding the alluvial plain is essential to some plant and animal species, including fish, etc.). The problem lies in its frequency, extent, and recent manifestations, which are a major constraint to the maintenance and development of productive activities (agriculture, livestock, fishing, exploitation of forest products, etc.), the well-being of populations and the health of ecosystems.

Some of the factors cited in the TDA as responsible for the variability in hydrological and hydrogeological regimes of the lake and its tributaries. They include, among others, variability and climate change and increased pressure on water

resources resulting from increased abstractions and/or modification of the lake or river regime for the growing needs of agriculture, domestic and animal consumption, etc. In addition, the increase and suboptimal and uncoordinated management of hydraulic infrastructure (dams) are also identified as immediate causes. Underlying causes include poor governance and, in particular, the absence of water policies aligned with domain standards. Where they exist, these policies are rarely applied and implemented. These policies are applied through legislation and regulations. Unfortunately, they are often ineffective, as is the case with the regulation on abstractions.

The appropriate solution to the problems identified in the TDA should ensure the availability, in all seasons, of necessary water volumes with the required quality to satisfy the competing needs of Member States in general and sectors that use it in particular (human and animal consumption, productive sectors such as agriculture, livestock, fisheries, navigation, energy, etc.) and ecosystems. To achieve the expected outcome, EQO 1 focuses on filling the knowledge gap, especially on groundwater and water quality, improving water availability by investing in hydraulic infrastructure for rainwater collection and storage and by furthering the study on the Inter-Basin Transfer options for the basin's hydro-system, mitigating the magnitude and frequency of water regime variations through interventions and developments that allow for the cushioning of very heavy floods and raising low flows, preserving water quality, and promoting innovative water governance interventions.

**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 water resources

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

- **Action 1.2.1.** Ensure water supply/generation/production: o Support targeted interventions to improve flows into tributaries and the lake o 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:
- Resource inventory, as well as periodic and systematic assessment of water resources,
- Promote efficient water use (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
- 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 irrigated crops and improve flood recession (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 pastures and watersheds of lakes and tributaries
- Disseminate sustainable water and land management adoption 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**

This Action Area aims to review and adapt principles and modalities for managing reservoirs to address competing needs- power production, irrigation, ecosystems, and potential navigation in the tributaries and water bodies of Lake Chad. These activities can build on the pioneering work in the Komadugu Yobe Basin, specifically targeting the Challawa and Tiga reservoirs (FMWR, 2019[1].

- **Action 1.5.1**. Promote integrated water resources management (IWRM) to align 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 in 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

This quality objective addresses the PTEP on biodiversity degradation in the Basin. Seen as a gigantic oasis within a hyper-arid environment, the endorheic river-lake catchment of Lake Chad is a refuge for many animal and plant species, many of which are endemic or endangered. The Basin's configuration and the hydrological regime of the lake and its tributaries also created favourable conditions for the growth of an abundant and diversified fish fauna population. Its rich biodiversity stems from unique ecosystems, such as the vast floodplains around the lake's water body and in the lower valleys of the Logone and Chari rivers (the Yaeré plain and, in particular, the Waza Logone plain) and the Komadugu-Yobe river catchment (the Hadeja-Nguru plain). Lake Chad's ecosystems and the region's unique nature and importance are illustrated by the many parks, biosphere reserves and Ramsar sites - wetlands of international importance. The Lake Chad Basin numbers 8 of such (see the table).

1. FMWR. 2019. Tiga and Challawa Gorge Reservoir Reoperation and Optimization Study. Preparation of Strategic Action Plan for the Development of Water Resources in the Komadugu Yobe Basin. African Water Facility (AfDB)- SMEC (consulting firm)-Federal Ministry of Water Resources (Nigeria)/ The Hadejia Jama'are Komadugu Yobe Basin - Trust Fund (HJKYB-TF). March.

***Table 1:*** *Wetlands of international importance in the Lake Chad Basin (Ramsar sites)*

| Wetlands listed as Ramsar sites | Year listed | Surface area (ha) |
|---|---|---|
| Cameroonian portion of the Lake Chad | 2010 | 12,500 |
| Niger portion of the Lake Chad | 2001 | 338,550 |
| Nigerian portion of the Lake Chad | 2008 | 607,354 |
| Chadian portion of the Lake Chad | 2001 | 1,648,100 |
| Lake Chad | | 2,606,504 |
| Waza Logone (Logone river)-Cameroon | 2006 | 600,000 |
| Logone floodplain and the Tupouri depressions - Chad | 2005 | 2,978,900 |
| Massenya plain (Chari river) -Chad | 2008 | 2,526,000 |
| Lake Fitri-Chad | 1990 | 195,000 |
| Bahr Aouk and Salamat-Chad flood plains | 2006 | 4,922,000 |
| Dagona Sanctuary Lake-Nigeria | 2008 | 344 |
| Baturiya Wetland-Nigeria | 2008 | 101,095 |
| Nguru Lake (and Marma Channel) complex-Nigeria | 2000 | 58.100 |
| Lake Guidimouni-Niger | 2005 | 34,000 |
| Lassouri-Niger pond | 2019 | 338 |
| Lake Chad Basin | 14 Ramsar sites | 13,364,839 |

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

Implementation of this Action Area can be based on inventories of endangered species conducted under the 2015 Environmental Audit of the Lake, which identified the endangered species of the Lake: (GIZ, 2015) . Hence the following actions are envisaged:

- **Action 2.1.1.** Carry out annual inventories and ecological monitoring of the dynamics of animal, bird, and plant species
- **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 Green Wall)
- **Action 2.2.7.** Limit the expansion of agro-pastoral lands: intensive agriculture and breeding
- **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, connecting and strengthening 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

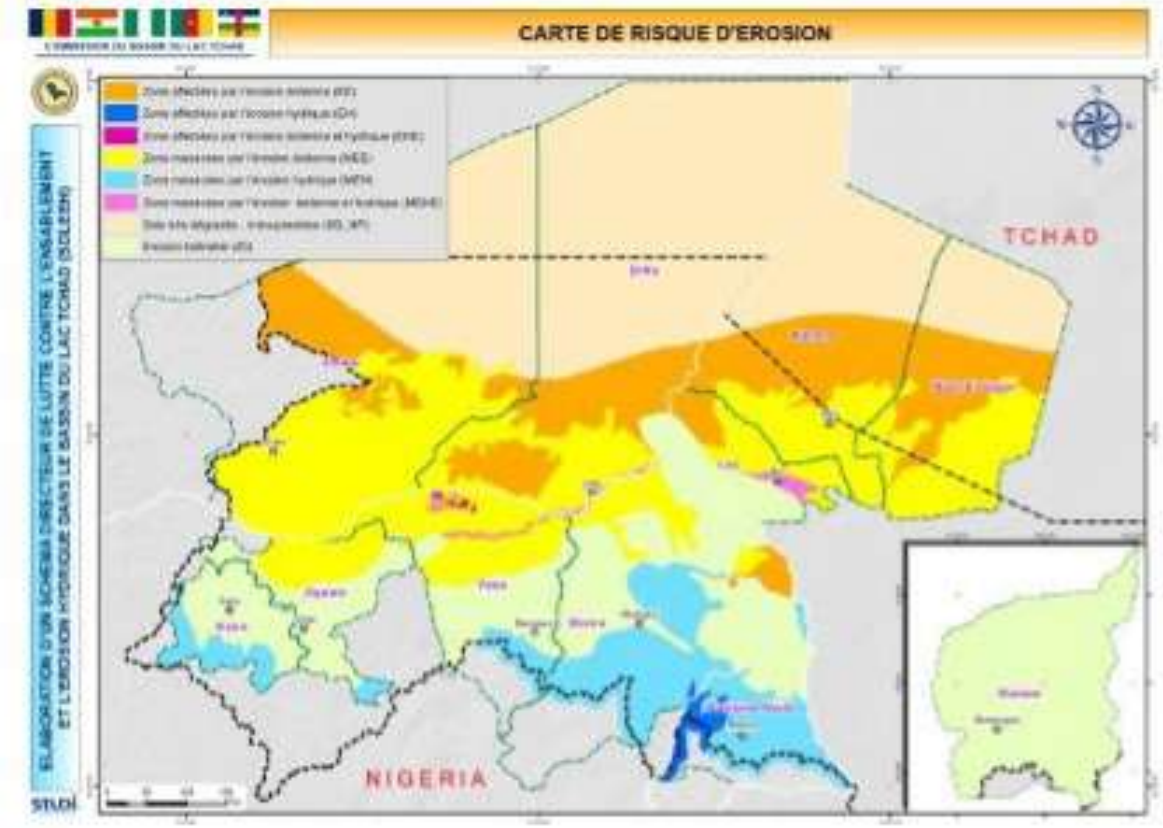
**Action Area 2.4. Protecting and managing fish fauna sustainably:**

- **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 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 promoting their economic value:**

- **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, oasis in natural depressions or 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

***Figure 3**: Map of areas prone to wind and water erosions in the Lake Chad Basin*




*Studi, 2015, Report Phase 2*

- **Action 2.5.5.** Promote the economic viability of invasive species (biomass for energy production; or as building material, agricultural composting, etc.)

**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 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

EQO 3 provides a solution to the PTEP on sedimentation identified in the TDA. The transport and accumulation of solids: silt, clays, sands, decaying organic matter, etc., affect the lake water body, its tributaries, and reservoirs in the Basin. Sedimentation in the Lake is primarily caused by water erosion and wind erosion. Intense water erosion is synonymous with a high rate of soil degradation upstream and along the banks of tributaries and their inflows. Tributaries are estimated to deposit over 2 million tons of sediment each year into the Lake

(Lemoalle, 2014; GIZ, 2016). Wind erosion is of particular interest in the Nigerien and Chadian national portions of the basin and, to a lesser extent, in the North of Cameroon, CAR and Nigeria (see fig. 3 below). Sand swept from the ground and deposited by the wind in the Lake and tributaries worsens sedimentation in the overall hydro-system of the Lake. It is estimated that the volumes of sand deposited annually in the Lake stand at 110 tons per $km^2$ (Lemoalle, 2014), that is, 1.5 to 2 million tons per year. Sedimentation is alarming since the Lake has no outlet. But as an endorheic watercourse, it is the outlet and deposit area for all solid contributions conveyed by the network of tributaries or the wind. The hundreds of islands of diverse sizes in the Lake Basin result from rapid sedimentation. The current sedimentation rate (0.5 to 4mm of sedimentary deposits on average) does not threaten the Lake's future. However, in addition to the existence and multiplication of islands and the degradation of water quality, the sediment deposits reduce the thickness of the water level, obstruct or narrow the beds of certain tributaries and accelerate the filling and thus the life span of some reservoirs such as the dams in Challawa (Komadugu Yobe subbasin in Nigeria) and Maga (Logone sub-basin in Cameroon)

In its analysis of the causes of sedimentation, silting, and mudding, the TDA mentions water and wind erosion (as mentioned above), deforestation, inappropriate and unsustainable agricultural practices and techniques that deplete and expose the soil. These practices include slash-and-burn agriculture, transhumance and overgrazing (2018 TDA; Studi, 2015). They deplete flora and lead to the degradation of soil and vegetation cover, and ecosystems in the Basin in general. But there are other underlying causes of this issue of sedimentation and silting. These include variability, climate change, and a governance framework (inadequate relevant policies and regulations or poor implementation).

The solution to sedimentation and silting is two folds: control water erosion, gullying, and mudding around the hydrographic network of the Lake and its tributaries, and control silting, which is affecting the active Basin in general, with emphasis on the northern portion (Niger, Chad) and to a lesser extent north-east Nigeria and northern Cameroon. The objective is not to control sedimentation and silting. It is rather to ensure that the rate and extent of this phenomenon neither hinder the restoration of sensitive ecosystems and biodiversity nor hamper efforts to combat poverty through sustainable natural resource management. Concerning the fight against water erosion, particular emphasis should be placed on the large reservoirs of the Basin whose life span can be significantly shortened if sedimentation speed is not slowed down. In addition, an inventory and diagnosis of the state of conservation of head flows and their inflows will also be conducted, with activities to protect and restore priority sources. For the Chari, these include sources from

the Bamingui, Gribingui and Bangoran rivers located in Central Africa or those of the Bahr Aouk river, partly located in Sudan. The Logone's primary source is in the north-eastern Adamawa Region of Cameroon, while the Pendé- a vital tributary from the Logone - runs from the Central African Republic. For the Komadugu-Yobe complex, the Hadejia and Jama'are tributaries run partly from the Jos plateau. Concerning wind erosion and silting, the solutions involved dune stabilisation, setting up windbreaks, and targeted desilting waterways and land connecting routes. These should include sustainable agropastoral practices that reduce soil and wind erosions.

**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 headwaters of the tributaries of Lake Chad
- **Action 3.1.2.** Promote integrated anti-erosion management of various catchments of the Chalawa Gorge Dam in Kano-North Nigeria (Studi, 2015)
- **Action 3.1.3.** Undertake targeted bank stabilisation initiatives for the Logone and the Maga Lake weir (Studi, 2015)
- **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**. Initiate activities to desilt 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.** Map 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 agro-pastoral 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.** Promote deferred grazing and natural regeneration initiatives
- **Action 3.5.3.** 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

Climate change is real. Yet it is a complex phenomenon. Whether used for positive or harmful purposes, the dramatic shrinking of the water body of Lake Chad was and is often used to illustrate the reality and magnitude of climate change. In the 1990s and 2000s, the lake's water body had shrunk by 90% from its level in the 1960s. Notwithstanding this, the average filling level improved significantly over the last two decades, although it is yet to attain its levels in the 1960s. Scenarios vary from one source to another based on the models used. What is valid for the lake's hydrology is also largely valid for many of the other key climate parameters. While there has been a continuous north-south migration of isohyets, significantly since the 1970s, rainfall in the Lake Chad Basin and the Sahel increased over the last two decades. However, there is a broad consensus regarding temperatures, which are expected to rise significantly in the coming decades. Also, extreme weather events (severe droughts and devastating floods) are expected to be more frequent and severe (Agrhymet, 2020a and 2020b; World Bank, 2015).

Member States are not well-prepared for climate change-related shocks. The Global Adaptation Initiative (GAIN) of the University of Notre Dame (USA) compares and tracks countries globally based on their vulnerability to climate change. The degree of vulnerability, the likelihood of being negatively affected by climate shocks, is calculated based on 36

criteria grouped into 6 components: food/agriculture, water, health, ecosystem services, and human habitat. In the 2020 GAIN ranking, 3 of the Lake Chad Basin countries (Chad, CAR, and Niger) were among the 10 (out of 182 countries) most vulnerable, with Nigeria and Cameroon being among the 40 most vulnerable.

Some factors contributing to the propensity of the Lake Chad Basin to be negatively impacted by climate change include high dependence on natural resources, which are directly affected by climate variations. It is another reason for the high dependence on undiversified agropastoral activities (agriculture, livestock, or fishing). These activities are susceptible to climate hazards, dependence on rain-fed agriculture and low water control (irrigation) levels. Other factors include sufficient development of non-agricultural sources of income, degradation of ecosystems and their functions (ecosystems and natural infrastructures), and little access to quality climate information. Equally, climate change may lead to an increase in zoonoses (diseases or infections naturally transmissible from vertebrates to humans), for example, through the proliferation of pathogens or by changes in wildlife habitats or even changes in the movements and migratory habits of certain species (such as migratory birds). It is therefore important to set up a monitoring and warning system to prevent the risk of an outbreak and spread of zoonoses in the Basin.

The response to the challenge of climate change in the Lake Chad Basin consists primarily of managing uncertainties, a climate context changing significantly and so in unpredictable ways. Thus, the SAP opts for the "no-regrets" solutions, i.e., solutions that generate environmental, economic, and social benefits when climate change predictions materialise and when climate developments contradict predictions. The SAP focuses on building adaptive capacity and resilience while contributing as much as possible to climate change mitigation efforts. The aim is to reduce the vulnerability of the Basin's populations, production systems and ecosystems during significant climate change.

**Action Area 4.1. Knowledge of climate change 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 DA 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:**

- 4.2.1. Promote the diversification of production systems (contribute to mitigating efforts: green manure; alternative energy in wind pumping, solar, ecofarms, 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 oasis in natural depressions or oasian cuvettes (Northern section of the Lake Chad watershed basin) and their diversified production systems.

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

- Action 4.3.1. Conduct studies on ecosystem water need 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

Without actually considering them as PTEPs, the 2018 TDA highlighted and noted the importance of the following cross-cutting problems:

a. Poor governance framework (inadequate policies, the lack of practical effectiveness of these policies, and the disharmony and inconsistencies of legal and institutional frameworks within Member States and at the inter-state level),
b. Inadequate knowledge in critical environmental areas (sedimentation, water quality, etc.),
c. Inappropriate capacity development at all levels,
d. Violence and insecurity around the lake, and
e. Less consideration for gender mainstreaming.

The 2018 TDA showed that these transboundary problems are among the leading causes, common to all or most of the PTEPs. This 2018 TDA, therefore, suggested that these issues be considered when formulating the SAP and that appropriate actions be defined to address them.

Cross-Cutting Objective 5 is in line with this request as it outlines five Action Areas: operationalising and effectively implementing the Water Charter; disseminating emerging principles and standards of shared freshwater management, and in particular, water conventions (Helsinki, 1992 and New York, 1997); contributing to efforts to combat violence and insecurity through inclusive, equitable and sustainable resource management and the promotion of hydro-diplomacy at the national and interstate levels; ensuring better consideration for gender mainstreaming in efforts to enhance the conservation and sustainable management of LCB resources;  and building capacities at the Basin (LCBC), national (riparian states governments) and local levels.

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

The Water Charter, adopted in 2012, covers all of the areas of concern for the SAP, as shown in the table in Annexe 3. The practical implementation of provisions of the Charter will therefore contribute to achieving the SAP Vision 2037, particularly the four EQOs that underpin this Vision. These Objectives focus on water availability and quality, biological diversity, fight against sedimentation and silting, and building resilience in a changing climate. Although the Charter inspires to a considerable extent some of the policies and regulations adopted in recent years in Member States - notably the prior notification in case of investments likely to have transboundary impacts - much remains to be done to ensure its effective implementation. A first constraint is that many of the provisions are aspirational and need to be operationalised. This is underway with the development of annexes to the Charter. There is also a need for the Charter to be better known by key stakeholders at national and local levels and for States to be supported in their efforts to incorporate the provisions of the Charter into national policies, laws, and regulations. To this end, the following Actions are envisaged:

- **Action 5.1.1**. Support the dissemination of the Charter, including, as needed, its translation in 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., "Abstractor-Pays," "Polluter-Pays," 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 raising awareness on 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-Depository of Treaties Convention de New York 1997; 1992 Helsinki Convention (consulted on 9/10/2022)*

Actions planned to highlight and disseminate relevant provisions of international conventions on water are:

- **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

It should be noted that many of the Actions to promote and operationalise international conventions on water can be implemented at the same time and in synergy with activities related to the Water Charter (previous Action Area)

### 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:

For the past twenty years, the Lake Chad region has been plagued by armed insurgency, the best known of which is Boko Haram. The resulting insecurity and violence are major setbacks to the protection and sustainable management of water, related resources, and the environment in the Basin in general. In addition to the presence of armed groups, factors such as demographic pressure, scarcity, and degradation of resources increase competition and the risk of conflicts at all levels: between riparian communities, States, etc. But on the brighter side, for being a shared resource, the lake and tributaries offer opportunities for cooperation that are not fully taken advantage of. The following Actions are envisaged to prevent conflicts and promote cooperation within the Lake Chad basin:

- **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 joint inter-state hydraulic and major hydroelectric projects (common facilities or facilities 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 hydrodiplomacy in the LCB

Given the highly conflict-prone nature of the land issue coupled with numerous conflicts over the use of resources (farmers -herders, fishermen-farmers in flood plains and irrigated areas), LCBC was called upon to encourage Member States to adopt, within the Basin and/or at country level, a land charter associated with land use and allocation plans based on the most appropriate uses of land categories. Such plans help protect fragile groups such as pastoralists who see their pastoral land shrink yearly.

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

Even though data to uphold this is not readily available, it is still evident that women play a leading role in the management and use of the Basin's natural resources: water, forests, fauna and flora, agricultural potential, fishing, etc. For this reason, they are disproportionately exposed to the impacts of degradation of the Basin's resources - unavailability, high variability and decline in quality of water resources; deforestation (access to firewood, non-timber forest products, etc.); ecosystem degradation and decline in biodiversity; etc.

The following Actions are envisaged to ensure better consideration for gender mainstreaming:

- **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.** Initiate popularisation programmes and sustainably use local natural resources for women and young people as a priority:
- Support initiatives for the development and management of aquaculture ponds o Promote the use of alternative fish conservation practices and techniques (drying and smoking with solar energy)
- Support initiatives for the sustainable use of non-timber forest products: spirulina, balanite oil and fruit, gum arabic, shea butter, etc.
- **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

The SAP is an ambitious planning document. It is the most ambitious document developed by LCBC in terms of the diverse nature of covered areas and the organisational, human, and financial resources required. Therefore, extraordinary measures must be taken for LCBC to have the resources to implement the SAP effectively. These include providing the Commission with a credible communication and funding mobilisation plan, setting up a monitoring and evaluation system and capitalising on experiences and lessons learned. In addition, this SAP is also an opportunity to implement the relevant conclusions of the recently completed organisational audit of the LCBC. For this, the following Actions are envisaged so that LCBC's ability to implement the SAP is strengthened:

- **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. Budget and Mobilisation of Funding

### 4.1. Budget

The estimated overall budget for the SAP over 15 years (three five-year action plans) is USD 210 million (in constant dollars), or an average of slightly less than USD 15 million per year.

The budget for the first five-year plan stands at USD 73 million. It increases by 10% for the second five-year plan and decreases by 30% for the last five-year plan. Thus, interventions related to diagnosis, urgent rehabilitation, and the establishment of governance structures are more important during the first five-year period. The second five-year period should be for full implementation, while the last five-year period should, for the most part, be devoted to consolidating the achievements of previous phases.

This budget may seem small if we consider the Actions in question. But it should be noted that the SAP complements strategies, plans, and projects implemented by States in their national portions of the Basin. It also complements LCBC's interventions in other sectors.

Regarding the amount, one may think that this budget is beyond LCBC's ability to secure funds for the environment. Still, we must bear in mind that this mobilisation is as much the responsibility of LCBC as the Member States and even that of non-governmental organisations (NGOs and others) intervening in the Basin.

It should be noted that the cumulative budgets of the projects and programmes under implementation, PROLAC, PAIBLT, PRODEBALT, PRESIBALT PARSEBALT and RNEE (GEF/AfDB), GEF-UNDP, BMZ-GIZ-BGR, PURDEP stand at more than USD 300 million over 5 to 10 years. The project to draft and implement a plan for developing and adapting to climate change in the Lake Chad Basin, led by the World Bank and the AfDB, has an estimated budget of USD 916 million over ten years.

The SAP's budget is indeed huge. Yet it is not excessive. It is commensurate with the challenges of conservation and sustainable management of resources in the Lake Chad Basin at a time of significant hydro-climatic changes.

***Table 3:*** *Summary of the general SAP budget*

| | 15-Year budget (constantly in US dollars) | | | | |
|---|---|---|---|---|---|
| | **Five-year Plan 1** | **Five-year Plan 2** | **Five-year Plan 3** | **Total per EQO** | |
| | **2023-2027** | **2028-2032** | **2033-2037** | **US$** | **%** |
| EQO 1. Integrated, efficient and sustainable management of water resources | 14,880,000 | 16,368,000 | 11,457,600 | 42,705,600 | 20% |
| EQO 2. Conservation of the biodiversity | 14,570,000 | 16,027,000 | 11,218,900 | 41,815,900 | 20% |
| EQO 3. Control sedimentation | 9,640,000 | 10,604,000 | 7,422,800 | 27,666,800 | 13% |
| EQO 4. Strengthen climate change resilience | 16,200,000 | 17,820,000 | 12,474,000 | 46,494,000 | 22% |
| TRANS-OBJ-5 | 17,760,000 | 19,536,000 | 13,675,200 | 50,971,200 | 24% |
| **TOTAL** | **73,050,000** | **80,355,000** | **56,248,500** | **209,653,500** | **100%** |

### 4.2. Funding

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

a. Funding through the extension of projects:

The first avenue for funding the SAP could be through major projects and programmes. They are normally due by the end of 2022, but for reasons like the outbreak of the COVID-19 pandemic, experienced delays in their implementation. These projects and programmes include:

- PRESIBALT, funded by the AfDB (2022),
- The BMZ-GIZ project titled Applied Water Resources Management in the Lake Chad Basin (2022), and
- The GEF-UNDP project to improve resilience (2023).

It is expected that most of these projects will be extended for one or two years at no additional cost. This could be an opportunity for LCBC to discuss the possibility for these projects to consider priority activities of the SAP, especially as one of these- the GEF-UNDP project- was specifically intended to support the implementation of the 2008 SAP, which is being updated through this document.

The following priority activities of the SAP could receive support from these ongoing projects during their extension phases:

- Drafting project concepts based on the activities identified in the SAP,
- Drafting project documents such that they are aligned with funding opportunities (e.g., climate finance sources),
- Supporting funding mobilisation initiatives such as:
  - Developing communication products based on the SAP (brochure, etc.),
  - Organising a donor round table,
  - Organising training for experts from LCBC and Member States on preparing investment projects for innovating funding mechanisms.
- Supporting Member States in drafting action plans or roadmaps to contribute to the implementation of the SAP in the national portions of the Basin,
- Strengthening the technical expertise and operational resources of LCBC and its Member States for the effective implementation of the SAP,
- Supporting baseline studies to fill the gaps in specific fields (water quality, ichthyology, etc.).

b. Inclusion of the SAP in the development of new projects by LCBC's historical partners:

Although the projects are drawing to a close, LCBC traditional TFPs are envisaging new projects. It is the case of the World Bank (with an envisaged major programme with the AfDB), the AfDB (whose main support programmes to LCBC will be rounded off at the end of 2022), and the German cooperation. Through its 24 Action Areas and 89 Actions, the SAP is providing a rich bank of ideas that can be considered for new projects brought by LCBC's long-term partners

c. Inclusion of SAP activities in other LCBC planning documents

There are broad thematic overlaps between the SAP and other LCBC strategic planning documents. These documents, therefore, already consider some of the activities identified in the SAP. But there is the possibility, during LCBC Coordination Meetings, to ensure greater cooperation in implementing strategies, including efforts to mobilise funding. Some LCBC strategies that are being formulated or implemented, with broad areas of convergence with the SAP, include:

- The Regional Strategic Transboundary Framework for Disaster Risk Reduction and Adaptation to Climate Change in the Lake Chad Basin (2021)
- The Climate Change Adaptation Strategy (2019),
- The Regional Strategy for Stabilisation (2018),
- The "Water Erosion and Silting Control Master Plan" (2014),
- The "Wood energy Supply Strategy for Large Cities" (2017),
- The "Development Plan for Pastoral Areas" (2013),
- The "Lake Chad Fishery Management Plan" (2015).

d. Partial funding opportunity for the SAP as part of strategies and programmes implemented by States and their partners in their national portions of the Basin.

Within the framework of strategies and programmes that exist or which are to be formulated by States in their respective portions of the Basin, the funding of some relevant activities under the SAP could be envisaged: For example, the fight

against invasive plants in the Komadougou Yobe sub-basins in Nigeria (considering the ten-year SAP targeting this subbasin) or the Logone in Cameroon (within the framework of the Far North Regional Development Plan); or dune stabilisation and the fight against bush fires in developmental master plans in the national portions of the Basin located in Niger or Chad.

e. Partnerships to broaden for mobilising funding and implementing the SAP:

- LCBC could strengthen partnerships with technical partners such as FAO, UNESCO, IUCN, GWP and financial partners such as the African Water Facility (AWF, AfDB) and CIWA (World Bank) to explore the possibility of formulating joint projects and operationalise the SAP,
- Regional Economic Commissions (RECs), such as ECOWAS and UEMOA (for West Africa) and ECCAS and CEMAC for Central Africa, can be partners in mobilising funding and implementing the SAP, either for funding SAP components or connecting with funding partners,
- Alliances can also be envisaged with bodies such as AMCOW and ANBO (African Network of Basin Organisations) to which LCBC belongs.

f. Feasibility of a Trust Fund or Foundation to fund conservation and the sustainable management of water and the environment in the Lake Chad

LCBC will review the possibility of setting up a trust fund or a foundation (which could be called "Lake Chad Foundation - Common Legacy" to ensure sustainable funding of the three five-year plans of the SAP. This fund could be partly financed by special contributions from Member States but also and above all by part of the revenues generated through the enforcement of provisions of the Water Charter, for example, the "Abstractor-Pay" principle (whereby water users would pay a fee based on the volumes abstracted), the "Polluter-Pay" principle (imposing fines that may be financial on polluters), as well as revenues that could come from taxes related to navigation, fishing, etc. In addition, establishing this trust fund or foundation could draw from the experience and lessons learned by the Nigerian Federal State when it created the Hadejia-Jama'are-Komadougou Yobe trust fund in the sub-basin.

# 05. Implementation of the SAP

After adopting the SAP by the appropriate LCBC bodies, it will be implemented in the basin and countries under the responsibility of LCBC, Member States and regional, national, and local non-state actors.

### 5.1. 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 substitute LCBC Member State efforts. However, it complements activities such as conserving, efficiently and sustainably managing the environment and resources of the Lake Chad basin. The uniqueness of the SAP, and its added value, is that it focuses on the transboundary nature. Therefore, it proposes solutions to challenges that arise in one country and affects other countries or challenges common to several countries and for which joint activities can be envisaged. Moreover, economies of scale can be achieved in the implementation of solutions.
ii. The SAP - a decision-making instrument for others at the disposal of LCBC and the Member States. The TDA and SAP are diagnostic and planning tools in transboundary water and environmental management that complement - but do not replace - other decision-making instruments of LCBC. The implementation of the SAP will, however, be an opportunity to strengthen coordination and develop synergies with activities planned by other LCBC planning tools.
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. The SAP is everybody's business, and basin stakeholders each play a role. However, LCBC has a leading role in coordinating and implementing the SAP in close partnership with Member States, local administrative and political bodies, civil society, and basin user organisations.

### 5.2. Basin Implementation - Role of LCBC

LCBC will coordinate the implementation of the SAP in the basin. LCBC assumes the primary responsibility for mobilising the required funding with the Member States.

The coordination and mobilisation of funds will be conducted by establishing a Coordination and Implementation Unit. For example, it could be established within the LCBC Technical Department.

#### 5.2.1. The SAP in the LCBC planning cycle

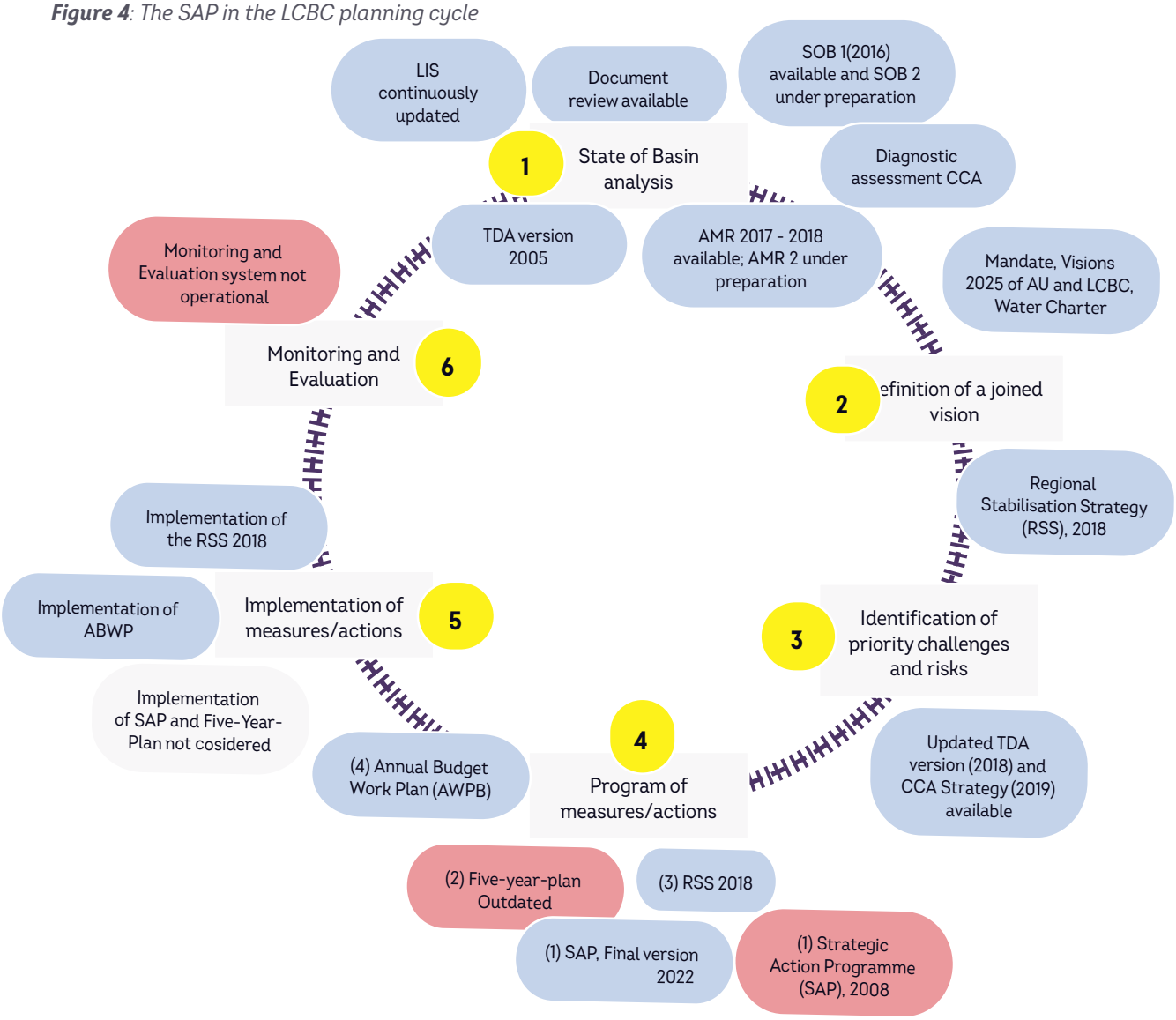
The SAP implementation is done with LCBC's project planning and implementation cycle, illustrated in Fig. 4 below. The SAP is one of the links in this planning cycle that can benefit from existing mechanisms, particularly in coordination, monitoring, and evaluation. Although the SAP has its niche (water, environment, and transboundary nature), the diversity of strategies and plans implemented concomitantly creates risks of duplication. Therefore, it must be identified and resolved at the beginning of implementation. Among strategies and plans to be considered, we can mention:

i. Climate Change Adaptation Strategy (2019),
ii. Regional Stabilisation and Security Strategy (2018),
iii. Silting and Water Erosion Master Plan (2014),
iv. Strategy for the Supply of Wood Energy to Major Cities (2017)
v. Development Plan for Pastoral Areas (2013)
vi. Lake Chad Fisheries Management Plan (2015).

#### 5.2.2. Capitalise on ongoing programmes and projects

Several recent programmes and projects are under implementation or development in the Lake Chad basin. Many of these programmes and projects are significant in financial terms and areas covered or geographical targets. Various themes covered by these projects are very consistent with the SAP. As a result, some recently completed projects are sources of learning or best practices relevant to the SAP. Projects under implementation could be sufficiently flexible to contribute to the implementation of SAP actions planned in the short or medium term.

*Figure 4: The SAP in the LCBC planning cycle*




Once the SAP is approved, a working meeting with implementing agencies of these projects will be necessary to explore in practice the possibilities for these projects to contribute to implementing SAP activities.

### 5.3. National Implementation - Role of States

Each Member State is responsible for implementing SAP components that concern the country, bearing in mind the transboundary nature of the solutions proposed by the SAP.

Each Member State should develop an action plan to implement the SAP. Sub-national bodies such as states or basin agencies (in the Nigerian context), regions in Nigeria, and prefectures should play a leading role in implementing national contributions. These contributions should consider existing local strategies in water and environmental management.

### 5.4. Monitoring and Evaluation

LCBC is also responsible for periodic monitoring and evaluation to coordinate the SAP implementation. Monitoring and evaluation require the definition of indicators. The definition of indicators specific to the SAP creates the risk of mobilising too many resources (human and financial) for data collection with the sole aim of filling in the selected indicators without being sure of the quality of the information. Consequently, as far as possible, the principle has been adopted of using indicators for which there are already mechanisms to collect information regularly to report on progress. It is the case for the SDG indicators and the Water and Sanitation Sector Monitoring and Reporting System (WASSMO) indicators for water and sanitation of the African Minister's Council on Water (AMCOW), which are widely

used to propose monitoring indicators. It is understood that the LCBC will partner with Member States (who periodically provide information to deliver on the indicators) to provide disaggregated data at the local unit in the national portions of the basin: States for Nigeria, Regions for Niger and Chad, Prefecture for CAR.

Relevant indicators of the Lake Chad Information System --Lake Chad Information System – LIS) will be used to finalise the choice of indicators for monitoring the SAP. The indicators in Table 5 below are to be capitalised on as part of efforts to build the Lake Chad monitoring framework.

***Table 4:*** *Frameworks and programmes to consider in implementing the SAP*

| Countries | Administrative/Political Bodies | Basin Agencies | Local Major Strategies/Programmes |
|---|---|---|---|
| Cameroon | Far North Region | | 2022-2037 - Far North Regional Development Plan (FN-RDP) |
| Niger | Diffa and Zinder Regions | | |
| Nigeria | Borno, Bauchi, Plateau Kano, Jigawa and Yobe States | HJRBDA, CBDA | Strategic Action Plan for the Komadugu - Yobe Basin (2018-2040) |
| CAR | Bossangoa Prefecture | | |

*N.B.: HJRBDA: Hadejia-Jama'are River Basin Development Authority, CBDA: Chad Basin Development Authority*

An SAP monitoring committee will be set up at LCBC. It will bring together Commissioners of Member States, the Technical Committees of Experts, Focal Points, country monitoring and evaluation instruments and LCBC experts. It will meet every 6 months to review the progress of the SAP implementation. The Monitoring Committee will produce an annual (or once-ayear) progress report on implementing the SAP based on the monitoring outcomes. The progress report will be submitted to the Council of Ministers, particularly the lessons and recommendations. The latter will decide on corrective measures to be envisaged in the event of challenges.

As regards the evaluation of the SAP, an external evaluation is planned one year before the end of the first and second five-year action plans, i.e., in 2026 and 2032. A final evaluation will be conducted one year before the end of the period covered by the strategy, i.e., in 2036. The SAP and updated TDA outcomes will be used to prepare the SAP for the following period.

***Table 5:*** *Proposed indicators for monitoring the SAP*

| Action Area | Indicators | Sources |
|---|---|---|
| **EQO-1:** Variability, Availability and Quality of water | Proportion of population using safely managed drinking water services [%]. | SDG 6.1.1. |
| | Proportion of the population using Safely managed sanitation and hygiene services [%] | SDG 6.2.1 |
| | Variation in water-use efficiency (WUE) | SGD 6.4.1 |
| | Level of water stress: freshwater withdrawal as a proportion of available freshwater resources [%] | SGD 6.4.2 |
| | Development of water infrastructure for riparian states [qualitative]. | WASSMO I-3.5 |
| | Proportion of lakes and reservoirs with good water quality [%] | WASSMO I-4.3b |
| | Percentage of the aquifer with good water quality [%] | WASSMO I-4.3c |
| **EQO-2** Biodiversity Conservation | Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas (by ecosystem type) | SGD-15.1.2 |
| | Proportion of traded wildlife that was poached or illicitly trafficked | SGD-15.7.1 |
| | Trend in waterbird abundance in LCB Ramsar sites | Based on the Ramsar Convention indicator |
| | Ramsar Convention indicator | Ramsar Convention indicator |
| **EQO-3:** Sedimentation | Proportion of land that is degraded over a total land area | SGD-15.3.1 |
| **EQO-4:** Resilience In The Light of Variability And Climate Change. | Irrigated areas as % of total irrigation potential [%] | WASSMO I-3.2b |
| | Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population [No.] | WASSMO I-5.2a, SDG-13.1.1. |
| | Direct economic losses caused by water-related disasters as a proportion of GDP [%] | WASSMO-5.2b |
| OBJ-Cross-Cutting Gender | Percentage of water-related policies, laws and plans in which gender concerns were considered [%] | WASSMO I-6.6. |
| | Proportion of time spent on unpaid domestic and care work, by sex, age, and location [%] | SDG-5. 4.1 |
| OBJ- Cross-Cutting Governance | Degree of integrated water resources management implementation (0–100) | SDG 6.5.1 |
| OBJ- Cross-Cutting- Violence/ Insecurity | Conflict-related deaths per 100,000 population, by sex, age, and cause | SDG-16.1.2 |
| | Proportion of population that feel safe walking alone around the area they live, as a proportion of the total population | SDG-16.1.4 |

# 06 Appendices

## 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** | | | | | **Estimated budget** (US$) | **Potential Partners** |
| | | 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 | | | | | | 1,200,000 | **1,500,000** |
| | **A1.1.2**. Promote sharing/disseminating of the outcomes of the regular monitoring of the quality and quantity water resources | | | | | | 300,000 | |
| **AA 1.2.** Improving water availability | **A1.2.1.** Ensure water supply/generation/production | | | | | | 3,500,000 | **4,000,000** |
| | **A1.2.2.** Ensure the management of water demand/needs in order to reduce the pressure on water resources | | | | | | 350,000 | |
| | **A1.2.3.** Support further in-depth review of inter-basin transfer options for the Lake Chad Basin hydro-system | | | | | | 150,000 | |
| **AA 1.3.** Mitigating/controlling the variability in rainwater, groundwater, and surface water regimes | **A1.3.1.** Design and implement water control investment programmes | | | | | | 650,000 | **1,450,000** |
| | **A1.3.2.** Increase water retention capacity of soils | | | | | | 800,000 | |
| **AA 1.4.** Controlling water quality degradation | **A1.4.1.** Conserve and sustainably manage ecosystems/wetlands as natural water purification infrastructure | | | | | | 1,200,000 | **7,360,000** |
| | **A1.4.2.** Strengthen control of water pollution/contamination from mining areas, industrial units, and human settlements | | | | | | 220,000 | |
| | **A1.4.3.** Improve agricultural drainage systems and promote organic farming to mitigate water pollution from agricultural chemical inputs | | | | | | 650,000 | |
| | **A1.4.4.** Control water pollution by discharges of polluted/contaminated water from fishing vessels/ boats and inland waterway transport | | | | | | 150,000 | |
| | **A1.4.5.** Control water pollution caused by domestic waste discharges (solid and liquid) | | | | | | 180,000 | |
| | **A1.4.6.** Control water pollution/eutrophication related to the proliferation of invasive aquatic plants | | | | | | 4,800,000 | |
| | **A1.4.7.** Promote best practices of community-managed managed sanitation (community-led total sanitation) | | | | | | 160,000 | |
| **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 | | | | | | 150,000 | **570,000** |
| | **A1.5.2.** Promote the Water-Food-Energy-Ecosystem Nexus approach to enhance water resource allocation between competing sectors | | | | | | 120,000 | |
| | **A1.5.3.** Organise stakeholder forums in the management of sub-basins and their natural resources | | | | | | 300,000 | |
| **TOTAL** | | | | | | | **14,880,000** | |

| 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** | | | | | **Estimated budget** (US$) | **Potential Partners** |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | | |
| **AA 2.1.** Improving the knowledge of endemic and/or endangered species | **A2.1.1** Carry out annual inventories and ecological monitoring of the dynamics of animal, bird, and plant species | | | | | | 120,000 | **310,000** |
| | **A2.1.2** Establish and disseminate the status of critical animal, bird, and plant species | | | | | | 60,000 | |
| | **A2.1.3.** Identify endemic and endangered species in the LCB (listed on the IUCN Red List) | | | | | | 40,000 | |
| | **A2.1.4** Conduct targeted studies on the behaviour and habitats of endangered species | | | | | | 40,000 | |
| | **A2.1.5** Implement protection programmes for critically endangered species based on the outcomes of targeted studies on these species | | | | | | 50,000 | |
| **AA 2.2.** Rehabilitating/ conserving and sustainably managing ecosystems with high biodiversity value | **A2.2.1** Assess biodiversity and ecosystem services of main biotopes in the LCB | | | | | | 60,000 | **4,540,000** |
| | **A2.2.2** Designate high-value biodiversity ecosystems as protected areas | | | | | | 50,000 | |
| | **A2.2.3** Enhance the protection/sustainable management of protected areas, parks and Ramsar sites | | | | | | 1,500,000 | |
| | **A2.2.4** Secure wildlife corridors | | | | | | 250,000 | |
| | **A2.2.5** Restore degraded landscapes (rehabilitate areas damaged by poor land management practices, rehabilitate groves, etc.) | | | | | | 1,200,000 | |
| | **A2.2.6** Promote reforestation (in collaboration with the Green Wall) | | | | | | 750,000 | |
| | **A2.2.7** Limit the expansion of agro-pastoral lands: intensive agriculture and breeding | | | | | | 200,000 | |
| | **A2.2.8** Support bush fire control activities, with emphasis on agriculture (slash and burn), livestock (early fires), hunting, etc. | | | | | | 150,000 | |
| | **A2.2.9** Support poaching control interventions | | | | | | 80,000 | |
| | **A2.2.10** Prevent illegal trade in endangered plant and wildlife species (by implementing the Convention on International Trade in Endangered Species (CITES) | | | | | | 150,000 | |
| **AA 2.3.** Supporting the protection and sustainable management of Ramsar sites | **A2.3.1** Conduct studies on required environmental flows, considering the roles of wetlands in the Basin | | | | | | 200,000 | **950,000** |
| | **A2.3.2** Support the creation of a biosphere reserve in the Lake Chad Basin, connecting and strengthening the management of Ramsar sites in the Basin | | | | | | 600,000 | |
| | **A2.3.3** Support the drafting, funding, and implementation of the LCB biosphere reserve management plan | | | | | | 100,000 | |
| **AA 2.4.** Protecting and managing fish fauna sustainably | **A2.4.1** Study fish fauna of the Lake and its tributaries | | | | | | 100,000 | **470,000** |
| | **A2.4.2.** Identify and protect fish spawning grounds/reproduction areas | | | | | | 50,000 | |
| | **A2.4.3.** Promote sustainable fishing techniques and control all forms of "ecocidal" fishing practices and methods | | | | | | 130,000 | |
| | **A2.4.4.** Identify and implement special protection measures for endangered aquatic species | | | | | | 50,000 | |
| | **A2.4.5.** Adopt and implement the principle of periodic biological rest periods | | | | | | 80,000 | |
| | **A2.4.6.** Support the harmonisation of fisheries regulations (water bodies and tributaries of the Lake) | | | | | | 60,000 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AA 2.5.** Controlling invasive species and promoting their economic value: | **A2.5.1** Carry out the inventory of the presence, spatial distribution, and evolution of invasive species (plant and animal) | | | | | | 100,000 | **2,600,000** |
| | **A2.5.2** 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, etc. | | | | | | 300,000 | |
| | **A2.5.3** Support sustained mechanical and biological control for all areas colonised by invasive species | | | | | | 2,000,000 | |
| | **A2.5.4** Establish a monitoring and warning system to address the risk of invasive and proliferating species | | | | | | 50,000 | |
| | **A2.5.5** Promote the economic viability of invasive species (biomass for energy production; or as building material, agricultural composting, etc.) | | | | | | 150,000 | |
| **AA 2.6.** Mitigating pressure on ecosystems and threats to biodiversity by improving access to alternative income sources and practices: | **A2.6.1** Promote fish farming | | | | | | 300,000 | **3,000,000** |
| | **A2.6.2.** Promote wood energy-saving techniques and technologies (e.g., improved stoves) | | | | | | 200,000 | |
| | **A2.6.3.** 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) | | | | | | 500,000 | |
| | **A2.6.4.** Promote income-generating initiatives for women and youth | | | | | | 2,000,000 | |
| | | | | | | | | |
| **TOTAL** | | | | | | | **14,570,000** | |

**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** | | | | | **Estimated budget** (US$) | **Potential Partners** |
|---|---|---|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | | |
| **AA 3.1.**Reversing, controlling or reducing sedimentation of water bodies of the Lake and its tributaries | **A3.1.1.** Rehabilitate and protect headwaters of the tributaries of Lake Chad | | | | | | 2,500,000 | **4,600,000** |
| | **A3.1.2.** Integrated anti-erosion management of various catchments of the Chalawa Gorge Dam in Kano-North Nigeria (Studi, 2015) | | | | | | 800,000 | |
| | **A3.1.3.** Undertake targeted bank stabilisation initiatives for the Logone and the Maga Lake weir (Studi, 2015) | | | | | | 700,000 | |
| | **A3.1.4.** Control the obstruction by invasive plants of channels and tributaries that supply water to the Lake | | | | | | 600,000 | |
| **AA 3.2.** Reversing, controlling or reducing silting in the river system and throughout the active Lake Basin | **A3.2.1.** Carry out dune stabilisation and planting of windbreaks | | | | | | 1,200,000 | **1,900,000** |
| | **A3.2.2.** Initiate activities to desilt waterways and road networks, rivers, and lakes | | | | | | 700,000 | |
| **AA 3.3** Targeted dredging of portions of the Lake and tributaries to improve filling and navigability conditions of the Lake and tributaries | **A3.3.1.** Map reaches and areas of the Lake for targeted dredging activities | | | | | | 50,000 | **1,250,000** |
| | **A3.3.2.** Conduct dredging in identified priority sites | | | | | | 1,200,000 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AA 3.4.** Promoting agropastoral practices based on efficient land and water management techniques | **A3.4.1.** integration of agriculture, livestock and forestry | | | | | | 490,000 | **690,000** |
| | **A3.4.2.** Promote integrated land and water management practices | | | | | | 200,000 | |
| **AA 3.5.** Promoting reforestation/revegetation of lands in the Lake Chad basin | **A3.5.1** Support reforestation campaigns throughout the Basin in partnership with the Great Green Wall Initiative | | | | | | 500,000 | **1,200,000** |
| | **A3.5.2** Promote deferred grazing and natural regeneration initiatives | | | | | | 300,000 | |
| | **A3.5.3** Support bush fire control activities | | | | | | 400,000 | |
| **TOTAL** | | | | | | | **9,640,000** | |

| **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** | | | | | **Estimated budget** (US$) | **Potential Partners** |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | | |
| **AA 4.1.** Knowledge of climate developments and identifying areas of vulnerability to climate change | **A4.1.1** Conduct studies on climate change scenarios in the Lake Basin | | | | | | 150,000 | **800,000** |
| | **A4.1.2.** Identify areas, ecosystems, productive systems, and groups most vulnerable to variability and climate change | | | | | | 100,000 | |
| | **A4.1.3** 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 DA 1.1]. | | | | | | 350,000 | |
| | **A4.1.4** Put in place a system to monitor the outbreak and spread of zoonoses | | | | | | 200,000 | |
| **AA 4.2.** Strengthening the resilience of production systems | **A4.2.1.** Promote diversification of production systems (contribute to mitigating efforts: green manure; alternative energy in wind pumping, solar, eco-farms, and integrated community farms) | | | | | | 3,000,000 | **8,800,000** |
| | **A4.2.2.** Promote water management in agriculture (irrigation) | | | | | | 1,500,000 | |
| | **A4.2.3.** Support the collection and storage of rainwater | | | | | | 2,500,000 | |
| | **A4.2.4.** Encourage the conjunctive use of rain, surface, and groundwater resources in agriculture as an adaptation measure to climate variability | | | | | | 1,200,000 | |
| | **A4.2.5.** Support the sustainable management of oasian cuvettes (Northern section of the Lake Chad watershed basin) and their diversified production systems | | | | | | 600,000 | |
| **AA 4.3.** Strengthening the resilience of ecosystems | **A4.3.1** Conduct studies on ecosystem water need and contribute to defining related environmental flows | | | | | | 150,000 | **450,000** |
| | **A4.3.2** Implement management mechanisms for hydraulic infrastructure and water abstractions that allow for environmental flow, especially for sensitive ecosystems | | | | | | 300,000 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AA 4.4.** Designing and implementing special protection measures for vulnerable groups | **A4.4.1** Design and implement social safety nets for the most vulnerable groups | | | | | | 2,500,000 | **5,800,000** |
| | **A4.4.2** Improve access to land and strengthen land tenure security for disadvantaged groups | | | | | | 500,000 | |
| | **A4.4.3** Establish income-generating initiatives for women, youth, and vulnerable groups while opening up markets to producers | | | | | | 2,800,000 | |
| **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. | | | | | | 100,000 | **350,000** |
| | **A4.5.2** Ensure the effective implementation of the flood warning and disaster response plan (taking into account flood risks) | | | | | | 250,000 | |
| **TOTAL** | | | | | | | **16,200,000** | |

**OBJ-5 (CC) Create an enabling governance framework to implement the SAP effectively**

| Action Area | Action | Timeline | | | | | Estimated budget (US$) | Potential Partners |
|---|---|---|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | | |
| **AA5.1.** Promoting, operationalising, and effectively implementing relevant provisions of the Lake Chad Basin Water Charter | **A5.1.1** Support the dissemination of the Charter, including, as needed, its translation into national languages | | | | | | 150,000 | **800,000** |
| | **A5.1.2** Support Member States in updating and aligning their national legal and regulatory frameworks to the provisions of the Charter | | | | | | 150,000 | |
| | **A5.1.3** Support the development and implementation of pilot experiments of provisions of the Charter (e.g., "Abstractor-Pays," "PolluterPays," etc.) | | | | | | 400,000 | |
| | **A5.1.4** Capitalise on the experiences of implementing provisions of the Charter and engage in an inclusive dialogue on lessons learned | | | | | | 250,000 | **8,800,000** |
| **AA 5.2.** Promoting and popularising relevant provisions of international water conventions - Water Convention (Helsinki, 1992) and Watercourses Convention (New York, 1997) | **A5.2.1** Support initiatives aimed at disseminating international conventions on water (Helsinki 1992 and New York 1997) | | | | | | 120,000 | |
| | **A5.2.2** Conduct awareness-raising activities and advocate for the ratification of water conventions by LCBC Member States | | | | | | 120,000 | |
| | **A5.2.3** Support the national and regional implementation of relevant provisions of international water conventions | | | | | | 100,000 | |
| **AA 5.3.** Promoting inclusive and equitable management of shared resources and strengthening capacity in the field of hydrodiplomacy to contribute to the return of sustainable peace. | **A5.3.1** Conduct a study on identifying areas at risk of transboundary conflict | | | | | | 60,000 | |
| | **A5.3.2** Develop LCBC capacities in preventing and resolving transboundary resource utilisation conflicts | | | | | | 500,000 | |
| | **A5.3.3** Foster and create opportunities for dialogue and transboundary cooperation between local administrative units and local communities | | | | | | 600,000 | |
| | **A5.3.4** Promote joint inter-state hydraulic and major hydroelectric projects (common facilities or facilities of common interest) - Water Charter, Chapter 11 | | | | | | 3,000,000 | |
| | **A5.3.5** Promote the benefit-sharing approach in the LCB and future inter-state investment projects - Water Charter, Chapter 12 (Article 76) | | | | | | 1,000,000 | |
| | **A5.3.6** Strengthen the capacity of LCBC and Member States in hydro-diplomacy in the LCB | | | | | | 700,000 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AA 5.4.** Ensuring gender mainstreaming and strengthening the role of women in protecting and sustainably using LCB resources | **A5.4.1** Ensure that the need for disaggregated data collection is reflected in the LCB and Member State programmes | | | | | | 80,000 | |
| | **A5.4.2** Initiate popularisation programmes and sustainably use local natural resources for women and young people as a priority | | | | | | 2,500,000 | |
| | **A5.4.3** Support information and awareness-raising activities for women in preventing and managing water-borne diseases, household waste management, etc. | | | | | | 500,000 | |
| **AA 5.5.** Strengthening LCBC's level of preparedness for the effective implementation of the SAP | **A5.5.1** Develop and implement a communication and funding mobilisation plan for the SAP | | | | | | 150,000 | **7,450,000** |
| | **A5.5.2** Develop and implement a monitoring and evaluation system for the SAP and support the establishment and implementation of the LCBC information system | | | | | | 300,000 | |
| | **A5.5.3** Implement relevant recommendations of the recently completed organisational and institutional audit | | | | | | 2,500,000 | |
| | **A5.5.4** Strengthen the capacity of LCBC and Member State experts in formulating bankable projects for innovative funding (climate funds, mixed funding, etc.) | | | | | | 300,000 | |
| | **A5.5.5** Strengthen the technical capacity and operational resources of LCBC for the effective implementation of the SAP | | | | | | 4,200,000 | |
| **TOTAL** | | | | | | | **17,760,000** | |

## Appendix 2: Ongoing, Recent and Planned Programmes and Projects in the Lake Chad Basin

| Title of Programme or Project | Main TFPs | Budget | Currency | Implementation Period | | | | | | | | | | | Relevant Action Area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | # | # | |
| PAIBLT | AfDB/ADF & LCBC | 11.11 million | UA/AfDB | 2006 → 2014 | | | | | | | | | | | Fight against malaria and other diseases; reduce STI/HIV/AIDS-related vulnerability and risks of communities living around the Lake Chad Basin (LCB) |
| PRODEBALT | AfDB | 30 million | UA/AfDB | 2008 → 2017 | | | | | | | | | | | Rehabilitate and conserve the productive capacities of the ecosystems of the Lake Chad basin in the context of adapting production systems to climate change |
| PRESIBALT | AfDB-GEF/ NESCOLCBC | 71.23 million | UAAfDB | 2015 → | | | | | | | | | | | Improving the resilience of people living on the resources of the Lake Chad Basin |
| BIOPALT | AfDB (PRESIBALT)-UNESCO-IUCN Etc. | 6.45 million | USD | | | | | | | | | | | | Designation of biosphere reserves; World Heritage sites; early warning |
| RSS | AU- UNDP | USD 12 billion to be sought; EUR 2 billion announced at BerlinOslo II Conference | USD & EUR | | | | | | | | | | | | Political cooperation, security and human rights, disarmament, demobilisation, rehabilitation, reinsertion, and reintegration of people associated with Boko Haram, humanitarian assistance, governance and social contract, socio-economic recovery and environmental sustainability, education, learning and skills, prevention of violent extremism and peacebuilding and empowerment and inclusion of women and youth. |
| DAPLC | WB-FDA | 916 million to be sought | EUR | 2016 → | | | | | | | | | | | Production of food and monetary resources, employment; Support to producers and sectors; Securing access to natural resources, prevention, and management of conflicts; Facilitation of transport and trade; Public investments; Environmental capital of the Lake; Management of water resources on a Basin-scale; Dissemination of information, improvement of knowledge and monitoring of the environment |
| PURDEP | Member States | 37.5 billion | FCFA | 2015 → | | | | | | | | | | | Wealth creation/poverty alleviation activities; Socioeconomic infrastructure; Socio-professional integration |
| LCBC - BGR Project | BMZ | 15 million | EUR | 2007 → | | | | | | | | | | | Knowledge of water resources: availability and quality; Sustainable management of groundwater resources in the Lake Chad Basin |
| LCBC - GIZ Project | BMZ | 21 million | EUR | 2013 → | | | | | | | | | | | Climate change adaptation; Organisational consultancy; Applied water resources management in the Lake Chad Basin |
| PARSEBALT | AfDB | 13 million | UA/AfDB | | | | | | | | | | | | Addressing youth unemployment and idleness; Revitalising economic activities in the region; Building capacity for resilience and adaptation to climate change |
| LCBC-GEF-UNDP Project | GEF - UNDP | 6.08 million | USD | | | | | | | | | | | | Capacity building; effective and sustainable management of land, water, and biodiversity resources; sustainable management of ecosystems and alternative livelihoods; SAP; knowledge/information; stress reduction |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROLAC-LCBC | WB | 5 million | USD | | | | | | | | | | | | Knowledge/regional knowledge and monitoring platform; restoration of rural livelihoods |
| LCBC-GEF-AfDB Programme | GEF- AfDB | 20.3 million | USD | | | | | | | | | | | | Maintain ecosystem services in the Lake Chad Basin by preserving aquatic and agrosilvo ecosystems and ensuring sustainable resource use in a context of energy efficiency and food |

## ACRONYMS

| | |
|---|---|
| **BIOPALT** | Lake Chad Biosphere and Heritage Project |
| **PAIBLT** | Project in Support of the Lake Chad Basin Initiative to Reduce Vulnerability to and the Risks of STI/HIV/AIDS |
| **PARSEBALT** | Project to Support the Socio-Economic Reintegration of Vulnerable Groups in the Lake Chad Basin |
| **DAPLC** | Development and Adaptation Plan for Climate Change in Lake Chad |
| **PRESIBALT** | Programme for the Rehabilitation and Strengthening of the Resilience of Socio-ecological Systems in the Lake Chad Basin |
| **PRODEBALT** | Sustainable Development Programme of the Lake Chad Basin |
| **LCBC-GEF-AfDB Programme** | Lake Chad Basin Regional Programme for the Conservation and Sustainable Use of Natural Resources and efficiency |
| **LCBC-BGR Project** | Sustainable Management of Groundwater Resources in the Lake Chad Basin" |
| **LCBC-GEF-UNDP Project** | Improving the management of the Lake Chad Basin by implementing the SAP for the Lake Chad Basin to strengthen climate change resilience and reduce stress on the ecosystem." |
| **LCBC - GIZ Project** | Applied Water Resources Management in the Lake Chad Basin |
| **PROLAC** | Lake Chad Region Recovery and Development Project |
| **RSS** | Regional Strategy for the Stabilisation, Recovery and Resilience of the Areas of Lake Chad Basin Affected by Boko Haram: https://cblt.org/strategie-de-stabilisation-regionale |

## Appendix 3: Illustrative Examples of the Consideration of Various SAP-EQOs in the LCB Water Charter

**EQO 1 - Availability of surface and groundwater resources**

- Chapter 2 of the Charter "Quantitative management of surface and groundwater resources", in particular:
  - Section 1 (Equitable and reasonable utilisation in terms of quantity)
  - Section 2 (Abstraction management)
  - Section 3 (Special provisions for ground water)
- Chapter 3 on "Protection and preservation of water quality in the basin's aquatic ecosystems": - Section 1 (Prevention of pollution)
- Annexe 2 of the Charter on "Setting basin-wide limits for abstractions from the Lake, tributaries and alluvial groundwater"
- Annexe 4 of the Charter on "Establishing procedures for recording abstractions"

**EQO 2 – Biodiversity Conservation**

- Chapter 3 on "Protection and preservation of water quality in the basin's aquatic ecosystems":
- Section 2 (Conservation of Biological Diversity)
- Section 3 (Special provisions for fisheries)
- Annexe 3 on "Establishing environmental flows at key stations in the Basin and abstractions from reaches between key stations"

**EQO 3 - Sediment and Silting Control**

- Chapter 3 on "Protection and preservation of water quality in the basin's aquatic ecosystems": - Section 4 (Special provisions for herding)

**EQO 4 - Strengthen the Resilience to Variability and Climate Change:**

- Chapter 4 on "Emergency planning and preparedness to ensure the protection of people, the environment and water resources" All EQO in particular, 1, 2 and 3:
- Chapter 9 on "Enforcement of environment, water, fishing and Navigation rights and regulations"

## Appendix 4: References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