REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title: LCB-NREE Nigeria child project: Comprehensive and integrated management of natural resources in Borno State			
Country(ies):	Nigeria	GEF Project ID:[1]	9161
GEF Agency(ies):	AfDB (select) (select)	GEF Agency Project ID:	P-Z1-CZ0-001
Other Executing Partner(s):	Lake Chad Basin Commission (LCBC)	Submission Date:	20.10.2016
GEF Focal Area (s):	Multifocal Area	Project Duration(Months)	60
Name of Parent Program (if applicable): ➢ For SFM/REDD+ ☐ ➢ For SGP ☐ ➢ For PPP ☐	Lake Chad Basin Regional Program for the Conservation and Sustainable Use of Natural Resources and Energy Efficiency (LCB-NREE)	Project Agency Fee ($):	331,315

A. FOCAL AREA STRATEGY FRAMEWORK[2]

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount ($)	Cofinancing ($)
(select) BD-2	Outcome 2.1: Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation	Output 2.2 National and sub-national land-use plans (number) that incorporate biodiversity and ecosystem services valuation	GEF TF	456,775	3,596,834
(select) LD-1	Outcome 1.2: Improved agricultural management	Output 1.2 Types of innovative SL/WM practices introduced at field level Output 1.3 Suitable SL/WM interventions to increase vegetative cover in agroecosystems	GEF TF	415,000	3,267,876
(select) LD-2	Outcome 2.2: Improved forest management in drylands	Output 2.2 Types of innovative SFM practices introduced at field level Output 2.3 Suitable SFM interventions to increase/ maintain natural forest cover in dryland production landscapes	GEF TF	407,195	3,206,417
CCM-3 (select)	Outcome 3.2: Investment in renewable energy technologies increased	Output 3.2 Renewable energy capacity installed	GEF TF	1,827,102	13,473,554
(select) SFM/REDD+ - 1	Outcome 1.2: Good management practices applied in existing forests	Output 1.2 Forest area (hectares) under sustainable management, separated by forest type Output 1.3 Types and quantity of services generated through SFM	GEF TF	1,035,357	8,152,819
		Total project costs		4,141,429	31,697,500

B. PROJECT FRAMEWORK

[1] Project ID number will be assigned by GEFSEC.
[2] Refer to the Focal Area Results Framework and LDCF/SCCF Framework when completing Table A.

Project Objective: To maintain the provision of ecosystem services in Nigeria's Borno state by preserving agro- and forest ecosystems in a context of improved production, conservation and renewable energy to secure multiple environmental and socio-economic benefits

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount ($)	Confirmed Cofinancing ($)
1. Integrating sustainability and conservation into production landscapes to improve ecosystem functioning and local livelihoods	TA	1.1 Local investments in SLWM increase agro- and forest ecosystem productivity in fragile dryland contexts	1.1.1 SLWM techniques applied to a total of 2000 ha to reduce land degradation and improve productivity (climate smart, biological measures, etc.) 1.1.2 500 ha of land under agro-forestry practices and 500 ha under farmer managed Assisted Natural Regeneration 1.1.3 Micro/drip irrigation and water harvesting systems scaled-up on 500 ha to improve water use efficiency 1.1.4 Biological measures applied to 1500 ha for erosion control and soil fertility: cover cropping, use of natural fertilizers (mulching and other harvested biomass), minimum or zero tillage	GEF TF	747,000	5,721,963
		1.2 Integrated management of productive landscapes, including wetlands and dryland forests, restores habitats and helps secure benefits at all scales	1.2.1 Reforestation/revegetation measures (total 1000 ha) to rehabilitate landscape and protect habitats: indigenous tree, shrub and grass planting, euphorbia windbreaks/shelterbelts, small reforestation and biological soil fixation along Komadogu-Yobe banks and wetlands 1.2.2 Conservation set-asides along vulnerable wetland areas for 100 km to preserve biological corridors 1.2.3 5000 farmers trained on SLWM, tree planting techniques, natural regeneration, with climate awareness 1.2.4 Enhanced capacity of state agencies on INRM and integrating biodiversity considerations into land-use planning: 10 trainings			
		1.3 INRM is improved to sustain, diversify and make resilient local livelihoods	1.3.1 The soil and water conservation areas are maintained and monitored in 50 communities to protect soil, forest and biodiversity			

		from the stable provision of ecosystem goods/ services within the basin	1.3.2 Raised household incomes from diversified production based on biodiversity-friendly goods through new crop and forestry activities: o 3000 women in select communities supported to develop income generating activities linked to agro-forestry and timber or non-timber forest products (fodder, fruit tree cultivation, beekeeping) o Distribution of 5000 fruit trees to youth			
2. Scaling up INRM and alternative energy measures to maintain the flow of goods/services from agro- and forest ecosystems	Inv	2.1 Investments in renewable energy (RE) technologies at local scale for agro- and domestic needs result in enhanced productivity and reduced pressure on forest ecosystems	2.1.1 Investments in RE alternatives for agro-services: 25 solar water pumping systems (SWPSs) established 2.1.2 Improved stoves program implemented: 200,000 solar cook stoves distributed to households (50 to schools) 2.1.3 Training on the use and maintenance of RE technologies: 25 user groups trained, 20 training sessions targeting women, overall minimum 80% women participation	GEF TF	2,283,000	17,550,549
		2.2 Enhanced forest management practices regenerate dryland landscapes, protect the basin and improve flows of forest ecosystem goods/services	2.2.1 Management plan for 500 ha of natural forest (socio-economic analysis and survey of forest users; area inventoried, demarcated and mapped), including a biodiversity and ecosystem services valuation 2.2.2 Borders between agricultural, livestock and forest land defined (GIS map of Borno) including sub-basin maps of biodiversity-rich habitats 2.2.3 Two community forests created, with management guidelines developed and tested, and awareness/sensitization campaign on importance of trees and environmental protection			
		2.3 Restored landscapes improve livelihoods of resource dependent people, increase vegetative cover, and reduce GHG emissions	2.3.1 4000 ha of woodlots/nurseries, with local drought resistant species, and community forests, established on community and private lands 2.3.2 500 ha of natural forest land rehabilitated: domestic energy alternatives, woodlots and SFM measures reduce the consummation of wood, deforestation, and sustain			

			fuelwood and fodder supply in target areas (tons of CO2) 2.3.3 Improved awareness and acceptance of clean energy technologies among local communities in Borno state: 5000 households using RE alternatives instead of traditional approaches			
3. Improving and consolidating knowledge, data and monitoring	TA	3.1 Information improved and data standardized for better monitoring and planning of resources across the basin	3.1.1 An information management system established to feed standardized data and information needs to the regional level (in conjunction with regional project and in cooperation with LCBC and its Observatory) 3.1.2 Strengthened monitoring through regular biological, hydrological and socio-economic audits, including trends in deforestation and desertification with GIS, in collaboration with LCBC 3.1.3 Good practice guidelines for SLWM and SFM disseminated and used for component 1 and 2 activities	GEF TF	915,000	7,109,622
		3.2 Enhanced institutional capacity for integrated and coordinated management of natural resources	3.2.1 Training program for state agencies to enhance technical capacity on INRM and landscape planning, with considerations for climate change: o Support provided for the collection, processing and monitoring of data/information on basin resources, biodiversity and water quantity/quality o Support provided for implementation in child projects of measures developed under IW and baseline: e.g. GIS, environmental safeguards, hydrological monitoring, etc. o Support to implement and monitor project activities 3.2.2 Staff expertise improved through 10 trainings in data collection/standardization techniques, GIS, M&E, etc.			
		3.3 Better knowledge sharing and public awareness fosters improved sub-	3.3.1 A communication / information strategy prepared and implemented with tools developed for enhanced awareness of basin-relevant information: promotional media			

		catchment participatory management and the monitoring of project, program and socio-economic indicators	campaign (radio, TV, newspapers), hand bills, posters, etc. 3.3.2 Participatory M&E tools developed: monitoring and reporting system functional and disseminating knowledge on project progress and the basin 3.3.3 Transfer of lessons, experiences and best practices through websites, communication tools, technical forums, etc.			
Subtotal					3,945,000	30,382,135
Project management Cost (PMC)[3]				GEF TF	196,429	1,315,366
Total project costs					4,141,429	31,697,500

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME ($)

Please include letters confirming cofinancing for the projeSct with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount ($)
GEF Agency	AfDB	Soft Loan	31,697,500
Total Co-financing			31,697,500

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in $)		
				Grant Amount (a)	Agency Fee (b)[2]	Total c=a+b
AfDB	GEF TF	Biodiversity	Nigeria	456,775	36,542	493,317
AfDB	GEF TF	Land Degradation	Nigeria	822,195	65,776	887,971
AfDB	GEF TF	Climate Change	Nigeria	1,827,102	146,168	1,973,270
AfDB	GEF TF	Multi-focal Areas		1,035,357	82,829	1,118,186
Total Grant Resources				4,141,429	331,315	4,472,744

[1] In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

[2] Indicate fees related to this project.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount ($)	Cofinancing ($)	Project Total ($)
International Consultants	906,125	7,104,622	7,382,003
National/Local Consultants	750,000	6,635,738	8, 014,842

G. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? No

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

PART II: PROJECT JUSTIFICATION

[3] PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF[4]

A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.

The main change between the LCB-NREE PFD and the CEO endorsement documents is a change in baseline project from the 'Lake Chad Basin Sustainable Development Program (PRODEBALT)' to the 'Multinational Program to Rehabilitate and Strengthen the Resilience of Lake Chad Basin Systems (PRESIBALT)'. PRESIBALT was approved by the AfDB Board in January 2015 as a second phase of the PRODEBALT and builds upon its lessons and interventions. This change and the time passed since preparation of the PFD (four years) necessitate an update in child project alignment to regional and national strategies and plans.

Note: Please refer to the same section in the IW regional child project for additional contextual and supporting information.

The LCB-NREE child projects are fully aligned with the Lake Chad SAP and associated National Action Programs (NAPs), continue their implementation, target the priority regional concerns as expressed in the TDA, and are guided by the 2025 Vision. While the regional IW project centers on strengthening coordination, capacity and enabling conditions at regional scale, the five national child projects seek to invest in technologies and measures to be applied locally for the restoration and conservation of basin ecosystems, which will form main elements of the GEF components as defined in each Table B. GEF support focuses on specific activities to improve sustainable and integrated natural resources management (INRM), habitat protection, landscape restoration, and livelihood alternatives which reduce pressures on Lake Chad and its basin ecosystems.

The GEF child projects all align to priorities expressed in the SAP, NAPs, TDA, LCBC 2013-2017 Five Year Investment Plan (FYIP), Water Charter, the agricultural and environmental policies of ECOWAS and ECCAS, and international agreements and national plans on wetlands (RAMSAR), climate change (UNFCCC), biodiversity (CBD), and land degradation (UNCCD) which each country has ratified. The Nigeria child project supports each of the main environmental conventions given its multi-focal nature and integrated activities that cut across four GEF focal areas. Convention-related plans have been consulted for the selection of activities that form part of each child intervention. National projects will retain some flexibility to better align with priorities of the soon-to-be updated SAP and the Lake Chad Development and Climate Resilience Action Plan (LCDAP), although these will nonetheless remain fully aligned with the Vision which remains the overall strategic guiding framework. The LCDAP's focus on resilience and improving living conditions within the basin is an underlying consideration of national projects, and the plan was also consulted closely for choice of interventions.

The Lake Chad NAPs build upon and complement the SAP and address identified environmental concerns in order to meet objectives at the national and regional level. The Nigeria NAP is based on five main actions: 1. Development of socio-economic infrastructure; 2. Conservation of ecosystems, restoration and protection of natural resources; 3. Capacity building and involvement of stakeholders in IWRM; 4. Implementation of the integrated management system of the basin; 5. Sustainable use of water resources and restoration of the environment. The Nigeria child project rests on the integrated management of natural resources within a landscape regeneration program through investments in sustainable land and water management (SLWM) and community-based alternative livelihood options (based on renewable energy and forestry management) that reduce pressure on productive and biodiversity-rich ecosystems.

In addition to meeting Nigeria's Lake Chad NAP actions, convention related priorities were considered. The increased use of renewable energy is prioritized in the second National Communication (NC) to the UNFCCC (of February 2014), in which forestry, land use change, and agriculture are identified as major contributors to national GHG emissions. Measures to address deforestation are highlighted as important means for emission reductions. Such measures also figure prominently in Nigeria's UNCCD NAP which focuses on improving productivity of land, and the rehabilitation,

[4] For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter "NA" after the respective question.

conservation and sustainable management of land and water. These needs are particularly relevant to Nigeria's northeastern regions, including Borno state, that are most affected by land degradation and advancing desertification (between 50-75%). Nigeria's UNCCD NAP highlights sustainable agriculture and livestock production systems. SLWM and SFM, including measures to ensure sustainable supplies and rational consumption of fuelwood by the populations, such as through the promotion of efficient cook stoves, are identified as priorities and have a strong part in this project.

Nigeria's NBSAP identifies the biggest threat to conservation of biological diversity as poverty. In an effort to conserve its biodiversity, the Nigerian government has made a commitment to conserve 25% of total forest area, and has placed emphasis on in situ conservation both within and outside protected areas. Alternative livelihoods and community participation in ecosystem rehabilitation and forestry management are priorities in the NBSAP, priorities reflected in project activities related to the integrated management of land, water and ecosystems. Linked to this, NAPA priorities have been considered in the selection of local demonstrations. Although not funded by any GEF adaptation funding, climate change adaptation and resilience remain huge concerns in the Lake Chad basin and in Nigeria, and both mitigation and adaptation underlie project objectives.

The AfDB has several interventions in the Lake Chad Basin countries which are based on its Country Strategy Papers (CSPs). The CSP (2012-2016) for Nigeria has infrastructure development as one of its main pillars, which includes the development of rural facilities, improving access and increasing agricultural productivity. Although the environment is not a stated target of the CSP, in recent years, Nigeria has expressed determination to pursue a more environmentally sound and sustainable socio-economic development framework. Its Vision 20:2020 is a long-term plan for launching the country onto a path of sustained socio-economic development based on productivity and wellbeing. One of its dimensions is environmental.

The Nigeria child project thus contributes to priorities expressed in Nigeria's environmental convention plans and is aligned with a number of other strategic and policy documents, including Vision 20:2020, the National Adaptation Strategy and Plan of Action on Climate Change in Nigeria (NASPA-CCN), the Agricultural Transformation Agenda, and the National Agriculture Resilience Framework (NARF). Furthermore, the operation contributes to the objectives of the Great Green Wall Initiative. Similar solutions are found in a number of national plans, reinforcing the need for the integrated, holistic response upon which the project is based.

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities.

The GEF financed LCB-NREE program will build on the baseline PRESIBALT and address additional enabling conditions for the collective management of the Lake Chad transboundary water system and actions towards the sustainable and integrated management of basin natural resources. The four over-arching components as were expressed in the PFD are still relevant to guide the program and child projects despite the baseline change:
Component 1: Increase efficiency of approaches and tools related to the consumption of natural resources and energy to bring GEBs;
Component 2: Incorporate sustainability in productive landscapes;
Component 3: Strengthening capacity and knowledge and sustainable financing for climate resilient mobilization for IWRM and WUE in the Lake Chad basin;
Component 4: Strengthening of water and ecosystems management and riparian collaboration.

Interventions falling within these four original PFD components have been elaborated into six child projects, one regional and five national. The five projects at national level are primarily focused on reducing and reversing land degradation and deforestation, conserving basin biodiversity, and promoting renewable and low carbon energy alternatives that reduce pressure on ecosystems. The activities that were outlined in the PFD to meet the expected outcomes of the program and GEF focal area strategies were meant to give an initial explanation of incrementalism. As a PFD, therefore, they were intrinsically general and additional work was required at child project preparation stage to define specific activities, measures and related on-the-ground investments. As such, the six full-sized child projects comprising the program have been developed. The CEO endorsement documents each necessitate deeper explanations of each project's own eligibility, incremental aspects and detailed activities. Activities have been selected taking into consideration the SAP/NAPs, agreed frameworks such as the Water Charter, and feedback by the GEF and STAP

following PFD submission. The general drive and underlying objectives remain the same as the PFD, but major changes are implicit within the specificity of the CEO endorsement documents.

Multi-focal funding is sought from the GEF based on the transboundary nature of the Lake Chad basin and the need for a concerted effort to address the challenges faced in conserving the ecosystems of the basin while also ensuring food security for basin populations. The LCB-NREE's strategic approach is to implement a program consisting of projects that cover multiple GEF focal areas (IW, LD, BD, CCM, and SFM). These priority areas require focused integrated activities implemented at sub-national and regional scales, to encompass the geographical scope of the Lake Chad Basin. The programmatic approach thus ensures greater coordination and that the outcomes from the child projects will be cohesive, leading to greater impact through the linking of local level to regional level. The program is mainly focused in the IW GEF focal area but its national child projects cover the other focal areas. The regional project will allow coordination of activities and ensure a comprehensive and synchronized IWRM approach, including harmonization of data from national to regional level. There are clear synergies between the priorities of the UNFCCC, CBD, and UNCCD which emphasize integration between their relevant focal area issues. The child projects will connect to the regional IW project through this underlying interlinkage. The Lake Chad basin countries (with the exception of Cameroon, based only on LD) will contribute GEF resources from LD, BD, and CCM, in addition to the SFM incentive mechanism for their child projects, creating strong bases for integration, regional scale-up and transformation.

The Nigeria project objective is to maintain the provision of ecosystem services in Borno state, riparian to Lake Chad, by preserving agro-sylvo ecosystems in a context of improved production, conservation and energy to secure multiple environmental and socio-economic benefits. It seeks to mitigate threats to the functioning of ecosystems and to rehabilitate degraded landscapes. The project and its aims are relevant to priorities of the government, LCBC, AfDB, as well as to the strategic objectives of the GEF focal areas. The entire basin of Lake Chad is an agricultural, pastoral and subsistence zone for more than 30 million people, more than half of whom are Nigerians. Nigeria's northeast regions provide good entry points for securing global environmental benefits based on the unique problems and needs of drylands. By intervening in locally appropriate soil and water conservation, agro- and forest ecosystem productivity, improved vegetation and tree cover, the project aims to reduce land and forest degradation, safeguard the hydrological cycle, and protect biodiversity. The project will ensure sustainable and integrated NRM and contribute to carbon accumulation (through measures in rehabilitation, forest protection, and alternative energy technologies). Underlying this, the resilience of natural systems and communities to climatic and other shocks will be enhanced. The project is developed using a multi-focal perspective to ensure an integrated approach that can better secure ecosystem services and multiple socio-economic-environmental benefits.

Map: Location of Borno State

Nigeria project activities target primarily LD1 (added since PFD stage), LD2, BD2, CCM3 and SFM1 associated outcomes. Joint programming between GEF focal areas is critical especially in a context of landscape planning in priority transboundary catchments and groundwater recharge areas such as the Lake Chad basin (links with IW), increasing vegetative and tree cover in dryland production landscapes (links with LD, CCM, SFM), and implementation of landscape approaches for ecosystem protection (links with BD, LD, and SFM). The project will address

anthropogenic causes of environmental degradation (primarily inappropriate land-use practices and change) and the pressures on natural resources and biodiversity in the Komadugu-Yobe sub-basin in Borno state. SFM and CCM activities will contribute to the restoration and enhancement of carbon stocks and will be linked to the dissemination of alternative energy sources, resulting in reduced pressure on forests and woodlands linked to fuelwood collection, charcoal production and use. Through INRM, the project seeks to achieve multiple environmental benefits at different scales, including those related to land restoration, the conservation and sustainable use of biodiversity, climate change mitigation (contributing to carbon sequestration) and adaptation, and combating land degradation/ desertification/ deforestation seriously affecting Borno state.

Project activities will directly address challenges in Borno state by promoting community based SLWM and SFM practices which generate sustainable flows of ecosystem services in drylands (LD1, LD2, SFM1), and through activities and enabling conditions that reduce pressures on habitats, natural resources and the productive landscape (LD1, LD2, BD2). Furthermore, by supporting reduced deforestation and RE technologies, the project will promote low carbon energy alternatives to traditional household approaches (CCM3), which also reduce pressure on forests and maintain flows of forest ecosystem services (LD2, SFM1). To improve ecosystem stability and functioning, project activities will support improvements in and diversification of livelihoods, linked to the conservation of biodiversity in production landscapes (BD2). The project fully incorporates cross-cutting considerations for livelihoods, food security and climatic resilience in the integrated management of resources within a transboundary basin (IW).

The Nigeria project design seeks synergies to realize local, regional and global benefits and also guarantees knowledge creation on the links and interdependency between resource users and uses (agriculture, surface and groundwater, biodiversity and energy), so important in a transboundary basin and drylands. The maintenance of habitats and productive areas (wetlands, dryland forests, croplands, etc.) will be improved in order to achieve multiple environmental benefits related to the GEF goals, with added repercussion of reducing pressure on existing protected areas. Moreover, activities will increase production and thus help to sustain the basin needs of local communities. Given the fragility of the Sahelian landscape, the role of Lake Chad as an oasis within a dryland, and rising regional security concerns, it is ever more critical to secure this ecosystem for all the benefits it brings, environmentally and socio-economically.

A.3 The GEF Agency's comparative advantage:

The AfDB has a strong portfolio in the Lake Chad region in line with regional priorities, sector strategies in the different countries and country strategy papers. The AfDB has financed several regional and country-level operations for Nigeria. The regional operations of which Nigeria was part include: (i) Lake Chad Sustainable Development Program (PRODEBALT); (ii) the Water Charter Project financed by the African Water Facility (AWF); (iii) the Pilot Research/Development Support Project on Integrated Pest Management (IPM) for Subsistence Farming in the Lake Chad Basin; (iv) the Support Project to Lake Chad Basin Initiative for the Reduction of Vulnerability and Risks related to STIs/HIV/AIDS (LCBCI); and (v) the Central Africa Biodiversity Conservation Program - Protection of Elephants. Furthermore, the Bank has financed several ecosystem based and transboundary operations including: (i) Silt Control in the Niger River Basin; (ii) Lake Tanganyika Integrated Regional Development Program (PRODAP); (iii) the Project to Restore the Ecological and Economic Functions of Lake Guiers in Senegal; (iv) Multinational Lakes Edward & Albert Integrated Fisheries and Water Resources Management Project, with a GEF component; and (v) other resilience interventions for the Sahel, primarily the Program to Build Resilience to Food and Nutrition Insecurity in the Sahel (P2RS). National projects are in line with the CSP and focus mainly on infrastructure development and creating a sound policy environment, such as the support program to Nigeria's Agricultural Transformation Agenda Phase I (ATASP-I).

The AfDB is considered a lead technical and financial partner for Lake Chad and is entrusted with mobilizing resources required for the implementation of the LCBC 2013-2017 FYIP. PRESIBALT and the GEF program will advance the Bank's leadership in the drive to address fragilities in the Lake Chad basin, promote inclusive development by facilitating a coordinated management of water resources, and safeguard Lake Chad over the long-run. The said water resources are the main factors of production locally, the interactions of which generate an array of services indispensable to the communities and basin health. In addition to protecting a world heritage, the Bank's value added lies in consolidating outputs of past operations, specifically by continuing activities in governance, silt control and agricultural land rehabilitation, and applying lessons learned during the implementation of previous programs. By addressing the sustained management of basin water resources as well as regional integration, PRESIBALT addresses

community vulnerability, agriculture, food security, and climate change issues. The LCB-NREE program and each of its child projects will be implemented as part of the PRESIBALT and incremental GEF activities will be fully integrated within the baseline itself.

PRESIBALT enables the AfDB to extend its support to resilience building and the reduction of fragility in Africa, strengthening ongoing operations in the Sahel. The program supports and complements the actions of PRODEBALT and the AWF by implementing the guidelines and feasibility studies prepared previously, such as those aimed at checking silting and erosion, and the Water Charter itself. The AfDB intervention will serve as a means for strengthening institutional dialogue with the countries and other partners at regional level. The main challenges presented in the supervision and completion reports of projects implemented with the LCBC are related to: LCBC's limited capacities to execute projects directly, lengthy procurement time frames, and the slow pace of implementation of activities on the ground. Due regard has also been paid to lessons learned during performance reviews of the Bank's multinational operations including: (i) development and floodplain flooding options stemming from pilot tests conducted in the Waza-Logone plain; (ii) technical silt/erosion control choices and soil restoration measures experimented during PRODEBALT and the Niger Project; (iii) need for an institutional arrangement to ensure effective implementation of a multinational operation in coordination with States; (iv) choice of procurement methods based on the nature of activities and type of operators in the project area; and (v) mobilization of counterpart contributions, gender mainstreaming and performance monitoring. These have informed the design of PRESIBALT and will be given strong consideration during implementation for improvement. The AfDB is thus in an ideal position to assimilate knowledge from interventions past and continue the momentum for SAP/FYIP/NAP operationalization.

The PRESIBALT and GEF program designs reflect lessons learned during the above-mentioned operations and also those of other stakeholders such as GIZ, BGR, UNDP, World Bank and IUCN in the region. An experience learning and adaptive approach will continue throughout the new project, given new realities and actions on the ground in the past years and currently on-going. There is ever stronger interest of the AfDB in the Sahel, given its extreme fragility and regional insecurities, and Lake Chad itself. As such, the AfDB is well suited to such a program and to help ensure sustainability of basin interventions and alignment with priorities and planned investments in the basin.

At the regional level, LCBC staff will be reinforced to ensure the sound implementation of the regional and child projects. At country level, project offices will be opened to coordinate the implementation of activities, working closely with state services. The availability of AfDB field offices in the region (Nigeria, Cameroon, and Chad) will be an additional support to the implementing actors. Regular AfDB monitoring, including a mid-term supervision mission that helps address and correct issues, allows to retain flexibility as needed.

A.4. The baseline project and the problem that it seeks to address:

Given delays in project preparation, the AfDB baseline for this GEF intervention has changed. The primary change between the PFD and its CEO endorsement documents is therefore a change in baseline project from PRODEBALT to PRESIBALT. PRODEBALT followed from a previous UNDP-World Bank-GEF project entitled 'Reversal of Land and Water Degradation Trends in the Lake Chad Basin Ecosystem' under which both the TDA and SAP were prepared. PRODEBALT was the first major project focused on the initial implementation of the SAP. PRESIBALT follows directly from the PRODEBALT as a successive phase and builds upon its lessons and interventions. Furthermore, additional donor and partner interventions and assessments (even scientific) since the preparation of the PFD have altered some realities on the ground, changing the overall baseline context, and thus requiring a new review of the context and a rethinking or revision of envisioned activities in order to build on interventions and progress by avoiding duplication. Nonetheless, the LCB-NREE program objectives and overall guiding components as provided in the PFD remain fully relevant with the new baseline. The required detailing of project activities underlines the child projects. To note further, in the PFD, additional AfDB national baseline projects (ongoing or pipeline) for each country were identified at the time as co-financing. However, to avoid risks or unsuitable baseline projects, only PRESIBALT will now count as co-financing.

PRODEBALT was originally conceived in response to observed reductions of water flows and quality, loss of biodiversity, and erosion and siltation problems which affect Lake Chad. Progress was made in aspects related to soil restoration, water conservation, erosion control, removal of invasive plant species, channel rehabilitation, agro-forestry,

local biodiversity conservation (e.g. kouri cattle), fish preservation, and income generation activities. PRESIBALT will apply lessons learned from PRODEBALT, thereby stepping up successful interventions, making revisions where needed, and increasing effectiveness of outcomes and LCBC project management. As an example, during PRODEBALT, some communities rejected new technologies and practices, such as the planting of trees on their farmlands. Not enough sensitization and involvement of communities was pursued which will be remedied this time around. PRESIBALT is the natural continuation, still coherent with the SAP and Vision 2025, and with the stated objective to better socio-ecological conditions in the region for improved resilience and sustained inclusive development. PRESIBALT has the added urgency of improving the local socio-economic context given security concerns in the region from Boko Haram.

The continued degradation of the fluvio-lacustrine productive systems of the Lake Chad basin and an increase in local poverty, vulnerability and regional insecurity have mobilized the international community to take more action on Lake Chad in order to reverse current degradation trends. Various interventions have been planned, including large infrastructure projects such as the Water Transfer Project from the Ubangi River to Lake Chad. However, potential environmental and social consequences of such large interventions, in addition to their high costs, underline the extreme necessity, as a first step, to search for a better utilization of available water resources and protection of the basin resources, which will enhance productivity of existing lands. Such an approach reaffirms the need for an integration of regional and national socio-economic needs concurrently with environmental needs.

Note: Please refer to the IW regional child project for background information on Lake Chad.

Lake Chad Basin countries are affected to varying degrees by the degradation of productive ecosystems caused by the Lake's natural variability, climate change and human actions. These ecosystems are exposed to stresses which anthropogenic factors have worsened, and will continue to worsen. Lake Chad is a source of livelihood for millions of people inhabiting the catchment. The value of the lake and basin is in the ecosystem services they provide, particularly valuable in a Sahelo-Saharan-Sudano context characterized by aridity and the unreliable and shrinking availability of water resources. The region is a food exporting hub, playing a key role for food security of a hinterland with nearly 15 million inhabitants and two metropolitan centers, N'Djamena in Chad, and Maiduguri, the capital of Nigeria's Borno state. The area has high potential with regards to food production and employment but the impact of the lake depletion has severe repercussions, especially on the basin populations that depend on its natural capital and face extreme challenges of poverty. Continued depletion of basin water resources could result from reduced rainfall due to climate change, increased siltation and pollution due to improper land use practices, or to significant increases in water withdrawals from the rivers feeding the Lake mainly from Nigeria, Cameroon, and Chad. The basin is a fragile socio-economic system and both communities and ecosystems experience extreme vulnerabilities and insecurities.

The conventional basin of Lake Chad in Nigeria comprises its Lake Chad access, the Komadugu-Yobe and the drainage basins of Borno. These basins face several challenges, notably population pressures, the negative consequences of drought in the years 1970 and 1980, and the impact of poor water management. Nigeria also faces considerable challenges with its land resources, including loss of arable land, conversions, vegetation degradation and increasing desertification, especially in its northern-most states, Borno especially. Land degradation and biodiversity loss are increasing due to both man-induced and natural causes, with key factors being climatic variability and poor land use practices.

Northern Nigeria, in which lies Borno state, is semi-arid with low average annual rainfall. These areas are major producers of livestock and staple cereals such as millet, corn, sorghum wheat, beans, and groundnut which are critical for food security. However, vegetation and production in these regions face threats from deforestation (mainly from growing demand for fuelwood), overgrazing by livestock, continuous over-exploitation of marginal lands, and poor agricultural methods, including pesticide use, that fail to conserve soils and pollute lands and waters. According to some estimates, Nigeria loses about 350,000 ha of land every year to desert encroachment. The extent and severity of desertification in Nigeria has not been fully documented, including the rate of its progression. However, there is general consensus that desertification is the most pressing environmental problem in the northern parts of the country with visible signs in the gradual shift and loss in vegetation.

Resource degradation in Nigeria's drylands results from drought, low and declining soil fertility, depletion of surface and groundwater resources, low forest cover, and inadequate capacity for program planning, formulation and implementation. Consequently, the levels of food crops and livestock production in these areas have declined and cannot meet local food requirements anymore. These problems are exacerbated by the inability of communities to cope as a result of poverty and low technological development which affect the agricultural capability of farmers, and the poor elasticity of dryland ecosystems to worsening environmental conditions. In Borno state, the situation is exacerbated by shrinking water levels of rivers, wetlands, and water bodies in the Lake Chad basin and other sub-basins, especially the Komadogu-Yobe.

The Komadogu-Yobe sub-basin covers 148,000 km2 in northern Nigeria and southern Niger, with 95% of the basin's water in Nigeria. The sub-basin is a standard example of a tributary basin which loses most of its flows by infiltration or evapotranspiration. The basin is drained by two main river sub-systems: the Komadugu Yobe and the Komadugu Gana, with the Yobe River flowing directly into Lake Chad. Rainfall variability and frequent drought conditions leave communities unable to cope with change and shocks. Water flows into and from the rivers have fallen drastically due to the combined effects of dams, water abstractions for large-scale irrigation and regional climate change and variability. Consequently, total water inflow into Lake Chad has diminished as well, contributing to its shrinkage, particularly in the northern half of the lake. Large unsustainable irrigation projects in Nigeria, Niger, Cameroon, and Chad have for decades been diverting water from the lake and the major contributing rivers, the Chari and Logone system, as well as from the Komadugu-Yobe basin. Due to the high number of dams and people, poor management of the waters of the Komadugu-Yobe fluvial system has negatively altered the overall hydrological regime, with impact on water bodies and wetlands, including the Hadejia-Nguru, first Ramsar site of Nigeria, and Dagona, a sanctuary for birds, both found in this basin. The drainage basins of Borno contain important protected areas, notably the Sambisa Reserve (important for the conservation of elephants) and the Chingurimi Duguma sanctuary.

Inappropriate land and water management practices have altered the normal flow of water, resulted in environmental degradation, increased water scarcity (e.g. reduced floodplains, blocked and dry river channels, less water for irrigation), severe erosion, augmented weed invasions, and changed wetland ecosystems that communities have traditionally relied upon. Fishing, farming and livestock livelihoods as well as biodiversity have been negatively impacted.

It is clear that the fragility that characterizes the Lake Chad Basin stems from complex problems relating to intertwined environmental, social, economic, and political issues. The scale of the problem requires a regional approach, one based on the rehabilitation and strengthening of the resilience of socio-ecological systems. Within this context, AfDB has proposed PRESIBALT. The total program cost stands at UA 71.23 million, with UA 22.21 allocated for Nigeria specifically. PRESIBALT will be implemented over five years and will directly benefit 15.3 million people living in the Lake's impact area, 52% of them women, by improving their incomes, food security and access to social infrastructure. It will also improve regional and local cooperation for integrated natural resources management and intra-regional trade in agricultural produce as well as address the social dimensions of resilience, which will in the long run reduce potential sources of conflict. In the drive to take into account the security context around Lake Chad and the urgent need to intervene in the area in order to reduce factors of fragility, PRESIBALT will be implemented according to a "modular" and "conflict-sensitive" approach which allows for implementation of activities in the conducive regions based on annual insecurity assessments.

PRESIBALT aims to: (i) strengthen the resilience of socio-ecological systems; (ii) develop key products in a context of adaptation to climate change; and (iii) strengthen social peace through sound governance of shared resources. To that end, major development works will be undertaken to improve the water flow coefficient of the tributaries of Chari-Logone and Komadugu-Yobe so as to re-flood the dried floodplains and preserve ecosystems and biodiversity. A value chain approach will allow for the protection, storage, increased supply and marketing of agricultural and fishery products. PRESIBALT takes into account the extreme urgency of environmental safeguard actions and economic activities of the population. With this approach, implementation will factor in local specificities, income generating activities, and various security levels. The program has three components: (1) Preservation and development of water resources; (2) Development of ecological services and value chains; and (3) Institution building and program management. See the table below for main differences between PRODEBALT and PRESIBALT.

Since PFD approval, a number of other interventions have taken place which constitute the current context within the basin: the LCBC developed the FYIP for the period 2013-2017, the LCDAP, and other carefully designed scientific or technical studies. The AfDB has also conducted three studies on the Lake Chad Basin: the Inter-basin Water Transfer Study (2011), Study on the Current Status of the Lake (2013), and the Study on Erosion and Silt-control Guidelines (2013). The findings of these studies facilitated the preparation of PRESIBALT, and more specifically, assessment of socio-ecological resilience factors of Lake Chad.

Activities funded by PRODEBALT and the new baseline PRESIBALT:

Lake Chad Basin Sustainable Development Program (PRODEBALT) Implementation period: 2009-2016	**Multinational – Program to Rehabilitate and Strengthen the Resilience of Lake Chad Basin Systems (PRESIBALT)** Implementation period: 2016-2020
Total cost: UA 60.07 million jointly financed by an ADF grant for an amount of UA 30 million and other donors (GTZ, BGR, EU, World Bank, and ISB). In USD 90.96 million.	**Total cost:** UA 71.23 million of which UA 53.82 million from ADF resources. In USD 110.4 million.
Program objective: To sustainably reduce poverty among the populations living on the Lake Chad basin resources. The program aims at the rehabilitation and conservation of the productive capacities of Lake Chad basin ecosystems so as to adapt the production systems to climate change.	**Program objective:** To build the resilience of socio-ecological systems for sustainable and inclusive development in the Lake Chad Basin
Component 1: Protection of Lake Chad and its Basin (i) Soil conservation; (ii) Fight against invasive species; (iii) Conservation of biodiversity - Soil conservation and soil moisture conservation over 27 000 ha and fixation of dunes over 8 000 ha - Regeneration of grazing-land ecosystems over 23 000 ha - Control of invasive aquatic plants in water bodies - Conservation of the endangered Kouri cow species - Clearing-out of the Vrick channel over 15 km - Study and plan of optimal management of reservoirs and water supply points of the basin	**Component 1: Preservation and development of water resources** (i) Preservation and development of water resources; (ii) Rehabilitation of agro-hydro-meteorological surveillance networks; (iii) Drinking water and sanitation - Rehabilitation of the Waza-Logone, Hadejia-Nguru and Komadugu-Yobe floodplains (833 km) - De-silting of sensitive areas of Komadugu-Yobe in Niger and Nigeria, and Chari-Logone in Cameroon (1600 km) - Anti-erosion works in 50% of highly vulnerable zones to prevent weathering and water erosion - Procurement/rehabilitation of agro-meteorological stations (57), hydrological stations (77) and piezometers (64) - Rehabilitation/installation of 8 “data-loger” manometers with tele-transmission capabilities - Construction of mini drinking water supply systems and boreholes equipped with solar-powered pumps
Component 2: Adaptation of production systems to climate change (i) Integrated Management of Water Resources; (ii) Sustainable Management of forest and pasture resources; (iii) Fish stock development and management; (iv) Support to Local Development Initiatives - Extension of the piezometric observation network - Sustainable management of forestry, pasture and fishery resources - Community forest plantations on 10 000 ha and 20 000 ha agro-forestry among farmers/graziers - Restoration of 12 000 ha of classified forests - Demarcation of 1500 km transhumance corridors combined with 44 watering holes - Rational exploitation of wood through indirect actions by popularizing the use of stoves (450 000), Chorkor stoves (6000) and biogas digesters (200) on the basis of 5 national wood supply master plans - Construction of 15 landing quays with related infrastructures	**Component 2: Development of ecological resources, services and value chains** (i) Creation of a cross-border protected area and a world heritage site; (ii) Development of value chains for the main basin outputs; (iii) Social dimension of resilience - Creation of a Transboundary Biosphere Reserve and world heritage site - Increase in sustainable production of fish, cereals, wood and livestock products - Reduction of subsistence farming pest-related losses and post-landing losses of fish - Promotion of promising sub-sector value chains (cereals, fish, NTFPs, meat, etc.), especially for women - Support for small and medium sized enterprises involved in socio-professional reintegration and other IGAs - Putting in place of green wind and solar power generation plants - Equipment for developing, processing and marketing - Improved access by women to irrigated land schemes

- Establishment of local development funds to finance basic community infrastructure and 200 micro-projects for diversification and promotion of growth-oriented sectors (arabic gum, spirulina, etc.) - Improvement of health through the distribution of 60 000 mosquito nets, control of HIV/AIDS and waterborne diseases	- Creation of multipurpose centers for women
Component 3: Institutional Support - Improvement of stakeholder skills (15 300 officers, technicians, leaders of farmer organizations, including 40% women) - Building of LCBC institutional capacities, including strengthening of the Observatory - Conduct studies and research, including preparation of the erosion and silting control master plan **Component 4: Program management** - 1 regional coordination unit within the LCBC and 5 national coordination units	**Component 3: Institution building and program management** (i): Institution building (ii) Coordination and management - Trained beneficiaries (including women) - Reinforced women's leadership - Reinforced local governance - Rural and community leadership - Coordination - Planning and monitoring of activities - Recruitment of service providers - Financial management and audit

Moreover, other donor partners are currently developing their own regional interventions in Lake Chad also related to SAP implementation, primarily the UNDP with GEF funding. The UNDP is also in the process of finalizing its project document. The World Bank supported the LCBC in very recently developing and endorsing the LCDAP, a 10-year Euro 916 million plan with 173 activities and seven priority themes, showcased during a Paris COP21 side event. Furthermore, other partners have moved forward on work and studies related to groundwater (BGR, EU), organizational development (GIZ) and climate change adaptation (GIZ). Additionally, GIZ is assisting the LCBC with an internal reform process, which is expected to be concluded in the coming months. All these recent assessments and interventions set the context and changed the 'knowledge baseline' of the project which has affected and informed the choice of activities for the AfDB GEF project. Recent assessments demonstrate that Lake Chad suffers from a progressive deterioration of its productive ecosystems due to the natural changes in the Lake, climate change and anthropogenic actions. This situation affects all the countries of the basin at varying degrees and has led to increasing deterioration in the living conditions of the conventional basin populations (about 50 million people). During GEF project design, these important studies and activities have been carefully considered and cooperation with basin stakeholders and partners will continue throughout implementation for a better utilization of science, knowledge and collaboration in enhancing project impact.

The barriers to achieving the outcomes of the LCB-NREE program include coordination at the regional level to ensure child project activities are integrated to achieve regional impact. Capacity at the local level will need to be strengthened to ensure institutions and communities contribute effectively to critical region-wide priorities. Illustrating the significance of local actions within the regional context will be important to provide incentives for communities to realize the extent of their role in environmental management. Enhanced awareness and appreciation of inter-linkages within landscapes are also part of the program. National projects will carry on the momentum of PRODEBALT and PRESIBALT, sustaining activities at local level where action is most needed.

A. 5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

The proposed GEF funding is identified as part of the PRESIBALT and implemented as a single project by the African Development Bank. The components described in table B will complement the activities identified under PRESIBALT, for the Nigeria child project.

It should be noted that there is no separate GEF project implemented as a standalone. All activities will be complementary to PRESIBALT. The total GEF grant will not finance purely infrastructure but is focused on improving existing facilities and enhancing land management, agricultural practices and community level forestry management.

Here are some assumptions underlying the GEF incremental reasoning for this child project:

Without GEF: Without the GEF funds the current practices in agriculture, pastoralism and fisheries are unsustainable and will continue to have a big impact on the Lake Chad's Nigeria-based ecosystem protection and regeneration. These practices, from land-use planning to production, pastoralism and local energy consumption (wood), are failing to maintain ecosystem functions and cannot facilitate sustainable development. Whereas the PRESIBALT baseline project supports building "the resilience of socio-ecological systems for sustainable and inclusive development in the Lake Chad Basin" through investments in water resources management (rehabilitation of Waza-Logone, Hadjeria-Nguru and Kamadugu-Yobe plains), sustainable fisheries and livelihoods, and social infrastructure, it does not propose a comprehensive landscape-based approach to INRM in the five countries, including Nigeria.

With GEF: In the alternative scenario, additional activities aiming to promote integrated ecosystem management for Lake Chad conservation will be implemented. GEF activities will focus on Lake Chad ecosystem protection, services and food security through enhanced agro-sylvo practices and sustainable natural resources management in Nigeria's Borno state. The GEF funding will build on the baseline scenario by financing the incremental costs associated with: (i) Enhancing agro-sylvo systems by developing and implementing SLM/SFM practices that incorporate conservation measures; (ii) Promoting energy and livelihood alternatives to safeguard ecosystems and food security for an integrated ecosystem-based development, (iii) strengthening the existing local institutions to play a more effective role in sustainable management of Lake Chad; (iii) and increasing public awareness of the importance of biodiversity on livelihoods in the Lake Chad Basin.

The GEF funds will allow the project to address the underlying drivers of resource degradation, the functional integrity of ecosystems, and span the full array of natural assets needed in a Sahelian context.

The GEF incremental financing activities are detailed below:

- Activities contribute to SAP and NAP implementation and the strengthening of national and local capacities for INRM and ecosystem-based approaches.
- GEF will finance investments meant to promote better management of land and water resources within communities, with the goal of improving the sustainability of baseline investments. Innovative and sustainable land, water and forest management practices will be applied locally, with strong potential for replicability and scale-up to generate local benefits and GEBs, including reduced vulnerability to climatic or other shocks.
- The promotion of SLWM and SFM in target dryland ecosystems to sustain productivity and strengthen the flow of agro- and forest ecosystem goods and services within the Lake Chad basin, with concrete benefits for sustainable production, conservation and resilient livelihoods. Field interventions in sustainable agricultural and forestry practices to reduce land degradation, enhance water quantity/quality, and restore/protect important habitats (wetlands, dryland forests, etc.). Interventions will build for example on baseline floodplain and channel rehabilitation work. GEF activities will also help in regenerating and protecting land to reduce erosion/siltation and stabilize tributaries.
- Biodiversity mainstreamed into landscape planning and knowledge generation on biodiversity in the sub-basin. Biodiversity value identified for better incentives in protection with integration of ecosystems valuation in land-use planning. Biodiversity considerations also incorporated into activities on SLWM, habitat protection, and crop production. Arise incremental to baseline creation of a biosphere reserve for Lake Chad and associated surveys.
- A RE and low carbon energy dimension is added to the baseline to further enhance landscape protection aspects and concurrently bring benefits within the households.
- Environmental awareness will be added to baseline capacity building programs, including to address climate change and training linked to field investments.
- Actively involve communities in the management of resources and in the equitable sharing of benefits, with concrete improvements in food security, poverty reduction, and adaptive capacity. The needs of women, youth and vulnerable social groups are better taken into account.

- Enhanced capacities and enabling conditions for environmental protection and sustainable development. Stakeholders and institutions at national, state, and local levels better equipped to manage SLWM, work across sectors and the landscape, and partner with communities to implement environmental programs.

The GEF contribution in this program is fully incremental as it will fund exclusively activities listed above for the national project. GEF resources provide an excellent portal for significantly influencing the LCBC SAP investment program (including PRESIBALT) in a critical ecosystem, particularly one where the most important priorities are addressing Basin watershed degradation and declining biodiversity conservation. Strengthening of regional cooperation, through the IW child project, will likely trigger additional investments by other partners, including AfDB, GIZ, WB, etc. in the future. GEF and other multilateral partners will ensure that the LCBC is able to prepare and implement sustainability strategies beyond the initial GEF funding. The project will lay the foundations for knowledge, capacity and cooperative institutional frameworks for a long-term program of investments in the Lake Chad Basin, which will rehabilitate and stabilize the ecosystem. In particular, these will be investments in the reduction of soil erosion and land depletion, the sustainable management of fisheries, and the promotion of energy and livelihood alternatives that safeguard ecosystems and food security. There will be substantial investments guided by the LCBC SAP.

Success in the current project will lay the foundations for longer term national benefits for the five countries concerned. Cumulatively, the enhanced environment will strengthen the Lake Chad ecosystems, including globally significant biodiversity, as well as maintain the capacity of natural systems to sequester carbon. The IW child project involves significant regional capacity building costs, first to establish cooperative agreements (Water Charter), and second to implement priority elements (SAP). These costs are clearly incremental in that they are not in the national baselines or AfDB investment (PRESIBALT), would not be incurred without the project, and would not address transboundary environmental issues.

The initial project concept designed as a PFD and a change in baseline require an in-depth description of the detailed components, activities and incremental reasoning for each child project to be financed by GEF. The project, despite a baseline change, still follows the original guidelines of the PFD but the specificity of activities is better defined in each CEO endorsement document.

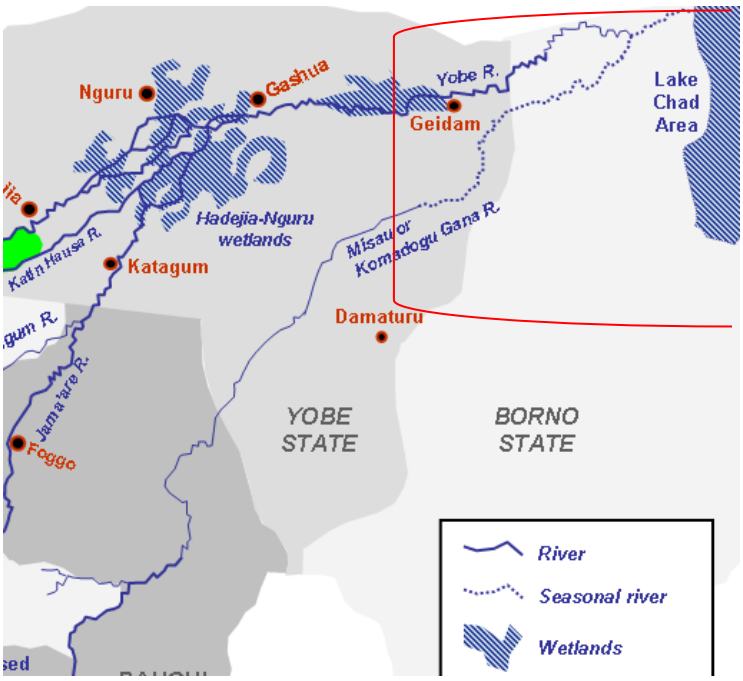
The Lake Chad context underlines the clear interlinkages between socio-politico-economic and ecological vulnerability, and the need to develop an incremental program for environmental benefits based also on local livelihood needs. Hence, catalyzing collective protection of the Lake Chad basin through stress reduction measures will be promoted while providing benefits locally for food security, rural development, and basin health. The future of the Lake generally depends on water inflow, demographic pressure, and socio-economic development. As such, GEF incremental activities in child projects consider these aspects and will target related measures, making baseline investments more sustainable, transformative and with potential for environmental scale up.

Transboundary and national priorities as identified in the SAP and NAPs will form the backbone of GEF support together with PRESIBALT. The AfDB's intervention through PRESIBALT and the GEF funded child projects aim to restore the capacity of productive landscapes and the functioning of ecosystems for the overall benefit of food security, resilience and conservation. The GEF activities of the regional and child projects will together aim to enhance coordination aspects within the basin, including of national projects; enhance participation and capacity of stakeholders; strengthen institutional and enabling frameworks for INRM; prevent imbalances in water quantity and improve quality; and help sustain ecological capital for local and global benefit.

For Nigeria, Borno State has been selected as the intervention area given it lies most directly within the Lake Chad catchment and given its degrading ecological and socio-economic conditions. The state covers an area of 75,541 km2 and has roughly 5 million inhabitants. It is subdivided into 27 local government areas and 3 districts. There are two vegetation belts in Borno, namely Sahelian-Savannah (semi-arid zone) in the northeast corner of the state, and Sudano-Savannah (dry sub-humid zone) more south. The project targets predominantly the semi-arid zone with environmental characteristics and problems outlined above. Agriculture and livestock breeding are prime economic occupations. Staple food crops are grown only during the rainy season and are therefore subject to local rainfall. Food crops are millet, wheat, sorghum, corn and peanuts. Dry season agriculture is practiced by irrigation and crops include tomatoes,

onion, rice and red pepper. Water for irrigation is obtained from deep wells or the river beds. The map below shows project target areas outlined in red.

Map of intervention area



The main ecological problems faced by Borno State are associated with its geographical location within the Sahelian region and with the shrinkage or recession of tributaries to Lake Chad. Major problems include water scarcity, desertification, and erosion, which removes valuable top soil. Drought results in wide-spread crop failure, drying up of rivers, lakes, and ponds, decreasing groundwater table and a general lack of water for all socio-economic activities. Desertification is evident in a decline in productivity as well as the progressive reduction in vegetation cover, with land unable to support any productive activity for the population. Furthermore, the abstraction of water and reduced flows of the rivers Yobe and Yedzeram have affected the lake and wetland levels and reduced fishing. The state of resources has been steadily deteriorating as a result of expanding human settlement and demand for more food, fodder, fuelwood, and water. Over-exploitation and inappropriate land and water practices in Borno state have had severe consequences on the productivity of croplands, rangelands, and forests, with its ramifying effects on livelihoods, biodiversity, hydrological cycles and security. Within such a context, Boko Haram has emerged in Maiduguri, Borno's capital, attracting in particular uneducated youths displaced from their traditional livelihoods.

The situation in Nigeria's Borno state calls for the sustainable use and rational management of land, water and forest resources in order to tackle degradation that links the Komadogu-Yobe basin to the Lake Chad basin. Socio-economic development in Borno is closely dependent on the maintenance of the services provided by natural systems. These services serve as the foundation of the state and country's non-oil economic growth. The LCB-NREE Nigeria project aims to ensure the integrated and comprehensive management of natural resources in Borno state. It is designed as a multi-sector (agriculture, forest, energy) and multi-focal area (LD, BD, CCM, SFM) project that will also assist local people adapt to the impacts of a changing climate. The goal is the adoption of technologies and measures to address land and forest degradation, biodiversity conservation and resilience in the intervention areas. The knowledge base will be enhanced so that land-use decisions can be made on the basis of better information, while an enhanced enabling framework for forest planning based on ecological considerations will be sought. In conjunction, ground level interventions on improved land, water and forest management will have positive impacts on ecosystem functioning and stability.

Given the critical linkage between environmental degradation, especially in dryland areas, and the management of resources in transboundary basins, regional activities must link with national actions on the ground. Solutions to environmental degradation must target key dryland challenges and underlying causes, especially anthropogenic. The

project will support a transformation in how Borno state communities relate to their land, water and forest. Raising awareness and knowledge on long-term consequences at the local level is key and helps serve as preventive or protective measures. The major environmental problems of Borno state that also affect Lake Chad can be targeted and remedied through an approach based on rehabilitation of marginal lands, water use efficiency, enhanced vegetative cover (especially drought resistant), sustainable agriculture, use of alternative energies, and capacity building. Such field interventions will stabilize soils, restore and increase dryland productivity, protect lands from erosion, reduce land degradation in all its forms, protect the hydrological cycle, and enhance carbon sequestration. Activities will reduce pressure on natural resources and will also indirectly reduce pressure on protected areas of Borno state, as such making a transformative impact from micro to macro scales. The project rests on 3 components as described below, with specific outputs detailed in Table B:

Component 1: Integrating sustainability and conservation into production landscapes to improve ecosystem functioning and local livelihoods

The challenge of poverty and resource degradation (and their interlinkage) are particularly severe in drylands. Continuing resource degradation in Borno state and the basin as a whole will trigger and exacerbate serious environmental and developmental problems. Improvements in land productivity and availability/quality of water can regenerate landscapes and stabilize ecosystems in support of human livelihoods. Component 1 aims at safeguarding the flow of ecosystem services through local interventions that incorporate sustainability and conservation into dryland productive landscapes, with potential for transformation and scale up. It will: invest in locally appropriate measures to increase yields under drier conditions; invest in measures to safeguard basin natural habitats (wetlands included); and promote sustainable agricultural practices to improve and diversify crop production in desertification-prone areas.

Component 1 supports on-the-ground activities to help reduce land degradation (particularly deforestation and desertification), water scarcity and biodiversity loss through the adoption and scaling up of suitable land and water management techniques in degraded areas (agricultural zones, forests, and wetlands). The aim is to expand the adoption of SLWM in targeted landscapes in the Komadogu-Yobe basin and on rivers that feed Lake Chad (mainly the Yobe), important wetlands (Hadejia-Nguru basin), and in vulnerable communities of Borno state. SLWM is a more ecologically appropriate, socio-economically sustainable, and holistic approach which directly benefits land and water users (farmers, pastoralists and fishermen) and makes productive spaces more resilient. Irrigated agriculture is an important local water consumer, surely set to increase with projected population growth, and characterized by wastefulness. Improving water use efficiency will safeguard the resource and the flows of tributaries to the lake. Furthermore, land degradation reduction measures will reduce erosion and sedimentation loading into tributaries, pollution and also invasiveness, problems that affect basin water bodies. The SLWM measures will be underpinned by alternative livelihood and biodiversity considerations to ensure sustained and diversified productivity as well as rational use and conservation.

Component 1 will fund interventions in a variety of SLWM practices, in particular, biological soil conservation, agro-forestry, small-scale water harvesting/drip irrigation, cover cropping with native and drought resistant crops, and general promotion of revegetation/reforestation efforts with protective purposes for biodiversity-rich wetlands and riverbanks. Community based soil regeneration will also be supported as it is a low-cost and effective community-driven approach that can bring landscapes back to life. Increased adoption of SLWM technologies across a landscape enhances the productive and adaptive capacity of agro-ecosystems and assists communities to diversify livelihoods and generate income. It also secures micro and macro environmental benefits, including enhancing nitrogen fixation in soils, groundwater recharge, protecting biodiversity, improving hydrological functions within the basin and sub-basins, reducing impact from drought and erosion, and reducing GHGs through enhanced green cover.

The basin's biodiversity-rich habitats underpin local and regional production and thus must be secured. Biodiversity considerations will underlie the measures adopted for enhancing productive capacity. Conservation and sustainable use of biodiversity will be promoted in the SLWM measures to help reduce the negative impacts that productive sectors exert on biodiversity. Moreover, conservation set asides will be established along erosion-prone waterways, and the economic value of local biodiversity will be assessed, thus highlighting the contribution of biodiversity to ecosystem functioning, rural development and human wellbeing. Local interventions will restore habitats (wetlands, biological corridors, etc.), enhance water use efficiency, and improve food security, providing the necessary capacity to respond to stresses and shocks. Activities will enhance the landscape restoration initiatives above, ensure landscape management

incorporates biodiversity considerations, and will indirectly reduce pressures on existing protected areas in Borno state, including important wetlands and forest reserves, and boost their resilience against climatic and human stresses.

Component 1 activities will be community based as they seek to change productive practices that lead to environmental degradation. Soil and water conservation zones will thus be established, maintained, and monitored by local communities in targeted areas. At the same time these zones will generate alternative sources of income, primarily for targeted women and youth, from the sustainably increased productivity based on diversified or sustained cropping and new biodiversity-friendly crops/products. Participatory land and water use planning approaches will better address differentiated priorities at the local level.

In order to promote changes in agricultural and water management practices, capacity building is critical alongside field investments in order to increase acceptance and sustainability of new techniques introduced, and offer incentives and technical assistance to farmers and decision-makers at all scales. Assistance in larger-scale landscape planning (sub-basin) will be provided to Borno state institutions to enhance institutionalization of experience learning. The component will also support the training of community members as required by the activity, and empower local stakeholders, with a focus on women, to participate in planning and management of land and water resources.

Outputs:

- SLWM techniques applied to a total of 2000 ha to reduce land degradation and improve productivity (climate smart, biological measures, etc.)
- 500 ha of land under agro-forestry practices and 500 ha under farmer managed Assisted Natural Regeneration
- Micro/drip irrigation and water harvesting systems scaled-up on 500 ha to improve water use efficiency
- Biological measures applied to 1500 ha for erosion control and soil fertility: cover cropping, use of natural fertilizers (mulching and other harvested biomass), minimum or zero tillage
- Reforestation/revegetation measures (total 1000 ha) to rehabilitate landscape and protect habitats: indigenous tree, shrub and grass planting, euphorbia windbreaks/shelterbelts, small reforestation and biological soil fixation along Komadogu-Yobe banks and wetlands
- Conservation set-asides along vulnerable wetland areas for 100 km to preserve biological corridors
- 5000 farmers trained on SLWM, tree planting techniques, natural regeneration, with climate awareness
- Enhanced capacity of state agencies on INRM and integrating biodiversity considerations into land-use planning: 10 trainings
- The soil and water conservation areas are maintained and monitored in 50 communities to protect soil, forest and biodiversity
- Raised household incomes from diversified production based on biodiversity-friendly goods through new crop and forestry activities:
  - 3000 women in select communities supported to develop income generating activities linked to agro-forestry and timber or non-timber forest products (fodder, fruit tree cultivation, beekeeping)
- Distribution of 5000 fruit trees to youth

Component 2: Scaling up INRM and alternative energy measures to maintain the flow of ecosystem services from agro- and forest ecosystems

Due to poverty and difficult socio-economic conditions in Nigeria's drylands, the cutting of trees for fuelwood is extensive and increasing. Demand for fuelwood results in the removal of trees, shrubs, herbaceous plants and grass cover from already fragile lands, thereby accelerating land degradation, deforestation and desertification. This will continue unless alternative sources of energy are provided.

The objective of component 2 is to promote alternative energy solutions for agricultural and domestic use through investments in local-level renewable energies and good practices in forestry. The component will support investments in renewable energy technologies. The low carbon technologies, closely linked to land use decisions, will include distribution of solar cook stoves and small solar pumping systems. These renewable energy technologies reduce pressure on forests and woodlands by reducing demand for fuelwood, GHG emissions and indoor air pollution. They increase well-being and health of local communities by reducing indoor pollution and wood collection time, especially important for women. Solar driven hydro-pumps can improve crop yields, supply more efficient irrigation systems and

other benefits such as better storage, therefore decreasing post-harvest lost. Dissemination of technologies will be complemented by awareness raising and training on the equipment for users and the set-up of committees/user groups for solar water pumping stations.

To further reduce fuelwood exploitation and deforestation, the component concurrently envisions interventions in forest management and use. SFM activities at local level will include: community forestry, with application of ANR; improved governance; promotion of good management practices in community and other forests; establishment of community woodlots/nurseries along with sustainable harvesting for timber and non-timber products; assessment and mapping of forest ecosystems; and the general integration of biodiversity and livelihood considerations into their management. Planning, management and monitoring activities will include the delimitation and mapping of natural forest and other lands (agricultural, livestock), biodiversity-rich habitat maps, socio-economic assessments and surveys of users. A forest management plan for 500 hectares will be produced, which will include a valuation of biodiversity and ecosystem services.

Through its reforestation and rehabilitation measures, the activities will also contribute to the protection of trees important for reducing erosion, siltation, and land degradation. Increased tree and shrub coverage will ensure a more sustainable supply of fuelwood, soil fertility, hydrological cycles, and biodiversity conservation, and is therefore critical to an integrated NRM project. It also links components 1 and 2. Together, the SLWM measures and community forests will provide incentive structures to farmer groups (men and women) based on their needs by promoting alternative livelihoods from new crops and tree products.

The activities here too will be based on a participatory approach to address holistic planning and local needs. In turn, larger-scale planning assistance can help secure institutionalization of new knowledge and environmental protection. Support will include technical and institutional capacity building in addition to knowledge transfer for environmentally sound, climate friendly technologies. The forestry activities will require the selection of appropriate local species (e.g. drought resistant) and establishing nurseries as well as training of communities in SFM. Training will be provided to farmers and forest users to use and disseminate sustainable production systems and better understand and monitor the resources, woodlots, etc.

Component 2 thus promotes the use of renewable energy and SFM to also increase productivity of ecosystems and reduce pressure on important habitats. Results will ultimately lead to a net gain in forest area and the improvement of selected forest ecosystem services such as provisioning (e.g. food and fuel for livelihoods), regulating (e.g. reducing GHG emissions, erosion control) and supporting (e.g. soil protection and habitat for biodiversity). They will concurrently, as for component 1, indirectly result in reduced pressures on Borno protected areas, forest reserves in particular. In addition to helping mitigate climate change, the activities also entail considerable resilience benefits. Renewable energy plays a role not only in combating climate change but also in addressing energy access, energy security, environmental pollution, and sustainable development.

Outputs:

- Investments in RE alternatives for agro-services: 25 solar water pumping systems (SWPSs) established
- Improved stoves program implemented: 200,000 solar cook stoves distributed to households (50 to schools)
- Training on the use and maintenance of RE technologies: 25 user groups trained, 20 training sessions targeting women, overall minimum 80% women participation
- Management plan for 500 ha of natural forest (socio-economic analysis and survey of forest users; area inventoried, demarcated and mapped), including a biodiversity and ecosystem services valuation
- Borders between agricultural, livestock and forest land defined (GIS map of Borno) including sub-basin maps of biodiversity-rich habitats
- Two community forests created, with management guidelines developed and tested, and awareness/sensitization campaign on importance of trees and environmental protection
- 4000 ha of woodlots/nurseries, with local drought resistant species, and community forests, established on community and private lands
- 500 ha of natural forest land rehabilitated: domestic energy alternatives, woodlots and SFM measures reduce the consummation of wood, deforestation, and sustain fuelwood and fodder supply in target areas (tons of CO2)

- Improved awareness and acceptance of clean energy technologies among local communities in Borno state: 5000 households using RE alternatives instead of traditional approaches

Component 3: Improving and consolidating knowledge, data and monitoring
Inadequate information and data are a major constraint to developing an accurate understanding of the current and future environmental problems in the Lake Chad Basin. Managing basin resources requires information and identifying the mechanisms at play in order to interpret data and observations for better response strategies. Data also needs to be useful and usable in order for it to be thereafter applied for action at different scales, whether by the LCBC, basin countries, local governments, producer organizations, etc. The regional IW project aims to facilitate the collection and standardization of hydrological, environmental, and socio-economic information to improve evidence-based decision making at local, national and regional levels, and aims to link this effort with national child projects and to national water bodies. To reinforce the IW outcomes and the GEBs for Lake Chad, component 3 of each child project will help maintain strong links to the regional project, thus strengthening the programmatic aspect of the LCB-NREE. It will help improve information sharing and the transfer of lessons among national and regional stakeholders, data collection and standardization, and the application of analytical and monitoring tools. Standardization allows to assess synergies among environmental, agricultural and livelihood outcomes which will become more clear to state actors and strengthen the case for INRM/IWRM. Component 3 complements 1 and 2 and creates the link to the regional IW umbrella project. All child project components 3 will thus be linked through needed knowledge, trainings and collaboration.

In the basin countries, better capacity on data production, harmonization and transfer to the LCBC is needed so that data collection and exchange can be enhanced. A system of audits and hydrological data gathering by states will be set up by the baseline and regional project to feed the regional database within the LCBC Observatory, and child projects will help make this system functional. The priority is to build the decision-support knowledge base so that resource management decisions at regional and national scales can be taken on the basis of advanced information on water, socio-economic and ecological conditions. Component 3 will thus look to improve and apply the information base, institutional cooperation within and across countries, and generation and exchange of knowledge that can be effectively used for policy and planning.

Given the need for enhanced synergy and basin wide monitoring, component 3 will also support the application of regional tools developed under the IW in the child projects, such as those related to hydrological monitoring. A training program related to these needs will be developed and implemented, enhancing state technical capacity on GIS, M&E, INRM, data collection/processing, etc. Good practice guidelines in SLWM and SFM will be developed and disseminated to land users via technical packages and training programs linked to components 1 and 2. Capacity at the local level (community groups, water users, national agencies) will need to be strengthened to ensure that all stakeholders, communities included, contribute to a theory of change approach and to improve chances of success, impact, and sustainability.

Effective implementation of child projects requires better institutional performance and information modernization. Component 3 of each child project will therefore not only make links to the knowledge component of the IW project but be project-specific as regards project management capacity, knowledge, and M&E. Support for project management, project M&E, and strategic communications will form part of the assistance. The component will produce a knowledge management and communication strategy and tools for enhancing public awareness at local and other scales as well as the creation of guidelines to facilitate project implementation. The SLWM and SFM activities will also be associated to the knowledge generation needs and information sharing. Better communication can lead to better involvement and improved capacity of communities, civil society and the state in decision making processes. Communication, consultation, and community participation during planning and implementation will be sought throughout project implementation for better success potential in environmental management.

M&E at program and project level will complete component 3 activities. A project-specific M&E system will be developed and then linked with and improve state M&E systems and regional M&E systems to be developed under the IW and baseline projects. Such will provide a basis for enhancing capacity to monitor interventions and the state of environmental resources. Technical assistance to develop and implement the M&E system will be provided. The M&E framework will additionally monitor indicators on land cover (including desertification) and socio-economic status

(with clear considerations for gender). The assessment of progress via indicators will be part of the information to be gathered at regular intervals and towards learning objectives. Periodic project monitoring will allow improved adaptive management, partner synergy and ecological effectiveness.

GEF alternative

The activities proposed for GEF financing will build on the institutional approach in the PRESIBALT and will continue the momentum of field level activities that had more closely characterized PRODEBALT. While PRESIBALT focuses more on lake protection and improvement/monitoring of water flow (for e.g. through rehabilitation of floodplains, anti-erosion structures, agro and hydro-meteorological stations), and the construction of local structures and services for ecological and socio-economic benefit (e.g. rural community infrastructure, sanitation, processing and marketing techniques, value chain development, rural electrification, piloting PES schemes, etc.), the GEF child projects will complement the PRESIBALT to enhance aspects of transboundary coordination (IW), and amplify considerations for long-term environmental preservation of the Lake Chad basin (linked to LD, BD, CCM, SFM). The baseline project, although substantial and centered on rural environmentally-friendly development, does not pay enough attention to ecosystems within a broader landscape and basin-wide approach. The full AfDB-GEF program, with the IW regional project acting as the umbrella, is designed to promote sustainable solutions to identified problems and adaptive management within an environment of change and insecurity. Rather than only planning to sustainably develop Lake Chad, the priority with GEF funds is to eventually restore or rehabilitate the basin in the long-run with incremental actions at national level. The Nigeria project activities will be incremental in adding specific considerations for and interventions in sustainable NRM on the ground.

Within the LCB-NREE program, the national projects will complement the baseline to support countries and the LCBC achieve SAP/NAP priorities and realize the Lake vision. The regional project that addresses governance, synergy and cooperation for shared basin management will thus be completed by the child projects, each with their own field investments based on underlying considerations for ecosystem stability and functioning. The factors and actions (climatic, human, etc.) that result in declining water quantity/quality and basin productivity are given full consideration through GEF funding. Activities aim to promote an integrated approach to environmental management that simultaneously addresses food security, biodiversity conservation, and climate change mitigation. In working to improve sustainability of the productive capital (soils, vegetation, biodiversity, water) and the living conditions of rural populations, the GEF funds add needed considerations to the baseline.

The PRESIBALT focuses particularly on the regional and national levels while GEF Nigeria activities will target both the community and state levels. GEF resources from the LD, BD, CCM and SFM focal areas will be associated to the PRESIBALT and will support and enhance sustainability of the baseline. For Nigeria, the focus will be on up-stream communities within the Komadogu-Yobe sub-basin that is directly linked (by surface and groundwater systems) to the Lake Chad basin, with the Yobe river feeding the lake and to communities whose land use activities have an impact on the tributaries and Lake resources itself. As such, any programs for Lake Chad must integrate sub-basin planning and INRM, given regional environmental problems transcend national borders. Major investments in the baseline are related to lake protection measures such as dunes fixation and anti-erosion works. Other baseline investments are geared towards improving access to food and markets, with a focus on socio-economic infrastructure and value chain development, but less so on the local drivers of environmental degradation. Less attention is given to aspects of land degradation, biodiversity loss and deforestation, and all their ramifying effects on basin resources, including aquifers. GEF funding is sought to address this critical gap.

The GEF alternative focuses on the integration of conservation and resilience into the landscape. Investments in land, water and forest management with considerations for biodiversity; better resource use planning; and low carbon energy options that reduce pressure on natural resources (particularly forests) will be promoted. GEF funded interventions in SLWM and SFM, with considerations for biodiversity, local needs and natural characteristics, will strengthen critical field level aspects, arising incremental to baseline work to improve water flow, water supply, and value chain development. Support must be provided to subsistence farmers to implement low-tech methods that improve soils and conserve water and forests in addition to improving infrastructure and market linkages. While baseline activities look to increase the value of agriculture produce, processing and marketing, the GEF increment will enable PRESIBALT to intensify and upscale sustainable and conservation-focused NRM practices with the participation of relevant actors. GEF funded activities will complement socio-economic infrastructure by addressing the interface between ecology and

agriculture. Activities to expand vegetative cover will help reduce the impacts of poor land-use practices both on soils and on waterways, and will also work to restore agricultural lands, maintain canal health, and protect wetlands within the basin and sub-basins, critical to local biodiversity. GEF will also supplement and link the value chain development activities of the baseline with its activities in livelihood diversification (and production of biodiversity-friendly goods) and integrate enhanced considerations for the adaptive capacity of ecosystems and communities. The resulting cumulative effect of enhanced green cover will rehabilitate soils, enhance carbon sequestration, and result in reduced GHG emissions from land degradation and deforestation, delivering both local and global benefits.

The GEF alternative will also incorporate and mainstream biodiversity conservation into local planning and management practices at sub-district and department level. Decision-making tools (mapping, land use plans) that will enhance SLFM with underlying biodiversity considerations will be incremental, and will help promote the linkage between economic growth and biodiversity. The project will provide a basis for further advocacy of and raising awareness about the value of landscape-based approaches which can help decision makers internalize the approach in long term planning once its benefits prove clear. By allowing the project to work across stakeholders, including government, communities, and civil society groups, the GEF project will share lessons learned and develop best practices to be promoted at other scales, for example within sector ministries to support future improved extension support to farmers, budget allocations and policy reforms.

SLWM and SFM activities will also constitute an entry point into local communities, and help secure their participation and ownership of the larger program which can bring more permanent solutions. The GEF funds will make it possible to adopt a more community driven and participatory approach in which people themselves are involved in the planning and management of natural resources, an aspect that is not strong enough in the baseline. At the local level in the project zone, the project will mobilize communities, strengthen local capacity, support participatory planning, and invest in locally suitable SLWM techniques. Recognizing the extent and the consequences of environmental degradation in Borno, the GEF increment is intended to complement the PRESIBALT by financing targeted investments in innovative techniques for land management at key agro-ecological sites and promoting sustainable agriculture.

Efforts to promote sustainable agriculture meet with severe structural challenges in Nigeria resulting from a combination of factors relating to agro-ecology, lack of services, and high poverty levels. These factors particularly increase the populations' vulnerability to food insecurity and climate shocks. The GEF funds will allow the project to address these challenges and promote on the ground interventions based on community, household and gendered needs. Through the implementation of SLWM techniques the GEF increment will be able to ensure promotion and sustainability in agricultural practices that will reduce soil erosion and increase water efficiency. SLWM measures such as crop diversification also create alternative livelihoods and income diversification, based on food and revenue derived from healthier and diversified production bases, which also contribute to reducing pressure on natural resources. Without the GEF incremental activities there will be no targeting of the underlying problems affecting the Lake Chad basin and sub-basins in Nigeria, and of the barriers to the protection of Lake Chad, including population pressures, low environmental awareness, and low knowledge at institutional levels.

GEF funding will also ensure technical assistance and capacity building at different levels and in related needs, including on SLWM agro-ecological techniques and principles for implementers and service providers. Building capacities in local communities will ensure decentralized and sustainable rural development that can reduce the regional poverty index. Capacity building within institutions and communities will target incremental issues in knowledge and awareness (INRM, adaptation, soil conservation, water use efficiency, etc.) and will rise incremental to the baseline social sensitization campaigns. Resources are scarce and meeting basic needs is the more urgent priority for the population. Incremental GEF financing is therefore necessary to ensure that sustainability and conservation are integrated into productive landscapes.

The GEF increment also adds a low carbon/renewable energy/mitigation dimension to the baseline, as a way to indirectly enhance vegetative cover and further reduce deforestation. CCM-related interventions will result in reduced exploitation of woody resources, improved carbon sequestration in soil and trees, and reduced land use practices and change that lead to emissions. The CCM funds will support the adoption of renewable and low carbon energy alternatives (solar cook stoves) to traditional approaches for agricultural and domestic use, resulting in reduced demand for fuelwood, charcoal production and use. This will include technical support in addition to technology transfer. SFM

funds will also ensure that the alternative energy sources are linked to forest protection and improved management activities, and also the LD, BD and livelihood diversification activities, for a truly holistic approach based on connectivity between ecosystems. They will help protect and secure forests so critical to the Lake Chad basin (e.g. trees help maintain biological functions and water cycles).

Without the GEF alternative, it is improbable that the larger program effectively addresses multiple national environmental challenges, nor that communities would prioritize medium and long-term investments in sustainable NRM. The GEF funds will allow the project to promote best practices in agro-sylvo management that contribute to the regeneration of vegetation cover and soil fertility in order to prevent land degradation and biodiversity loss, thus better contributing to the larger scale protection of the threatened regional Lake Chad basin. Without GEF funds, integrated landscape perspectives and biodiversity will likely not be emphasized in local NRM planning, and key habitats of regional and global importance could see irreversible degradation over time. The project addresses the pressures on natural resources from competing uses at the landscape scale, raising awareness of the close interconnectivity of systems in a transboundary context. Without the integrated approach provided through the GEF operation, the project could not amass the same degree of extensive, multiple benefits to stakeholders and the environment.

Without GEF, the integrity of Nigeria's northern landscapes, particularly its croplands, wetlands, rangelands, etc. will continue to degrade, and inappropriate resource use will continue to the detriment of environment and livelihoods. Land-use competition between pastoral, agricultural and wildlife activities will intensify. As areas continue to experience population growth, natural vegetation will be systematically cleared for food production. These unsustainable patterns are reinforcing poverty and curbing the future sustainable growth of the regions and country as a whole. With GEF, actions to sustain ecosystem productivity over time without harming biodiversity will be enhanced. The objectives of regional programs for Lake Chad need to spring from national actions to curb the extreme vulnerability of resource users and Sahelian ecosystems. With GEF funds, the project will work to sustain the ecosystem goods and services provided by drylands on which rests the food security of those who depend on their availability and quality. The aim is to integrate environmental considerations into the culture of farmers and other stakeholders for scale-up and transformation.

GEF resources from LD and BD will be associated to the baseline project in order to achieve global environmental benefits from landscape rehabilitation. Aspects related to capacity building and SLWM practices will enhance the baseline project infrastructure and ensure that natural resources are used soundly. SFM and CCM funds will be jointly fighting against pressures on forests. SFM will promote sustainable regeneration of forests and CCM the implementation of renewable energy household alternatives. Funds from GEF will allow the project to incorporate local level planning, INRM and sustainable technologies, and community capacity building. These will contribute to ensuring sustainability of the baseline and project investments as well as the agro-sylvo practices and technologies promoted. A holistic approach based on the entire landscape better addresses drivers of environmental degradation. The GEF project increment to the baseline will deliver multiple local and global environmental benefits which otherwise would not be realized. Moreover, the incremental activities aim to conserve and manage landscapes with consideration for the anticipated impacts of climate change (particularly drought, and its impact on water availability and agro-ecosystem productivity).

Global Environmental Benefits (GEBs)

The GEF increment centers on securing ecosystem goods and services from a protected and regenerated landscape, and reducing pressure on natural resources and habitats, including water bodies, wetlands, and dryland forests. The Nigeria project will address the interconnectivity between ecosystems and livelihoods thereby generating and delivering local, national, regional and global benefits across GEF focal areas. GEBs will arise directly from a restored landscape with concurrent environmental and local socio-economic benefits. GEBs will be generated in multiple GEF focal areas while simultaneously advancing main development objectives for poverty reduction as well as commitments to environmental conventions.

The project will generate intertwined local and global benefits, including increasing the resilience of ecosystems and communities to environmental and human stresses, so critical in drylands and in the Lake Chad region. Global benefits will accrue from healthy production landscapes. Activities will deliver environmental benefits by reducing land degradation, protecting biodiversity, and reducing terrestrial carbon emissions through enhanced vegetative cover

(greening and trees). Local socio-economic benefits will center on enhanced food, fuel, and water availability that will derive from the sustainable management of basin resources. The project will contribute to safeguard the provision of critical agro- and forest ecosystem goods and services provided by the Lake Chad basin that will continue to support economic and social development.

To secure GEBs the GEF increment will specifically finance activities in SLWM and forest protection in targeted dryland settings. It will work across target sites to help catalyze a transformative shift within production sectors to focus on environmental sustainability. The Lake Chad Basin is the second largest wetland in Africa and hosts biodiversity of global significance. Activities will indirectly reduce pressure on protected areas of Borno state, falling within the Lake Chad basin, including the lake itself, the Chad Basin National Park, the Sambisa Forest Reserve, and the Bade-Nguru wetlands, which form part of the Hadejia-Nguru wetlands lying in the Komadogu-Yobe sub-basin and are listed as Ramsar sites of international importance.

Through the three project components and in line with a GEF multi-focal strategy, the Nigeria project will aim to achieve the following impacts: (i) an increase in land managed sustainably that integrates biodiversity conservation; (ii) sustained productivity of agro- and forest ecosystems in support of human livelihoods; (iii) improved forest management and protection in drylands; (iv) landscape restoration and basin conservation with sustained productivity and functionality of agro- and forest ecosystems; (v) conservation and sustainable use of biodiversity integrated into production landscapes; (vi) reduced GHG emissions resulting from land and forest degradation; (vii) increased investments in renewable and low carbon energy technologies; (viii) effective provisioning of forest ecosystem services; (ix) protected natural habitats of the basin (wetlands, rivers, lake, etc.); (x) increased availability and quality of water.

Specific GEBs as a result of the Nigeria child project are:

- Total land area under SLWM (2000 ha) (sum of below), with 500 ha under improved irrigation and enhanced productive and protective capacity;

-1500 ha under improved crop management (climate smart)
-500 ha under agro-forestry

- Total SFM (6,000 ha) (sum of below);
- 1000 ha of reforestation/afforestation/revegetation;
- 4500 ha of woodlots and community forest areas (SFM), including ANR application;
- 500 ha of dryland forest sustainably managed through a plan and rehabilitated;
- Increased quantity and quality of forests in dryland ecosystems;
- Change/increase in vegetation cover in targeted sites;
- Improved provision of agro- and forest ecosystem goods and services;
- Increased application of INRM across Borno state croplands and forest landscapes;
- Reduced rates of deforestation in targeted landscapes (decreased fuelwood consumption through alternative energy technologies and forestry activities);
- Reduction in land degradation and desertification (measured by reduction in soil erosion, biomass gains and other indicators), with restored/stabilized ecological functions;
- Net gain in forest area managed in a sustainable way and the improvement of select forest ecosystem services such as habitat services (biodiversity), regulating services (carbon) and productive services (soil, livelihoods);
- Reduced GHG emissions from agriculture, deforestation and forest degradation and increased carbon sequestration in soils, trees, and other biomass;
- GHG emission reduction resulting from alternative energy solutions, forest regeneration, SFM, and increased vegetative cover: 1,126,672 tons of CO2 equivalent avoided (both direct and indirect); - **Please see attached EXACT model for calculation details**
- Reduced pressure on ecosystems (wetlands, forests, etc.) and protected areas, with habitats, wetlands and biodiversity of local and global significance better conserved;
- Reduced vulnerability of ecosystems to climatic change and variability, especially drought, and human stresses.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

Key risks to the project will relate to: institutional weaknesses and management challenges for complex multi-focal projects; competing priorities for socio-economic development vis a vis conservation that may compete for focus and financing; cooperation amongst stakeholders and partners; climate and ecological risks; uncertainty at local level in adopting change, new knowledge and techniques; and insecurity.

The project will specifically try to address problems that arose out of the implementation of GEFID 767 and PRODEBALT as expressed in their terminal evaluations. These included: inadequate project management and LCBC's limited capacity to execute projects directly; delays in project implementation, due also to lengthy procurement timeframes and slow pace of implementation of activities on the ground; deficient M&E systems and lack of flexibility for adjusting the project; and a security situation which caused difficulties with project staffing. Key lessons factored into the design of the Lake Chad Program are the focus on strengthening LCBC capacity, demonstration sites and pilots, as well as the involvement of communities and local organizations in the implementation of activities through their participation in field level activities and capacity building at local level. A strong M&E framework will be complemented by GEF tracking tools and AfDB supervisory missions.

In light of current cross-border insecurity and particularly the Boko Haram activity in the area, project sites were identified and selected bearing in mind security considerations. Partners continue to implement rapid-results projects in these areas mainly through local service providers and NGOs, and AfDB will also resort to such partnerships to enhance reach. Some of the AfDB supervision missions were suspended in Borno state during previous country support programs and during the PRODEBALT due to increased Boko Haram activity. These risks are very much taken into account and the project will retain flexibility to adapt. Project design has consulted Nigerian stakehoders and drawn on previous experiences of GEF funded projects in the Lake Chad Basin.

Risk	Level	Mitigation measure
Institutional weakness of the LCBC and national institutions to manage a complex program	M	Weaknesses in project management within the previous program were identified and lessons addressed in the design of PRESIBALT. Making the LCBC executing agency aims at its direct involvement in project implementation and enhancing its capacity, but with strong focus on training to address institutional deficiencies. The institutional strengthening component of the IW child project is meant to target these gaps and needs. More effective governance structures will arise from IW component 1. The program also aims to build LCBC's abilities in project management, procurement and financial management.
Weak project management, including long procurement timelines and delays	M	Investment in human and financial resources, and building of appropriate capacity and knowledge systems, by strengthening human and technical capacities of project implementers and providers.
Limited capacity of stakeholders to implement INRM and transboundary policies	M	Provision of INRM guidance coupled with specific training to empower stakeholders at both national and regional levels. Demonstration activities in INRM will additionally promote linkages with awareness raising and capacity development initiatives.
Inadequate regional cooperation for good management of shared resources	M	The coordination structure for stakeholders and partners to be established under the regional project will enhance collaborative aspects at basin level. A mechanism will be purposely set up at beginning of project implementation.
Duplication of activities by different partners due to multiplicity of programs on SAP implementation	M	Coordination with other donors and partners was sought during project design, PPG, and will continue during implementation. The coordination structure and better monitoring will help promote collaboration and synergy.
Key regional institutions and national governments do not work cooperatively	M	The project will emphasize a continued commitment to a regional approach and the benefits arising from cross-border INRM, meant to balance competing needs and bring equitable benefits.
Government commitment is not sustained	M	Multi-stakeholder dialogue platforms established to share knowledge on equitable benefit sharing. This will help to increase and maintain interest and political will for basin wide programs and child projects.
Weak local stakeholder adherence to activities	L	Identify optimal demonstrations and IGA systems, relying especially on the development of adequate techniques and undertake sensitization campaigns targeting all stakeholders, including women. A community based approach for

		activities will be promoted. The development of resilience and fragility control actions will secure benefits locally for increased belief in the program goals. Communication, participation and demand driven approaches will be strong elements during project implementation.
Weak ownership of methods of sustainable ecosystem management by States and communities	L	Sensitization of States and beneficiaries on effective participatory ecosystem management from project start. Community based planning methods will be used to prioritize needs and allocate interventions with consent. Enhanced environmental awareness and beneficiary contributions will prove additionally beneficial for long-term INRM.
Low capacities of NGOs identified as executing partners	M	Training of trainers will be done. Government services and technical experts hired as consultants will be involved in implementing project activities.
Demonstration projects become source of conflict locally	L	Activities will be established through a consultative process and all decisions will be promoted through a bottom-up consultation when possible. Strong focus on balancing use and benefits amongst users, on mediation efforts, and awareness raising.
Climate change and variability at higher than anticipated levels leading to further degradation of ecosystems and biodiversity, and lowering water table of the lake	M	The region could face droughts but the project is flexible enough to function under drier conditions. The project has an underlying focus on resilience and adaptation given the area lies within the Sahel and depends on numerous environmental factors. The project will integrate considerations for enhanced adaptation to climate change, with the overall goal of strengthening both the basin and human capacity to deal with changing climatic patterns. Enhanced data, knowledge and monitoring of hydrological and climatic aspects will additionally contribute to monitoring change and adaptive needs.
Ecological risks, including impact of upstream dams in Nigeria	M	GEF resources will be used to rationalize water use and measures will be taken to avoid invasive risks in demonstration activities and child projects through appropriate safeguards. Reinforced dialogue amongst LCBC Member States and baseline or regional project activities to monitor impacts and enhance adaptive capacity, such as the establishment of an early warning system, will help mitigate ecological impact and enhance cooperative decision making.
Weak M&E	L	Greater communication and knowledge management, and a strong M&E framework will be set up, also to enhance adaptive management and synergy.
Insecurity and political instability may affect implementation of activities at country level, particularly high in Nigeria and Borno state, and increase movement of populations	H	The AfDB's secured access criterion was taken into account during selection of project sites. Involvement of local civil actors in the implementation and monitoring of project activities will assist in reaching beneficiaries in target areas. The project will retain flexibility to deal with insecurity and change. The program as a whole is meant to enhance participation, equitable benefits sharing, and hence regional security in the long-term. The presence of Boko Haram also underscores the necessity of such interventions.

Ecological and socio-economic risks: The implementation of some baseline rehabilitation activities can create negative effects such as the risk of minor destruction of natural habitats and water/soil pollution stemming from an increased use of fertilizers and pesticides. Moreover, the irrigation schemes, the rehabilitation of degraded land, the support for agricultural sub-sectors, and the development of rural infrastructure may encourage immigration and foster additional overexploitation of resources. The development of some processing activities can also lead to the use of more firewood, and hence deforestation. Increased trade and greater population mix can foster a rapid spread of communicable diseases such as HIV/AIDS.

Formulated in a context of advanced resource degradation, PRESIBALT will help to rebuild production capacities for sustainable development in the whole basin. Floodplain rehabilitation works will help to restore water flow of the main watercourses that supply the Lake. Anti-erosion works will limit silting and sedimentation in the Lake and help to recover degraded lands. The baseline program will also allow for creating a Transboundary Biosphere Reserve (TBR) and for listing the Lake as a UNESCO world heritage site which will encourage and help secure its protection.

Mitigation measures of potential negative impacts were identified and noted in an Environmental and Social Management Plan (ESMP) that was prepared for PRESIBALT. It is noteworthy that the procurement of new meteorological and hydrological stations, and installation of manometers and GIS will help to better monitor certain

environmental indicators in the basin and trends over time (e.g. water levels, desertification, deforestation). National coordination units, working closely with Directorates of Environment, will also participate in monitoring the environmental and social impacts of program activities and, where necessary, recommend appropriate corrective or compensatory measures. The environmental training and education program will help to sensitize the population on the implications of destructive practices and ensure their participation in applying appropriate biodiversity and environmental protection measures. Strong monitoring frameworks will be established to mitigate ecological risks, including sufficient safeguards and risk analysis.

Climate change risks: According to the Intergovernmental Panel on Climate Change (IPCC), climate change and resulting increases in temperatures and rainfall variability will likely have a particularly severe impact on agriculture in the Sahel. Droughts have increased considerably in the Sahel region since the 1970s. During implementation of PRODEBALT, activities under the component 'Adapting production systems to climate change' helped to mitigate some negative effects of climate change (including through reforestation, agroforestry and the promotion of alternative sources of domestic energy) and these actions will continue during PRESIBALT whose monitoring and readiness will be supported by ecological monitoring tools. Generally, PRESIBALT and GEF activities will have major positive impacts on ecosystem adaptation and reduced vulnerability to climate change. Besides, program activities will be aligned to national climate change adaptation plans of the five countries and contribute to securing production systems. The population's adaptation capacity will also be strengthened by developing climate change risk forecasting and management tools, putting in place agro-hydro-meteorological stations and supporting communities to mainstream climate-related information into the management of rural activities.

Regional insecurity: The Lake Chad Basin is marked by cross border insecurity resulting from the porosity of borders which influences socio-economic security and also resource rights. This cross border insecurity is part of historical socio-political and economic dynamics in this region, in addition to escalating armed activity in the area by Boko Haram. Such a context explains the added political interest in the Lake Chad region. The reduction in lake farming and fishing areas, combined with high population pressures (migration, population growth and influx of refugees) on resources, has created conflicts in the Lake Chad region which will intensify with growing resource scarcity following ecosystem degradation. The most common is conflict between farmers and stockbreeders resulting from the extension of farming to available wetlands and even to the livestock migration corridors and fallow lands. The uncontrolled increase in the number of fishing channels also creates disputes between fishermen and stockbreeders. The use of water, a shared resource, is a potential source of regional conflict in Lake Chad, additionally for irrigation projects. Most conflicts relating to natural resources are solved by local authorities (district and village authorities) through mediation or by agro-pastoral-conflict-management commissions. Enhanced cooperation between these conflict-resolution bodies, NGOs and the public authorities, as envisioned in the baseline, will contribute to better rural land management. Additional mitigation of regional conflict through balanced benefits sharing will alleviate such risks.

A.7. Coordination with other relevant GEF financed initiatives

Lake Chad and the LCBC have been and are the recipients of assistance from a number of technical and financial partners, primarily UNDP, FAO, UNESCO, EU, German Cooperation (GIZ, BGR), French Cooperation (AFD, FFEM), IUCN, and World Bank. A number of their projects and programs have been financed in connection with water resources management in the Lake Chad basin, with technical support to basin countries and the Executive Secretariat of the LCBC. Hence, this and other projects in the region together focus on the implementation of the regionally agreed SAP and care must be taken to avoid duplication and better coordinate actions for impact value at basin level. The design of the Lake Chad program incorporates the lessons learned from the earlier GEF financed UNDP-World Bank project that resulted in the establishment of the TDA and the SAP, and previous AfDB programs in the region.

The project will be coordinated at regional level with close links to the national level activities. As such, principles of coordination and implementation are as follows:

- alignment of activities to be implemented at the national level under common program results framework with agreement on shared and mutual benefits of a collaborating through the regional Lake Chad GEF program;
- complementing the identified local level project activities that build on national level results and address basin wide challenges and issues;

• supplementing multi-focal area strategies funding from the GEF and other partners involved in baseline projects, including support for climate change mitigation and adaptation programs that target rich biodiversity and productive landscapes in the Lake Chad basin;
• targeted support for trans-boundary landscapes of regional importance such as wetlands that require coordinated effort from Lake Chad basin countries and promote regional cooperation;
• leveraging synergies with programs funded by several development partners.

The regional project of the LCB-NREE will seek synergy with other projects and related initiatives in the region. The following important interventions are ongoing in the Basin:
- UNDP-GEF ID 4748: 'Improving Lake Chad management through building climate change resilience and reducing ecosystem stress through implementation of the SAP' (currently under project preparation phase);
- World Bank supported the 'Lake Chad Development and Climate Resilience Action Plan' (LCDAP);
- GIZ: 'Organizational advisory services for the Lake Chad Basin Commission' and 'Adaptation to Climate Change in the Lake Chad Basin';
- German Federal Institute for Geosciences and Natural Resources (BGR): 'Sustainable Water Management of the Lake Chad Basin' program and sub-project 'Advice on groundwater resources for the Lake Chad Basin Commission';
- French GEF: 'Lake Chad Preservation Project: contribution to the Lake development strategy';
- European Union (EU): 'The Integrated transboundary water resources of Lake Chad Basin';

The AfDB-GEF project will coordinate with other complementary initiatives in Nigeria as well. These projects will be able to provide valuable lessons on best practices that can be scaled up nationally and regionally.
- IUCN: Komadogu-Yobe management plan implementation project, and under the BRIDGE (Building River Dialogue and Governance) project, support to Nigeria and Cameroon towards major advancements in the ratification of the Lake Chad Water Charter;
- World Bank-GEF: Sahel and West Africa Program (SAWAP) in Support of the Great Green Wall (GGW) Initiative, and national project Nigeria Erosion and Watershed Management Project (NEWMAP). 12 country program with the main objective to expand SLM in targeted landscapes and in climate vulnerable areas;
- IFAD-GEF: Food Security Integrated Approach Pilot (IAP) child project for Nigeria (UNDP);
- UNEP-GEF: Integrated Ecosystems Management Project in northern Nigeria and southern Niger;
- UNDP-GEF: Sustainable Fuelwood Management in Nigeria;
- World Bank: National Fadama Development Project (now third phase) focused on reducing vulnerability to land degradation and soil erosion in sub-watersheds.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation.

Baseline project target areas, upon which the GEF project will build, were selected based on priorities defined in the LCBC FYIP. Criteria used in defining the areas included: (i) critical points where the operation will allow for improving the overall socio-ecological system; (ii) areas highly vulnerable to water erosion, representing an area of about 50,000 km2; (iii) value chain and inclusive development areas. The project's direct and indirect beneficiaries are 15.3 million people (farmers, herders, fishermen) living on the banks of Lake Chad and its immediate hinterland. Women and the young will benefit from skills training, professional integration and income generating activities.

The project rests on the principle that sustainable and inclusive development can be achieved once key stakeholders and beneficiaries are sensitized and perceived as development partners in natural resource development and management actions. Communication, consultation, and community participation during planning and implementation are key for the success of projects. If given the opportunity to identify and decide the types of projects that are in line with expectations and needs, communities are likelier to mobilize, participate, learn and sustain. For this reason, the project is based on a participatory approach. Representatives of the local populations and decentralized national services were actively involved in the TDA, the definition of SAP priorities and subsequent AfDB program/project designs. Activities were defined in order to also meet the priority needs of beneficiaries and expressed in the FYIP and Water Charter. Not only were the populations, technicians and local authorities involved in the identification of sites to be developed and protected, they also conveyed their own knowledge and perceptions of environmental phenomena.

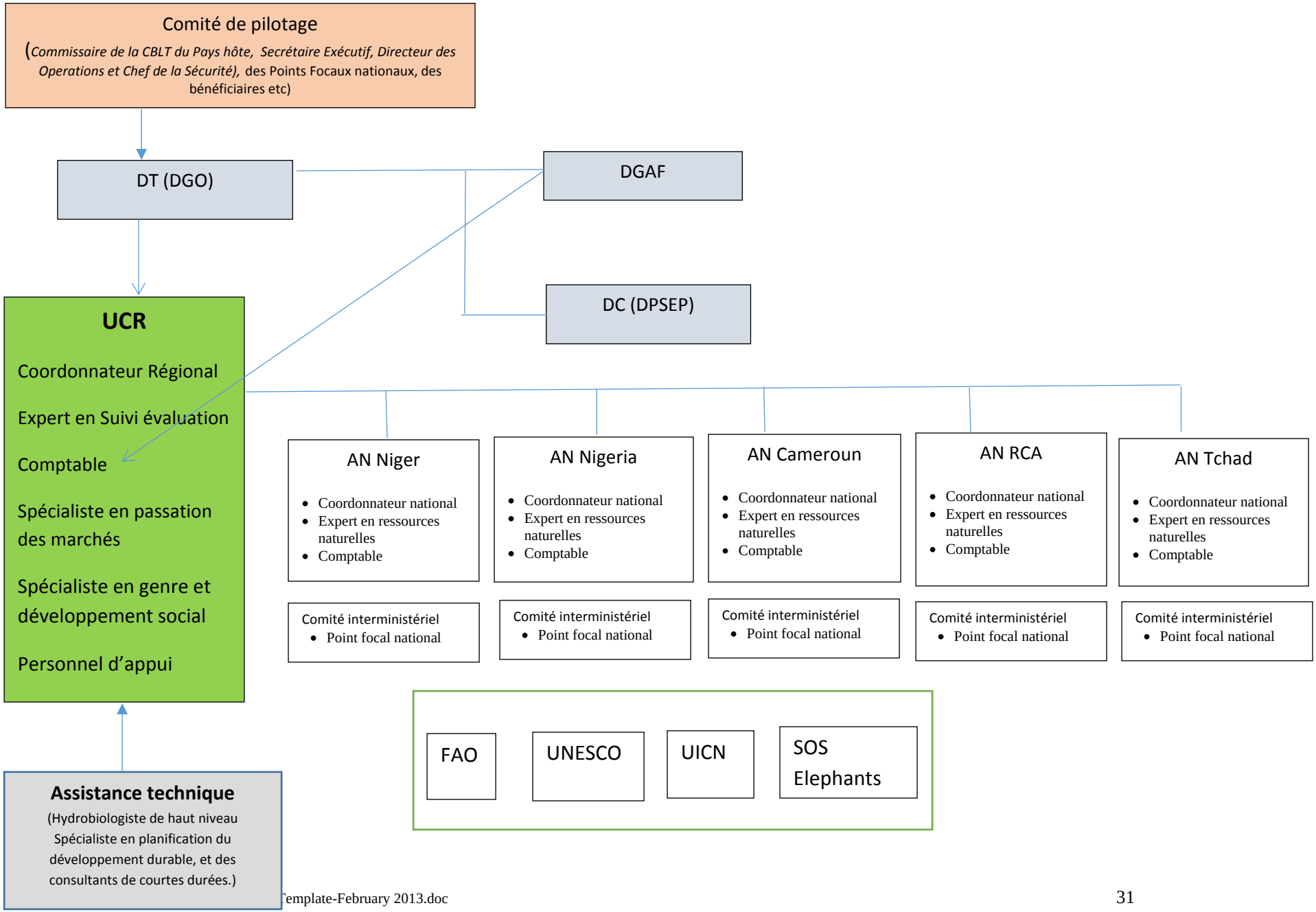
PRESIBALT has been developed on the basis of an integrated and participatory approach to increase ownership of the program by the beneficiaries. The program was designed following consultations (discussions and workshops) with various stakeholders (regional and national institutions, partners, communities, NGOs, etc.) that expressed views and concerns during the identification, preparation and appraisal stages on numerous aspects, such as water shortage problems, insecurity, access to social infrastructure, etc. The participatory approach which enabled stakeholders to own the objectives and technical choices of the program will be continued and strengthened during the baseline and GEF project implementation stage. Partnerships will be developed between the administrations, local communities, NGOs and producer communities and associations for the implementation of envisioned activities. The riparian populations will be closely associated to the management of infrastructure and community facilities as well as local mechanisms for conflict management.

For the GEF component as well, as the original PFD highlighted, the ultimate program beneficiaries are the rural populations living in the Lake Chad basin whose livelihoods depend on its natural resources (farmers, herders, fishermen). The project aims at strengthening their capacities and awareness to assume responsibility in the protection of the basin, and their role in the enhancement of its agro-sylvo-pastoral potential. It will also help to improve the livelihoods of the most disadvantaged populations, women and youth in particular, and to diversify their sources of income through the demonstration activities and also the subsequent national child projects.

PRESIBALT's sustainability rests also on beneficiary participation in the financing of community facilities (rural markets, water points, etc.), and related works (maintenance of water courses, soil protection, silt control, planting of fruit trees and forest plantations, etc.). Beneficiaries will take charge of the maintenance of socio-economic infrastructure and their management by committees. The simplicity of planned infrastructure and strengthening of beneficiaries' capacities are also consistent with an approach that fosters the sustainability of investments. The capacity building efforts aim at enabling the various stakeholders and partners to fully assume the functions and missions assigned them, and thus to thereafter sustain them. Moreover, the positive returns from locally appropriate sustainable resource practices, such as water harvesting and soil fertility techniques, will be clearly visible in increased yields and other communities and farmers will seek similar actions.

The GEF program and all its child projects will be implemented as part of the PRESIBALT and activities are fully integrated within the PRESIBALT itself. As such, the implementing modalities will be the same as for the PRESIBALT program (see chart below). This includes among others the same coordination unit at regional level, the same steering committee, and the same institutional arrangements at regional level and in the countries of the Lake Chad Basin. The project, both baseline and GEF, will primarily be implemented by the LCBC. A Regional Coordination Unit (RCU) will be set up within the General Directorate of Operations (DGO). Apart from the Regional Coordinator, the RCU staff will comprise a Manager/Accountant, Procurement Specialist, M&E Specialist, Gender and Social Development Specialist, and support staff. The staff will be sufficiently competent to conduct relevant regional and local studies that will underpin the resilience-building initiatives. It will benefit from technical assistance comprising a high-level hydrologist specialized in socio-ecological and resilience issues, a sustainable development planning specialist and short-term expert consultants, additionally for GEF activities. The RCU will rely on the Technical Departments of LCBC to implement activities in their respective spheres of competence. The General Directorate of Administration and Finance (DGAF) and the Directorate of Project Planning and Monitoring-Evaluation (DPSEP) will include accounting, procurement and M&E aspects into their institutional arrangement. At country level, Project Management Offices will be opened to coordinate the implementation of national level activities, working closely with technical state services.

Chart: Implementation organization of the PRESIBALT



At the level of the LCBC, a Steering Committee (SC) will be put in place to ensure project governance. It will comprise inter alia representatives of the LCBC Executive Secretariat (Executive Secretary, Director of Operations, and Head of Security), national Focal Points, the Donor Advisory Committee, the Inter-ministerial Technical Committee, and Women and Youth Organizations. An inter-ministerial committee will be put in place in each country.

To implement specific activities of the baseline and GEF components, the LCBC will resort to specialized institutions and NGOs. UNESCO, SOS Elephants of Chad, FAO and IUCN have been identified to implement baseline biodiversity plans, eco-development and elephant protection activities, fisheries development plan and floodplain flooding dimensions. Other institutions like the African Centre for Meteorological Applications Development (ACMAD) and the AGRHYMET Regional Centre will be consulted for data collection/standardization, observation networks and generation of climate-related information. Strong collaboration will be set up with UNDP, GIZ, WB, etc. for synergy. In Nigeria, main stakeholders involved in project implementations at local level include communities, CSOs/NGOs, professional associations, traditional authorities, and ministries or state decentralized agencies (for water, agriculture, energy, etc.), such as the basin development authorities, the Nigeria Integrated Water Resources Management Commission (NIWRMC), relevant Catchment Management Offices, the Chad Basin Development Authority, and Komadugu-Yobe Basin Council. Communities will participate in the activities to develop and manage the social infrastructure, community interventions and GEF demonstration activities, while local NGOs will facilitate capacity building and awareness training, and the dissemination of practices and lessons learned. The LCBC will additionally need to work with government agencies in each country responsible for water resources management (ministries of water, environment, local government, LCB national institutions). Different components or activities will be led by different stakeholders as appropriate. The involvement of local organizations with expertise in the areas of intervention will be promoted also given security-dictated needs. Different components or activities will be led by different stakeholders as appropriate and the various partners intervening as technical operators will send periodic reports to the national coordinators.

Due to escalated insecurity in Borno state, the project formulation team was not able to reach the proposed project intervention areas to contact technical staff from the Borno State Ministries. Consequently, the project design has been based on extensive consultations mainly at the Federal ministerial level in Abuja. Information on existing ongoing projects was collected and reviewed. Two large meetings were organized by the Federal Ministry of Environment in Abuja in 2015 to ensure synergies with existing projects/initiatives and to communicate the program objectives and mission findings. These meetings suggested relevant actions and recommendations on how the project could be effectively implemented on the Nigerian side. Unfortunately, consultations with potential beneficiaries at the local level were not possible at the time. As such, project implementation will reinforce a participatory approach through immediate sensitization, information and experience sharing with local communities and producer associations that will benefit from the LCB-NREE. These participatory consultations will provide a platform to discuss the expected role of communities in its implementation. During the project validation workshop in N'Djamena, Chad, in April 2015, a Nigerian delegation attended and made useful suggestions on how the project should be implemented in Nigeria. They provided suggestions on outputs and activities for the project in their country.

B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF):

In a basin as complex and sensitive as that of Lake Chad, it is vital to integrate development and environmental strategies, which are closely interdependent. Socio-economic and ecological resilience are two aspects that are fully interlinked in this region. Lake Chad ecosystems have strategic value for the entire region. The Lake basin provides water, food and a livelihood to more than 30 million people within the conventional basin, of which the majority earn their living through agriculture, animal husbandry and fishing. The project places human needs at the center of the transboundary water system. The population's precarious living conditions and extreme vulnerability require efforts to center on: rehabilitating and enhancing the productive capacities of ecosystems; strengthening resilience of the population, especially of women and youth; and establishing stronger regional cooperation. An underlying framework based on INRM will encourage coordinated development and cohesive management of water, land and other resources, in order to maximize socio-economic wellbeing while sustaining vital ecological services.

The declining water flows and quality, erosion and silting are adversely affecting the provision of ecosystem services in Lake Chad and its entire basin. As a result, farmlands have been disrupted and fish production has decreased. The amount of water flowing into Lake Chad depends primarily on changes in rainfall and climate in the basin (which affects tributary levels and catchment health), changes which themselves influence the state of natural resources and the human pressure exerted on the Lake. The more the basin is affected by, for example, drought, the higher the pressure on the Lake. Within a context of local populations with unsustainable agricultural practices that deplete natural resources, increased pressures on the natural asset base will only be exacerbated (increased farming on marginal lands, pastoral lands turned into cropping areas, deforestation, etc.). The implementation of the Lake Chad basin program will address various forms of resource degradation and promote techniques and measures for rational resource use therefore leading to increased production of food crops, fish, meat, fruit and wood, with explicit benefits for food security and poverty reduction. The restoration of agro and forest ecosystems will be instrumental in alleviating poverty in the Lake Chad basin.

The project aims to support a transformational process towards INRM, protection of the environment and promotion of livelihoods. Its goal for transformational change is to modify human activities and institutions towards a more sustainable cross-border multiple use of basin resources and enhanced human wellbeing in this critical transboundary system. Lives in the Lake Chad basin are water-dependent. The project will thus contribute to sustaining livelihoods, securing food sources through protected natural capital, promoting equitable access to resources, reducing health risks and helping resolve or prevent conflicts over water.

In the region, food security depends substantially on rain-fed agriculture and fisheries. Small-scale agricultural growth remains key for poverty reduction in the region. As such, increasing the productivity of the landscape and reducing the fragility of the natural resources base will have positive impact on socio-economic development at micro-scale. The stabilization and improvement of productive capacity through enhanced water use efficiency and sustainable land measures will improve food security. The primary outcomes of the project are expected to be: improvement of living conditions, strengthening of resource governance, enhancement of social cohesion, improved productivity of land, INRM, increased average revenues of households, reduced vulnerability of populations, and improved livelihoods, especially of women. The focus is on the realization of multiple environmental and economic benefits through enhanced basin health and thus production, climate change adaptation, resilience in basin communities, and conflict resolution.

The PRESIBALT design took into account concerns relating to social conflicts resulting from the use of consistently depleting resources. Thus, rehabilitated farmlands and floodplains, small village irrigation schemes, and pastures resulting from the interventions will allow communities to increase their output and incomes. The social dimension of resilience is enhanced by the socio-professional integration of vulnerable population segments, particularly women and youth, as well as the financing of 800 income generating activities, labor intensive works and enhanced values chains of the main commodities that feed intra-regional trade (fish, cereals, livestock etc.). Thousands of youths (30,500) will be trained in relevant trades, create green companies and will gradually cease to be recruiting grounds for terrorist groups. The program will also help to improve regional consultation and cooperation for IWRM, which will in the medium and long terms reduce potential sources of conflict among competing nations. The project will promote appreciation of the value of the system locally and regionally.

The main socio-economic benefits expected from the PRESIBALT can be summarized as follows: (i) improved water availability in the Lake for human consumption, agriculture and livestock; (ii) improved fisheries numbers and production in the lake and its tributaries; (iii) reduced vulnerability to climate change and variability resulting from increased vegetative cover and improved ecological balance; (iv) sustained production and the development of non-timber forest products (NTFPs), such as honey and spirulina; (v) job creation and diversified livelihood base; (vii) improved food security, health, life expectancy, work load for women, and other benefits arising from increased social services and infrastructure.

INRM helps to manage and develop resources in a sustainable and balanced way, taking account of all the different social, economic and environmental interests. As such, the INRM activities will be carefully monitored to evaluate the socio-economic benefits and environmental impacts. A participatory and integrated approach will be used to promote a balance in competing water uses, equitable distribution of benefits, involvement of both women and men, and

community consultation in addressing SLWM. The project will additionally promote gender equity in management, governance, and capacity building, and the phasing out of fragilities.

PRESIBALT is classified by AfDB in Environmental and Social Category 2, according to its environmental and social safeguard procedures, given the nature of works to be undertaken (flooding of floodplains, anti-erosion/siltation operations, small irrigated schemes, boreholes, roads, socio-economic facilities, etc.). It was subject to an environmental and social assessment, pursuant to Bank procedures and regulatory frameworks of the countries concerned. The main project activities aim to improve lake water inputs and quality, and preserve and develop ecosystems. An Environmental and Social Management Plan (ESMP) was also prepared. Formulated in a context of advanced degradation of endangered natural habitats/species, PRESIBALT will help to rebuild production capacities for sustainable development in the whole basin.

Gender: The riparian countries of Lake Chad are among those with the highest gender inequality rates, ranging from the CAR, which was ranked 115th in the world in 2013, to Niger, ranked 146th the same year. The Lake region is among the poorest in Africa and poverty of women is heightened therein: 63% of women in the extreme north of Cameroon are poor, compared to the national average of 33.4% in 2012. Women represent about 52% of the population and have a heavier workload, compared to men, and have lower access to education, information, agricultural extension services, inputs and credit. Cereals are cultivated mainly by women and spirulina is harvested solely by women. Considerable land-related gender disparities also exist (women in the Nigerian zones of the project own only 4% of the lands). Fisheries activities are dominated by men but processing the catch falls on women. All the countries in the program area are subjected to considerable population pressures and high birth rates, with Niger ranked as the country with the highest birth rate in the world (7.6 children per woman). In the Lake region, the fertility rate of women is higher than the national averages (it stands at 7.3 children per woman whereas it is 5.7 at the national level and in the North-West region of Nigeria). This situation, coupled with other factors such as the limited ability to take decisions, limit the access of women, particularly nomadic women, to health care services. The program will contribute to reducing gender disparities in the Lake Chad basin. In the long run, almost 8 million women will benefit from the program activities. By facilitating the participation of women in activities and their access to land security, decision-making processes and investment, on the one hand, and by enhancing the organizational capacity of women's producer groups, on the other, PRESIBALT plays a strategic role in promoting inclusive growth and improving the situation of women in the project's target area.

The program will work to mainstream gender in all its components, including through equitable access to productive resources and planned capacity building activities. Women's integration and ownership will be promoted in basin resource users' forums and a gender-sensitive early warning system will be put in place. The baseline program will comprise a set of pro-women services centered on: the development of alternative livelihoods; creation of ecological value chains; processing of fishery and agricultural products; support based on their structuring in groups; suitable technical vocational and social trainings (including in reproductive health); promotion of access and land security of irrigated schemes (40% of land allocated to women's groups through local conventions); access to factors of production and technologies by reducing their work time and increasing their productivity; and access to outreach services and multi-purpose centers (60% of women among beneficiaries). A M&E system based on gender disaggregated data as well as on gender-related indicators will be set up. For example, the number of women working in the investment and demonstrations activates and the number of women participating in the trainings will be monitored. The capacities of LCBC and gender-related stakeholders will be strengthened by recruiting a gender and socio-economic development specialist in the Regional Coordination Unit to enhance training and mainstreaming aspects.

Social: PRESIBALT will help to improve the low level of human development, and consequently, strengthen the overall resilience of the populations and their living environment by acting on its key determinants. It will boost human capital value by strengthening knowledge, fundamental rights and know-how of about 3 million people through sensitization, training and literacy of locals, including on sanitation. By widening access to, and encouraging the use of, primary health care infrastructure (300,000 beneficiaries every year) and quality drinking water (80,000 beneficiaries per year) and by maintaining these facilities, the program will ultimately reduce by at least 50% morbidity and mortality rates, especially those linked to water-borne diseases (cholera, diarrhea, typhoid fever and malaria). Further, the construction of multi-purpose centers equipped with solar kiosks will strengthen some 80,000 beneficiaries' access to community services and energy at competitive prices and contribute to the adoption of new social habits and practice of

new trades (installation and operation of solar kiosks). All these will improve employment prospects, living standards, and social conditions of the population. The employability of women and youth will also be enhanced through on-the-job training in the trades offered (30,000 per year) and technical training (500 beneficiaries per year) for promising trades chosen depending on the needs of the Lake economy. In addition, various projects and IGAs will consolidate or create about 150,000 jobs yearly. Newly created enterprises will foster the immediate generation of direct long-term and/or seasonal jobs linked to construction of infrastructure or their long-term maintenance. Lastly, the combination of works, vocational training and access to means of production for the poorest will generate additional income for the populations estimated at 50% minimum of current revenues, encouraging them to use social services like education and health and strengthen the value of social capital. PRESIBALT activities will not lead to population displacement. Rather, it is meant to stabilize populations in their natural environment, offering them alternatives to take charge of their own sustainable development.

The Nigeria project will provide concrete socio-economic benefits to smallholders in Borno state, both men and women, reaching a total of about 3 million people, directly or indirectly. The outputs related to investments, capacity building, technology transfer, and knowledge management will specifically also target women and vulnerable groups (and monitor this). The project will assess and build on the diverse or common needs of both men and women, basing interventions on gender differentiated contributions and needs during the design, implementation and M&E. Women will be the main beneficiaries of several of the community level activities since they will focus on initiatives and products that are of particular concern to women, including the development and use of non-timber forest products, efficient cook stoves, and income generating activities emerging from diversified production. Activities could promote their long-term economic empowerment. Women in Borno state do most of the fuelwood collection, tend gardens and cook and will therefore greatly benefit. Gender-sensitive facilities, SLWM and SFM practices deliver a number of benefits such as improved yields/food crops, new crops, energy security and fodder/fuel availability, also reducing wood collection time for women. Communities will benefit from increased production and access to forest products especially fuelwood, lumber and byproducts. In addition, the implementation of locally appropriate SLWM practices will enable farmers and communities to adapt and become more resilient to climate change by securing productive assets and services. Some of the activities will result in new sources of employment, including for young people who are increasingly tempted by migration and by terrorist groups. Locals will directly benefit from the training programs associated with field investments. Engaging local communities in ground activities will contribute to building social capital in the region and acceptance of new technologies and practices, for longer term impact on the environment and livelihoods.

B. 3. Explain how cost-effectiveness is reflected in the project design:

A regional umbrella program will generate benefits for the overall environment while seeking to promote interventions for the ecological and socio-economic needs of each country. The Lake Chad program seeks to address problems faced within the Basin which are transboundary in nature as they extend over ecosystems, across landscapes and beyond local and national boundaries. The approach at the basin level entails the recognition of interrelated activities that have local and regional impact. A programmatic approach thus eliminates repetition in the learning curve and duplication of efforts from the Lake Chad Basin countries. The programmatic approach enhances complementarity in activities and across child projects. Building capacity at the regional level through the LCBC is also a lower cost option for ensuring retention of skills and institutional memory. Individual countries often lack the resources to sustain a dedicated lake basin team of experts and regional effort is required to raise such resources. The program will deliver skills for common problems and be able to monitor results. If the activities were to be implemented as only individual country initiatives there would be difficulty in creating noticeable impact for such a problem and uneven skills development would not survive frequent migration of communities across frontiers.

The programmatic approach is thus considered to be more cost-effective than stand-alone projects due to economies of scale, reduced transaction costs and optimization of synergies between activities, components and partners. The activities contribute to specific identified common problems for which a coordinated response can be better monitored and measured. Duplication of activities can more easily be avoided if the projects are all part of one program that puts strong emphasis on regional consultation. Lessons learned can also be more easily shared and applied for impact at scale. Implementation experiences and adopted best practices will also be shared between countries and between sub-regions in the same country.

The project is cost-effective in a number of ways:

- The project will be executed by the LCBC, thus reducing management tiers, enhancing cooperation, and ensuring close communication with stakeholders and beneficiaries. Oversight and monitoring by AfDB will further ensure operational effectiveness and expected cost savings.
- The project is based on and designed around the SAP and country NAPs which support country ownership. Numerous partners are committed to an effective implementation of the SAP, Vision and Water Charter. The AfDB-GEF project has been designed to maximize collaboration and avoid overlap with other interventions. Continuous consultations will help guarantee coordination and the tailoring of activities to the needs of the LCBC and basin countries.
- Project design has been fed by lessons learned from previous projects and a number of technical studies, thus seeking technical solutions based on realities on the ground and science. This helps optimize available resources and better mainstream issues such as fragility, resilience and gender.
- The programmatic approach will facilitate the implementation of child projects that will be inter-related with experience learning for a number of GEF focal areas.

The baseline project's economic benefits (tangible and intangible) stem from its supplementary value added induced over 20 years plus the additional agricultural, animal, fishery and forest production. This added value will contribute to raising the GDP of the countries concerned. The other benefits of the program include the creation of 150,000 jobs every year and improvement of households' resilience against climatic events, which helps maintain incomes even in the face of climatic shocks. The sustainability of project interventions will also be assured through effective involvement of private sector actors in baseline activities, including for processing, packaging, quality and market access issues. The simplicity of planned infrastructure and strengthening of beneficiaries' capacities are also consistent with an approach that fosters the sustainability of investments. The innovative aspects of the GEF project are related to: (i) the impact of interventions based on the elimination of production and human-induced constraints; (ii) technical innovations for drylands; and (iii) enhanced institutional and community awareness and capacity to sustainably manage biodiversity and resources together.

At the institutional level, sustainability is ensured by the LCBC and by the alignment with the Vision 2025 and the SAP. The reinforcement of LCBC's coordination role and strengthening communication and collaboration with the national bodies will ensure better sustained regional partnership. At the community level, institutional sustainability will be guaranteed by beneficiary participation in the development and validation of management plans for fisheries, forests and land management as well as by the capacity development programs with strong dissemination of good practices and guidelines. The operational and maintenance risk is tackled by the simplicity of the infrastructures envisaged and decentralized technical services.

Investing in SLWM to control and prevent environmental degradation in the wider landscape is an essential and cost-effective way to deliver multiple GEBs related to ecosystem functions. The project will ensure sustainability of RE technologies based on the deployment and diffusion of reliable, least-cost renewable energy technologies that address the natural resource endowments of the country.

Other Options or Alternatives Considered	Brief Description	Reason for Rejection
Separate national projects	These projects are based more on national perspective rather than on an integrated ecological logic where due regard is given to how the overall river-lake system operates and seeks proper management for a shared benefit of the resources.	A regional approach, based on an integrated ecological vision, is most effective and in line with the key principles of the Water Charter and SAP.
Approach targeting one sub-sector only (agriculture, livestock, agro-forestry or fisheries)	Such an approach aims to develop only one sub-sector: stockbreeding, agriculture, agroforestry or fisheries.	To improve resilience of rural households and economies of the Basin, a multi-sector eco-systemic approach is required based on an integrated and holistic view of the entire landscape (INRM).

Conservation or development	A critical question for Lake Chad is on whether conservation of the lake as a highly valuable global resource or local socio-economic development should be prioritized. Sometimes gains in one means losses in the other sphere.	Livelihoods and basin ecosystem health go hand in hand. This project rests on the critical linkages between conservation and development.

C. DESCRIBE THE BUDGETED M &E PLAN:

Monitoring and Evaluation (M&R): The overall LCB-NREE program M&E at the regional level will be carried out by the LCBC Executive Secretariat through the Department of Planning, Monitoring and Implementation of Projects. Specific indicators based on a results framework will be monitored and reported on a quarterly basis to assess the progress and achievements of results. National level M&E will be led by national coordinators and M&E specialists that will be identified in each country. These will define simple specific indicators of a technical and organizational nature for the national components, using the indicators featuring in the overall program results framework thus ensuring compatibility. The program will also undergo external M&E annually by the supervisory Ministries of the Countries and the Basin Observatory, with support from AfDB.

Monitoring will occur at project and program level. As required in AfDB operations, the LCBC Secretariat and the national coordination units will prepare quarterly progress reports, programs and annual reports, annual budgets, as well as progress reports. In addition, the national Environment Departments will provide half-yearly environmental monitoring reports. The annual progress reports combine both AfDB and GEF reporting requirements. As is current practice with baseline projects, regular joint supervisions and mid-term review missions will be carried out by the Bank (and if possible, other partners) for periodic monitoring in order to make the necessary adjustments for achievement of the objectives and outputs at various levels. The program will be closely monitored by the AfDB Field offices in Cameroon, Nigeria and Chad. At the end of the program, the Governments and LCBC will prepare a completion report.

An inception workshop will be held within the first three months of project start with participants being those with direct roles in project implementation, AfDB country office staff, relevant regional technical policy and program, advisors, as well as other stakeholders (including community representatives if possible). The inception workshop is crucial to building ownership for the project activities, discuss responsibilities and to plan the first year annual work plan. Demonstration activities will be discussed as well.

The program will be implemented on the basis of a modular approach to take into account the security context prevailing in certain areas around Lake Chad. M&E will also include adaptive management so that the project retains flexibility when needed allowing harmony with partner interventions (especially the SAP update) and following a theory of change approach. Successful experiences will be collected and used as examples and benchmarks for other regions sharing similar challenges should. A common information system and the consolidation of knowledge is needed in order to enhance the uptake of available and new knowledge.

M&E will be based on the following:

- Project Start-up/inception workshop;
- Inception report;
- Project Implementation Reports (PIR);
- Periodic progress and M&E reports (quarterly and annually);
- Evaluation missions and site visits;
- Mid-Term Review (MTR);
- LCBC and NC reports;
- Terminal Evaluations;
- GEF tracking tools.

To better illustrate the M&E aspect, the following table shows outputs and responsibility at each step:
(Please note that this M&E activities and budget is valid for all child projects included in this PFD. The GEF funding is implemented as part of the PRESIBALT as a component and within the same PIU).

Report type	Prepared by	Responsibility	Preparation frequency/period	Submission	Budget ($) Excluding PRESIBALT co-financing
1. Activity reports	PIU Staff	PIU Coordinator	Per Reporting cycle agreed with the GEF	AfDB	50,000
2. Progress reports	PIU Staff	PIU Coordinator	Per Reporting cycle agreed with the GEF	CBLT secretariat	15,000
3. Project Implementation Report (PIR)	PIU Coordinator	PIU / AfDB	Before June 30, of a set fiscal year	AfDB / GEF Secretariat	AfDB staff
4. Mid-Term Review report (MTR)	Independent consultant	PIU / AfDB	Per Reporting cycle agreed with the GEF	AfDB/ GEF Secretariat	5,000
5. Terminal Evaluation	Independent consultant	PIU / AfDB	After project completion but no more than 12 months after	GEF Evaluation Office	10,000
6. Project Completion Report	PIU Coordinator	PIU Coordinator	End year of project completion date	AfDB / GEF Secretariat	AfDB staff

The M&E arrangement will help to decide the level of physical (implementation rate overall and by component) and financial implementation (commitment rate, disbursement rate of ADF, the State and other financial partners) of the program. It will be fed with information coming mainly from control/supervision missions and progress reports. The monitoring of physical (commitments and disbursements) versus expected outputs will allow for ensuring the timeliness of the program. Specialized M&E consultants will assess program effects and impacts (socio-economic, environmental, gender, etc.) under the direction of DGPSP and the LCBC.

Progress reports will include, but are not limited to, the following:

- Progress made toward project objective and project outcomes, with indicators, baseline data and final targets;
- Project outputs delivered per project outcome (annual);
- Lessons learned/good practices;
- Expenditure reports;
- Risk and adaptive management, with considerations for revisions needed;
- Portfolio level indicators (i.e. GEF focal area tracking tools) on an annual basis.

The Terminal Evaluation and Project Completion Report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

Learning and knowledge sharing: The baseline and GEF projects will together assist LCBC to consolidate the regional database by installing a regional center for processing statistical, geomatic and satellite data (agricultural, climatological, limnometric, piezometric and socio-economic) to allow for regular collection of necessary data and information for a better knowledge of the Basin's water resources and environment. The program will strengthen LCBC's capacities to optimally use all aspects of knowledge acquired and will finance stakeholder forums to better share the information collected. Spatially-distributed SAP-relevant information will be shared with meteorological and agro-hydrological monitoring networks. Hydrological information will be supplemented by other precise data on water resource use as well as regional/local water status reports (evapotranspiration, soil water assessment, areas under cultivation, areas under irrigation) in order to identify the risks of natural disasters and allow for a rational and proactive management of such risks. A system for sharing knowledge on program activities and IWRM will be set up through

regular dissemination on the LCBC website and IWLEARN in order to build on and manage the knowledge and experience acquired. Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. This will allow stakeholders to identify, analyze, and share experiences that might be beneficial in the design and implementation of similar future projects. IWLEARN will provide for the sharing of experiences and replication of successful practices in other regions, especially those confronting similar issues and challenges.

Key performance indicators for the PRESIBALT and the regional IW-funded component of the LCB-NREE program will be, inter alia: adoption/implementation of policy and legal regulations and plans at national and local levels that show progress towards IWRM/INRM; water use efficiency improvements; protected wetlands; inclusion of aquifers, groundwater and climatic change issues in strategic frameworks and operations; improvement of water inflows and balance; completion rate of works and infrastructure; increase in production (t/Ha); rates of increase in cereals, fish, livestock products, etc.; reduction in food and nutritional insecurity; drop in infections related to water-borne diseases; rate of increase of project target revenues and average household income; number of trained men, women and youth; increases in revenue, disaggregated; level of women's involvement in decision-making bodies; and involvement of NGOs and community organizations. The Department of Planning, Monitoring and Evaluation of the LCBC Executive Secretariat, the Basin Observatory and the national services will monitor these indicators. To ensure this, a strong internal and external M&E mechanism will be set up.

The GEF increment will additionally contribute to monitoring key environmental indicators based on GEF focal areas and their GEBs, which will thereafter be aggregated at program level. For the national child projects, these will include for BD: intact vegetative cover and degree of fragmentation in production landscapes measured in hectares; for LD: change in land productivity, changes in vegetation cover in targeted areas, increase in land area under SLWM in targeted areas (hectares, reported by crop, range, forest, wetlands); for CCM: tons of CO2 equivalent avoided (both direct and indirect), change in carbon accumulation rates in biomass and soil, compared to baseline (tC/ha); for SFM: land (hectares) covered by forest, reforestation area, emissions avoided from deforestation and forest degradation.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):): (Please attach the Operational Focal Point endorsement letter(s) with this form. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Mrs. Olabisi Bolanle JAJI	Director NIGERIA	FEDERAL MINISTRY OF ENVIRONMENT POLICY ANALYSIS, MONITORING AND INSPECTORATE DEPARTMENT	09/08/2011

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address

Mahamat Assouyouti		02.23.2016	Mariam Yinusa		M.YINUSA@AFDB.ORG

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Please refer to p. vi of the PRESIBALT Appraisal Report.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Comments	AfDB Responses (prepared May 2016)
Comments from GEF Secretariat on LCB-NREE PFD (original date of review 15/03/2012)	
Please, remind that many comments were made during the review to be clarified at CEO endorsement. Please, notably refer to the comments made in the cell 28 entitled "Items to consider at subsequent individual project submissions for CEO endorsement", and explain how these points are included in the PPG.	All comments have been addressed. Some were addressed at PPG approval stage (as noted), but most during preparation of the CEO endorsement documents as described below. The responses are relevant to each child project. Comments on appropriateness of program activities and budget justifications were addressed in the request for PPG (dated 18/5/2012). STAP comments were to be included as tasks to be performed during the preparation of the program, and this has been done.
Cell 28 Items *1) Please, confirm the cofinancing and document in detail. It should only involve activities that are aligned with the GEF objectives.*	These clarifications were part of the tasks under the PPG and have been addressed during the design of the program. The co-financing has been confirmed under a new baseline project (PRESIBALT). Due care has been taken to align all activities with the GEF5 IW strategy, primarily Objective 1 (regional), and GEF5 strategies for LD, BD, CCM and SFM (national).
2) Please, provide a deep analysis of project baseline, 1) confirming the incremental use of GEF resources and 2) reassuring that no controversial projects are used to leverage GEF financing.	A deep analysis of the new project baseline has been provided, in addition to a section on the incremental use of GEF funds. The GEF resources are not used in projects considered controversial, but only for activities aligned to the GEF strategies. The PRESIBALT is not controversial itself, and it forms a very suitable baseline for the GEF increment. AfDB national projects that had been identified in the PFD as additional baselines are not considered as co-financing anymore.
3) Please complete a deep risk analysis highlighting institutional issues, implementing arrangements, reputation risks, and ecological risks (notably to be sure that GEF resources are used to rationalize water uses, or that all measures are taken to avoid the use of exotic species with invasive risks).	A deep risk analysis has been included, with a table highlighting risk, level of risk, and mitigation measures, and additional text explaining some key issues in more depth (implementation risks, ecological and socio-economic risks, climate change risks, regional insecurity). Activities will focus on water use efficiency and SLWM. Strong monitoring frameworks will be established to mitigate ecological risks, with sufficient safeguards developed (for e.g. to prevent invasive phenomena in demonstrations and child projects for agriculture or pastoral activities).
4) Please make sure that the IW funded subprojects follow the IW GEF 5 strategies and only include eligible activities	Strong attention has been given to making sure the IW regional project, its activities and demonstration pilots are eligible under

following GEF 5 IW objective 1. In this early form, the descriptions do not offer enough details to understand if this will be the case (activities such as following could be considered: community based drip irrigation, community based IWRM demonstrations, Wetland management and protection as well regional IWRM knowledge management would be among eligible activities)	the IW GEF5 strategy and align to its long-term goal. IW funds will only be used for the regional umbrella project and its activities are consistent with IW-1, with demonstration pilots focused on water use efficiency and SLWM for the protection of ecosystem services. Table B and section A.5 clarify the activities in detail. Child projects will be aligned to the LD, BD, CCM, and SFM focal areas as appropriate.
5) We would expect to see specific details of the baseline projects for each focal areas and how those baseline project align with the objectives of the respective GEF focal area. We would expect to see how the incremental funding would build on the baseline project to achieve global environmental benefits.	These comments have been taken into account in each child project falling under the program. The incremental reasoning and GEBs are explained in detail in section A.5, to show how GEF funding builds on the baseline (well described in A.4).
6) Using the principal of incremental reasoning, specific carbon emission benefits and other benefits must be estimated and presented. These benefits estimates should be specific to the types and scope of each intervention for each project. Also, by using the principal of incremental reasoning, the GEF funding for each intervention should be justified.	For each national child project, carbon emission benefits and other benefits have been identified under the section on GEBs. GEF funding from LD, BD, CCM, and SFM is justified in section A.2 and A.5.
7) Investment mechanisms to demonstrate or procure renewable energy systems under component 3 should be spelled out in clear and specific detail, with the types of systems to be used, the number, and estimated unit costs. The design and structure of investment mechanisms in each country should be documented.	This has been done during the preparation of child project components on renewable energy that use CCM funds. Please refer to child project outputs and descriptions.
8) Please, detail the monitoring at project and program level.	Monitoring will occur at project and program level as described extensively in section C. Both a plan at project level with specified indicators and means of collecting information and a strong M&E strategy at program level will be developed. Specific monitoring and reporting requirements are mandatory by the AfDB as well (progress reports, supervision missions, final evaluations, etc.), and these will be supplemented by the GEF tracking tools.
9) Please provide EIA to make sure that the suggested pumping of groundwater resources will not affect the lake and groundwater level negatively.	An EIA or an Environment and Social Management Plan (ESMP) depending on the environmental classification for the project is necessary for all AfDB projects. An ESMP was prepared for PRESIBALT to define potential risks and mitigation measures. Furthermore, EIA procedures will be developed or revised and adopted by the LCBC with a common methodology for all basin interventions, thus analyzing and reducing risks arising from any intervention in the basin (including on groundwater withdrawal, irrigation and agricultural development projects, etc.)
Please refer to the comments in the STAP review and responses from AfDB, especially on dealing with potential tradeoffs, master wood energy plan, and baseline for carbon estimation, and be clear the PPG includes activities to address the rating of "major revision". *STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical omissions in the concept. If STAP provides this advisory response, a full explanation would also be provided. Normally, a STAP approved review will be mandatory prior to submission of the project brief for CEO endorsement. The proponent should provide a report of the action agreed and taken, at the time of*	Some key issues in the STAP review such as the additional assessments required, baseline information and identification of climate adaptation measures have been addressed during the PPG. The action plan requested will be prepared and targets and indicators elaborated upon in line with the updated SAP. Furthermore, the six child projects will be made available to STAP for review. Please see below for detailed addressing of STAP comments.

submission of the full project brief for CEO endorsement.	
Table B: *Please explain in the text how the activities are going to provide the basic elements to develop the four components of the Program.*	Comment was addressed in PPG request document. The four PFD components remain relevant despite the baseline change and can be considered overarching program components. Each child project then explains its own activities in detail and how they relate to the overall program.
Please explain what are the expected results of this PPG: we understand that one regional project document will be prepared and potentially five national projects. However, the phrasing is not fully clear for us. Please, clarify.	Comment was addressed in PPG request document. The outputs of the PPG phase are five (5) national projects and one (1) regional project, all linked under the overall LCB-NREE program. The regional project uses only IW funds.
The collection of information to identify the baseline scenario, the limiting factors, the risks, the existing approaches related to nature resource management and conservation, the energy consumption patterns, the political, institutional, organizational, and technical capacities of all stakeholders at regional and local levels, are typically eligible under a PPG.	The comment was noted with thanks and taken into account during preparation of CEO endorsement documents. It is still relevant with the new baseline.
Confirm that a M&E and a capitalization strategy will be developed.	A M&E plan is developed for all AfDB projects and will also be developed for the LCB-NREE Program and each of its child projects. Please refer to section C on the description of M&E and knowledge learning.
CCM and SFM/REDD+ objectives require credible estimates of carbon benefits, or greenhouse gas benefits more broadly if appropriate. Please, confirm that this analysis will be conducted.	These are addressed in the child projects that use CCM and SFM/REDD+ funds. Credible estimates have been made.
Some type of carbon monitoring system is expected. Please confirm that this item is included in the tasks. *These elements have to be reflected in the ToR of the different specialists (carbon monitoring, renewable energy activities). Which specialist will be the experts on forest carbon issues, and which on renewable energy activities?* *Please, explain how the tradeoffs will be handled if the activities are done in separate analysis.*	Comments were addressed in PPG request document. PPG development of TORs for consultants/experts reflected these issues and needs.
Please remind that the funding from CC is for mitigation. Confirm that climate resilience issues are considered.	Comment was addressed in PPG request document. Climate resilience is a key cross-cutting issue of the IW and child projects but CCM funding for mitigation activities is only used for eligible activities in the child projects, mainly on investments in renewable energy. The program in general reflects consideration for climate change adaptation, critical in the Sahel and Lake Chad basin, and given the recent preparation of the LCDAP.
The activities 1-5 are welcome in a PPG (institutional analysis, component studies, environmental and social analysis, climate risk analysis, stakeholder consultation).	This comment was noted with thanks and we confirm use of PPG for these activities and analyses during project preparation. Activities included stakeholder consultations, field visits, and a workshop with countries to define needs and activities.

Please note that GEF resources cannot be used for coordination and management costs for a PPG (see p.2 and p.6).	Comment was addressed in PPG request document.
2. Component studies: please note that the activity or the result entitled "project document finalized" is not eligible per se under a PPG. The PPG has to be used to prepare all preparatory activities and provide the basic information for the project document. But the project consolidation and finalization are typically activities that are expected from the Agency or the cofinancing.	Comment was addressed in PPG request document.
6. As mentioned above, it is not possible to include GEF resources in the coordination budget (here $56,000). Moreover, $200,000 are shown as cofinancing for this component. We have difficulties to figure out how $200,000 of cofinancing can be assigned to management costs while "only" $130,000 are assigned to technical activities and consultations.	Comment was addressed in PPG request document.
We understand that the development of such program is difficult and need enough resources. However, we expect that the programmatic approach will also be a way to be cost efficient and reduce transaction costs. Based on the PPG costs for individual projects, we are expecting a PPG under $400,000 (equivalent to $70,000 for each individual project and $50,000 for the regional project). Please, revise.	Comment was addressed in PPG request document.
Table C *Please, provide the breakdown between focal areas and per country. We remind that the PPG is financed by Country STAR allocations used for the program. The table C has to reflect the detailed breakdown per focal area and per country.*	Comment was addressed in PPG request document.
Table D *- The part devoted to international consultants seem high. Please, justify or decrease the budget.*	Comment was addressed in PPG request document.
GEF resources cannot be used to finance coordination (cf $40,000 in the table D).	Comment was addressed in PPG request document.
We understand that the program needs to develop consultation at regional, national, and local levels. Please, justify the amount of $80,000 for consultations.	Comment was addressed in PPG request document.
Please note that there are discrepancies in the cofinancing between the table B and the table D (respectively $330,000 and $150,000).	Comment was addressed in PPG request document.
Annex A: *Please revise the last column (tasks to be performed). The tasks are not described for all consultants (p.6 and all consultants p.7).*	Comment was addressed in PPG request document.
80 weeks of international consultants at US$ 3,000 seem a high amount. Please, justify or reduce.	Comment was addressed in PPG request document.
Comments from Council (originally dated November 2011)	
Work Program: Comments From Council Members (Reference GEF/C41.08)	AfDB response May 2016.

Germany Comments Germany approves the Work Program June 2011. Attached, please find our comments on several of the PIFs and PFDs with the request to take these into account during the drafting of final project documents. We welcome every opportunity in which close cooperation between GEF projects and German bilateral cooperation as well as cofinancing agreements are feasible.	AfDB noted this comment and requisite by Germany and wishes to underline that the work of German cooperation agencies in the Lake Chad region (primarily GIZ and BGR) were closely taken into account, in order to build on and progress forward (for example, on groundwater). Close cooperation was sought during project preparation and will be continued during implementation, with a specific activity on strengthening a partner coordination platform within the LCBC to ensure donor/partner collaboration and synergy for a more streamlined SAP implementation.
French Comments The goal of the program is to conserve the water and agro-sylvo ecosystems of Lake Chad Basin through improved governance and integrated ecosystem management to ensure the sustainability of the resources and improved food security and water quantity and quality. It aims at mitigating the threats to the stability of the ecosystems, the rehabilitation of degraded lands and the conservation and sustainable exploitation of the biodiversity. It will also contribute, through demonstration actions such as plant cover restoration measures, to reduce land degradation and boost carbon sequestration reserves. It will address the causes of soil impoverishment through participatory protection of source heads (notably in CAR) and banks. It will provide significant world ecological benefits through biodiversity restoration and increased fuel energy capital. To complete this program (AfDB/GEF) and another current program (Prodebalt), FFEM is expected to implement a new project that aims to support the Lake Chad Basin Strategic Action Program. The objective of the project is to develop a decision making tool for the lake sustainable management. FFEM contribution is 0.8 M Euros. **Opinion: favourable**.	AfDB would like to thank France for its positive feedback and favorable reaction. Please note that AfDB reviewed programs by the French cooperation (mainly FFEM and AFD) in the Basin to inform its own program design and that collaboration and synergy will be pursued throughout implementation, as expressed above.
Comments from STAP (original date of review 8/10/2011)	
II. STAP Advisory Response Based on this PIF screening, STAP's advisory response to the GEF Secretariat and GEF Agency(ies): **Major revision required**	The AfDB made strong note of the STAP conclusion that major revision was required of the LCB-NREE program, and appreciated the input and guidance. All comments and issues were carefully considered during project preparation and addressed throughout the document text and as outlined below. An initial AfDB response to the STAP review dated 2/11/2011 (this could be provided if requested) has been supplemented with more updated information and responses made during preparation of the CEO endorsement documents (May 2016 responses here below).
III. Further guidance from STAP Lake Chad presents a unique challenge to science, regional governments and the local communities. Lake Chad has declined to 1/20th of its original size due to a combination of climatic change and inappropriate natural resource management. A series of attempts have been made to conserve and regenerate the Lake Chad basin. The current GEF project is a part of the long chain of international interventions. *There is too much focus on the institutional, organizational and management aspects of the LC basin and very little serious scientific assessment of causes and solutions that are needed to inform interventions.*	The design of the program has been based on SAP priorities and gaps that were identified during project preparation, based on analyzing partner interventions and the current knowledge context. AfDB agrees with STAP that Lake Chad presents a unique challenge to science, development and policy making and this has been emphasized in the IW CEO endorsement document, with a description of the natural, climatic and anthropogenic factors that underlie its fragility and variability. Each of these factors have been considered during preparation of the project and its components. The program supports and improves on the actions of previous AfDB programs (PRODEBALT and of AWF) by implementing guidelines arising from feasibility studies that were prepared under these

	programs, such as those aimed at checking silting and water erosion, and the Water Charter itself. In recent years, other partners have moved forward on work and studies related to groundwater (BGR, EU) and climate change adaptation (GIZ), which have changed the 'knowledge baseline' (technical, scientific, institutional) of the project. This has informed the choice of activities for the AfDB-GEF project in order to progress forward, building on science as well as avoiding duplication given the long chain of international interventions in the region. Furthermore, additional recent assessments, such as an expert group review by the Institut de Recherche pour le Développement (IRD) and a joint environmental audit, were made in 2014 and 2015 respectively with up to date and advanced information on the Lake Chad Basin. During GEF project design, these important studies and interventions have been carefully considered and consultation with basin stakeholders, partners and the scientific community was sought. Such coordination will continue throughout implementation for a better utilization of science and knowledge in enhancing project ecological and socio-economic impact. GEF incremental activities will build upon the baseline and recommendations emerging from recent studies to implement some of these measures. There is a strong focus in the IW regional project (component 3) on knowledge generation, standardization and monitoring to inform better decision making based on scientific data, technical aspects and a better understanding of ecosystem degradation trends, causes and solutions (remaining in line with the IW strategy). This is meant to complement activities towards the enhancement of institutional, organizational and management aspects of the lake basin (component 1).
The hydrological changes are the driving forces for the natural resources associated with the lake i.e. fisheries, recession cultivation on the lake floor and green vegetation for livestock. During recent years, the cycles of natural resources have become fairly predictable in the southern basin, but vulnerability has increased greatly in the northern basin (e.g., Lemoalle, Jacques, Bader, Jean-Claude, and Leblanc, Marc (2008) The variability of Lake Chad: hydrological modelling and ecosystem services. Proceedings of the 13th IWRA World Water Congress 2008 In: 13th IWRA World Water Congress 2008, 01-04 September 2008, Montpellier, France). *In the southern basin, the water is permanent in the center of the basin and in some pools of the archipelago, while the northern basin is often inundated. These conditions are significantly impacted by climate variability and change and make management of natural resources in the basin particularly challenging. Such management requires a high level of coordination and co-operation among riparian countries where conservation demands may often be in conflict with the livelihoods functioning.*	The focus of component 1 specifically targets enhancing capacity, institutions and cooperation for a better application of IWRM within the basin (regionally, nationally and locally), with added considerations for climate change and variability. The project seeks to ensure water is managed in a balanced and equitable manner in the basin by targeting regulatory needs and enabling aspects, including much stronger cooperation amongst countries and at regional level. Such an approach will also be central to the demonstration activities of component 2. The IW project builds on, and is meant to improve, efforts undertaken in in the baseline PRESIBALT, on-going and previous projects, such as the PRODEBALT itself and the GEF/UNDP/WB project which established the TDA and SAP. Furthermore, the conservation vs. livelihoods aspect is specifically discussed in the text. In the highly fragile Lake Chad region, preservation of the lake basin goes hand in hand with socio-economic development. The project aims to target longer term sustainability of this critical habitat, with a strong emphasis on ecosystem-based management that addresses the nature/human interface.
STAP notes that the proposed Program builds on the previous Lake Chad project (GEF ID 767, Reversal of Land and Water Degradation Trends in the Lake Chad Basin Ecosystem) which produced a transboundary diagnostic analysis and a draft Strategic Action Program (SAP), while the Terminal Evaluation reviewed the progress made towards implementation of the SAP. The present Program document (PFD) notes that the	The AfDB duly notes these observations and agrees. Yes, the program builds on and benefits from previous experiences and interventions, scientific literature, lessons learned and continued needs. It specifically addresses lessons learned and barriers emerging from GEFID 767 and PRODEBALT, as explained in section A.3 and A.6, including related to actual implementation capacity. The fact that 6 child projects were to be developed

principal lessons learnt from the previous project are discussed in the barriers to implementation section. In the light of the lessons learnt and STAP's screening of the present Program, significant strategic and operational concerns are noted by STAP which therefore requests a major revision of the Program document prior to its endorsement by the CEO. This is particularly important in light of the 'moderately unsatisfactory' rating given the prior project at entry. In addition, a major shortcoming of the present PFD is that it ignores the serious degradation that is ongoing in Lake Chad, with inflows continuing to decline. *Rather than planning to 'sustainably develop' Lake Chad, the priority should be to restore or rehabilitate it. In addition, the security conditions in several Lake Chad countries further challenge the prospects for progress. Thus, this project should benefit from all the previous experiences of various agencies including GEF as well as scientific literature available.*	following the one PFD document explains the generality of some issues and descriptions. Details are presented in the child projects which help respond to all STAP concerns on strategic and operational shortfalls and needs. If STAP believes that the PFD ignored the serious degradation that is ongoing in Lake Chad, with inflows continuing to decline, this critical aspect of the Lake Chad basin has been discussed further in this CEO endorsement document. Indeed, the project aims to target those very degradation trends, an aspect that underlines considerations for stronger IWRM and application in demonstration pilots. PRESIBALT itself is also explicitly focused on water inflow, with actions on desilting and anti-erosion. Furthermore, rather than only planning to sustainably develop Lake Chad, the priority with GEF funds is to eventually restore or rehabilitate the basin over the long-run. Degradation of the basin forms the backbone of GEF project concerns. The full AfDB-GEF program, with the IW regional project acting as the glue for national level interventions, is designed to promote sustainable solutions to identified problems and adaptive management within an environment of change and insecurity (political, climatic, etc.). The baseline PRESIBALT and GEF project both are fully aware of the security concerns and will be implemented through a "modular" and "conflict-sensitive" approach which allows for implementation of activities in the conducive regions based on annual insecurity assessments, and adaptive management.
STAP suggests the consideration of the following issues: *1. Drivers of degradation and loss of ecosystem services of LC basin: Given the scale of the project, there is a need for a systematic assessment of the ecosystem services provide by the lake, the forest and the agricultural systems and the decline, if any, of the ecosystem services. There is a need for a good understanding of the drivers of degradation of ecosystem services, rather than generic statements of causes of loss of ecosystem services.*	The drivers of resource degradation and loss of ecosystem services are also considered by AfDB a critical concern essential to project design. This has been addressed in the IW project description and an in-depth analysis of the Lake Chad context and drivers is available in the baseline project appraisal report and its technical annexes. Drivers were thus most definitely considered. Recent assessments and work on Lake Chad that discuss these very issues (by IRD, EU, GIZ, etc.) were carefully scrutinized to better understand the root causes of loss of ecosystem services to better inform design and potential for impact. The IW project also has a strong focus on protecting and sustaining ecosystem services both for the environment and for livelihoods. This issue emerges strongly from the IW project.
2. Baseline scenario: A detailed baseline scenario quantifying the extent of degradation and loss of ecosystem services, extent of fuelwood extraction, emissions of CO2 from degradation of forests and projections into the future under the no-project scenario, is necessary.	This is indeed important and this has been addressed in the child project descriptions and an in-depth analysis of the Lake Chad baseline scenario is available in the PRESIBALT appraisal report and its technical annexes. Baseline scenario descriptions will be provided for each child project, with a description of how the incremental funding builds on the baseline project to achieve the GEBs and other benefits and, in relevant child projects, specific carbon emission benefits.
3. Transboundary governance: From a scientific and technical perspective STAP has used the 2008 TDA and SAP (available via IWLearn) to inform itself of the major concerns and possible interventions. It is encouraging to note that the Lake Chad Basin Commission (LCBC) Executive Secretariat through the Department of Planning, Monitoring and Implementation of Projects will monitor and evaluate the projects. However, at the strategic level the principal observation to be made is that	This comment is well-taken, and yes, despite its important mandate, the LCBC's effectiveness is inadequate and needs much reinforcement. It is critical that the LCBC be strengthened in its management and enforcement capacities in order to effectively enhance transboundary governance. This is the motivation behind component 1 which aims to sustainably enhance the LCBC's management capacity, financing and stronger frameworks for a more effective implementation of its

without the LCBC having increased delegated executive authority over decisions affecting relevant catchment management in all participating countries, the potential for success of the Program remains in question. Indeed the PFD appears not to address sufficiently the issue of the adequacy of the mandate and enforcement powers of the LCBC, acknowledged to be amongst the root causes for lack of action since the LCBC's formation. STAP advises that no amount of scientific and technical information will result in achieving the environmental targets without more explicit political support for the LCBC to take difficult decisions regarding for example, water, livestock and agricultural management, and advises the Program proponent to clarify the role and powers of the LCBC and measures to be taken to address any shortfall in its executive authority. In addition, LCBC should seek competent technical partners from the region, such as through CORAF in the case of agriculture and livestock improvement.	mandate. The LCBC will be a prime target for institutional strengthening and awareness raising, augmented by its role as project executer. The project will also support the continued process for the adoption and implementation of the Water Charter, taking all the necessary measures to encourage its ratification by the remaining Member States. As a binding framework, this would be most effective in improving transboundary governance and the influence of the LCBC as a regional body. A stronger communication plan is also envisioned to increase political support for the LCBC. Effort will be made, as explained under component 3, to strengthen links and partnerships between the LCBC, national research systems, and international partners (such as OSS, AGRHYMET, CILSS, CORAF) for enhanced data assessment and improvements on the ground (environmental, socio-economic, and agricultural).
4. Trade-offs: There is a tendency throughout the PFD to imply that in all cases of environmental management whether for use of water, biodiversity or other natural resources there are always win-win outcomes, whereas in fact hard decisions may be necessary to negotiate and to enforce tradeoffs regarding natural resource exploitation. For example, regarding hydrology, the Program envisages an enhanced water observation network, including more piezometers etc. in order to assemble sufficient information to inform decisions about water allocations/management. However, the PFD in places appears to pre-empt acquisition of an adequate information base regarding use of groundwater. For example, in section F the statement Use of ground water through pumping will enable livestock to access water without having to graze in the wetlands presupposes that surface/groundwater interactions are favourable. They may not be and experience from other basins in Africa indicates that groundwater extraction has both short term seasonal and long term decadal consequences on surface water availability. For the five priority Ecosystem Quality and Water Resource (EQWRO) objectives arising from the SAP and the additional objectives taken from the NAPA and other convention-related instruments the proponents are advised to review their assumptions concerning the causal chain and therefore priorities assigned to the proposed projects envisaged under the Program. This is important to enable interventions that can sensibly be conducted in parallel, such as reforestation, cookstove technology, improving power distribution, to proceed, but others such as increased use of irrigation, sustained fishing effort, review of existing dams, are inter-dependent and require a more structured approach.	The issue of trade-offs is well-noted and the IW project specifically discusses the issue of competing priorities for socio-economic development vis a vis conservation that may compete for focus. Trade-offs need to be managed. The long-term goal of the baseline and its GEF IW incremental activities is to realize local and global benefits through actions that help sustain the integrity of the Lake basin and its ecosystem services, underlined by a concern for climate resilience and food security. Such an objective necessitates both a national and regional approach that considers the lake landscape and a working governance system needed for collective decision-making and benefit-gaining in both development and conservation aspects. It also necessitates a theory of change approach to achieve desired long-term goals. Measures will target the barriers to such a system and building knowledge and capacity at local, national, and regional levels for resilience and adaptive management in the face of impending change and growing resources scarcity. Adaptive capacity will need to address all socio-economic, demographic, climatic, political, security, environmental, etc. pressures and risks that face the basin, and their collective responsibility in resource depletion. Given the fragility of the Sahelian landscape, the role of Lake Chad as an oasis within a dryland, and rising regional security concerns, it is ever more critical to secure this ecosystem for all the benefits it brings, environmentally and socio-economically. The project, despite a baseline change, still follows the original guidelines of the PFD but the specificity of activities is better defined, with added consideration for new assessments and interventions as explained, which make cooperation and synergy ever more necessary. As an example, and to respond to STAP concerns, activities related to groundwater have been revised from the PFD given the actions on this in recent years by BGR and the EU. The project contributes to the IW goal also by promoting knowledge on the links and interdependencies between water uses (agriculture, surface and groundwater, biodiversity, etc.), climate, and livelihoods needs. A system of regular quantitative and qualitative monitoring of water resources at the basin scale will also be set up. An assessment of groundwater use and protection, building on BGR work, will be made (e.g. transboundary aquifer delineation, aquifer recharge

	management/options, use of groundwater for drinking or irrigation). Consistent environmental safeguards will make sure that, for example, future pumping of groundwater resources or large irrigation projects will not affect the lake and groundwater levels negatively. The final STAP comments on appropriately structured parallel interventions are taken up in child projects as well.
5. Targets and Indicators: The PFD contains indirect references to targets and indicators in the TDA and SAP documents, but includes in the PFD Results Framework not a single quantifiable target, yet in Annex 2 some specific targets are given not clearly consistent with the Framework. This is a complex multi-focal area Program and all parties must be clear on the directions and targets. STAP therefore advises that progress will be hard to monitor without well thought out actions to be developed from the existing SAP and other strategic plans and documented regarding interventions and targets. Barriers noted from the Terminal Evaluation Report of the previous project include the lack of an Action Plan which was to be developed from the SAP. Although this barrier is stated in the PFD surprisingly there is no mention of a Program component that will address this barrier. STAP requests that the Program be revised to include the production of an Action Plan which will include the necessary logical framework with indicators necessary to organize the work stated in the Program Result Framework. STAP further requests that the necessary SAP Action Plan be peer reviewed as a pre-condition for its implementation.	Agreed. The Lake Chad SAP is currently being updated (it is not yet known when this will be finalized) and before specific indicators can be determined, this update needs to be finalized and shared with AfDB. The program will also have a strong M&E framework to address the concerns by STAP to give the program a direction and better monitor progress and impact. In line with the updated SAP, the project envisages the development of a new Five Year Investment Plan (for after 2017), which operationalize the SAP and act as action plans.
6. Climate change risks: A number of studies [For example, FAO Report (2009) on Adaptive Water Management in the Lake Chad Basin-Addressing current challenges and adapting to future needs, World Water Week, Stockholm, August 16-22, 2009] have reported that change in climate, drought and declining rainfall as critical factors contributing to decline and loss of LC. This issue is not adequately addressed in the current project, except for passing references. There are many studies available which need to be reviewed and if necessary, new modeling studies may have to be conducted to assess the role of changing rainfall and drought in the recent decades as well as projections into the future. The NAPAs mentioned for the 3 countries are only preliminary attempts to assess the adaptation needs. Given the scale of the problem and the scale of the project, a good scientific modeling and assessment is necessary to understand the causes of degradation of LC, particularly the role played by drought and declining rainfall. And other climatic changes.	Climate change risks have been much better presented in the IW CEO endorsement document, both in the baseline explanation and the risks section (as required also by AfDB). The IW project is underlined by considerations for climate change and variability, and by measures to enhance adaptive planning. A number of studies were reviewed and analysed during PPG phase, including the mentioned FAO report and a recent Climate Change Study: Adaptation to Climate Change in the Lake Chad Basin made by GIZ, to better inform project design. Furthermore, the project includes an activity on establishing a hydrological monitoring system and simulation model developed to monitor changes in water flow, lake levels, and to assess impact under various future scenarios, including climate change and variability (drought, rainfall, etc.).
7. Adaptation to climate change: A few adaptation measures are mentioned. However, given the scale of the problem and the project, there is a need for a systematic assessment of various adaptation options and prioritization of the interventions to address the climate risk challenge. For example, a FAO Report (2009) on Adaptive Water Management in the Lake Chad Basin-Addressing current challenges and adapting to future needs, World Water Week, Stockholm, August 16-22, 2009] A number of studies are available which have considered adaptation to climate change in the LC region. b. SAVING LAKE CHAD,	Please see above comments which are applicable. Resilience and adaptive management motivate much of the IW project (in line with the IW strategy and its Objective 1), while climate change adaptation will also be a focus of select demonstration projects.

Based on Proceedings of Sirte Roundtable, Libya, 17th December 2008, Prepared by Engr. I. K. Musa With Contributions from Mohammed Bila, Boubakari Mana and Chaibou Mahaman on behalf of the Lake Chad Basin Commission (LCBC) and International Commission of Irrigation and Drainage (ICID).	
8. Renewable energy technologies: There is very little discussion on the extent of contribution of fuelwood extraction to degradation of ecosystem services of LC. The PIF mentions about the renewable energy alternatives but there is a need for a serious consideration of the renewable energy options, assuming cooking is one of the dominant uses of fuelwood or charcoal leading to loss of forests.	This issue is addressed in relevant national child projects. It is not applicable to the regional IW project.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[5]

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

PPG Grant Approved at PIF: $34,651			
Project Preparation Activities Implemented	***GEF/LDCF/SCCF/NPIF Amount ($)***		
	Budgeted Amount	***Amount Spent To date***	***Amount Committed***
Institutional Analysis	6,101	3,000	6,101
Component Studies	30,000	30,000	30,000
Stakeholder Consultations	20,000	15,000	20,000
Total	56,101	48,000	56,101

ANNEX D: DISTRIBUTION OF CO-FINANCING FOR EACH CHILD PROJECT

Please refer to PRESIBALT approved document for more details

Country	AfDB approved amount (Unit of Account)	USD equivalent
CAR	2,190,000	3,394,500
Cameroon	12,500,000	19,375,000
Chad	5,350,000	8,292,500
Niger	13,330,000	20,661,500
Nigeria	20,450,000	31,697,500

[5] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.