



Enhancing Conjunctive Management of Surface and Groundwater Resources in Selected Transboundary Aquifers: Case Study for Selected Shared Groundwater Bodies in the Nile Basin

Part I: Project Information

GEF ID

9912

Project Type

FSP

Type of Trust Fund

GET

Project Title

Enhancing Conjunctive Management of Surface and Groundwater Resources in Selected Transboundary Aquifers: Case Study for Selected Shared Groundwater Bodies in the Nile Basin

Countries

Regional, Burundi, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda

Agency(ies)

UNDP

Other Executing Partner(s):

Nile Basin Initiative (NBI)

Executing Partner Type

Others

GEF Focal Area

International Waters

Taxonomy

Biodiversity, Climate Change, Climate Change Adaptation, International Waters, Focal Areas, Land Degradation, Sustainable Land Management, Influencing models, Stakeholders, Gender Equality, Gender results areas, Improved Soil and Water Management Techniques, Sustainable Livelihoods, Ecosystem Approach, Sustainable Pasture Management, Integrated and Cross-sectoral approach, Sustainable Agriculture, Sustainable Forest, Community-Based Natural Resource Management, Restoration and Rehabilitation of Degraded Lands, Protected Areas and Landscapes, Terrestrial Protected Areas, Productive Landscapes, Community Based Natural Resource Mngt, Freshwater, River Basin, Aquifer, Lake Basin, Transboundary Diagnostic Analysis, Climate resilience, Least Developed Countries, Convene multi-stakeholder alliances, Strengthen institutional capacity and decision-making, Demonstrate innovative approaches, Transform policy and regulatory environments, Civil Society, Non-Governmental Organization, Community Based Organization, Academia, Indigenous Peoples, Local Communities, Type of Engagement, Information Dissemination, Consultation, Participation, Partnership, Communications, Awareness Raising, Education, Behavior change, Beneficiaries, Capacity Development, Knowledge Generation and Exchange, Participation and leadership, Access and control over natural resources, Gender Mainstreaming, Sex-disaggregated indicators, Gender-sensitive indicators, Women groups, Capacity, Knowledge and Research, Enabling Activities, Targeted Research, Innovation, Learning, Adaptive management, Indicators to measure change, Theory of change

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 1

Duration

60In Months

Agency Fee(\$)

506,298

A. Focal Area Strategy Framework and Program

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
IW-1_P1	Outcome 1.1: Political commitment/shared vision and improved governance demonstrated for joint, ecosystem-based management of transboundary water bodies. Outcome 1.2: On-the-ground demonstration actions implemented, such as in water quality, quantity, conjunctive management of groundwater and surface water, fisheries, coastal habitats. Outcome 1.3: IW portfolio performance enhanced from active learning/KM/science/experience Outcome 1.4: Targeted research influences global awareness upcoming critical global concerns.	GET	1,929,452	8,890,210
IW-2_P3	Outcome 3.1 Improved governance of shared water bodies, including conjunctive management of surface and groundwater through regional institutions and frameworks for cooperation lead to increased environmental and socio-economic benefits. Outcome 3.2 Increased management capacity of regional and national institutions to incorporate climate variability and change, including improved capacity for management of floods and droughts.	GET	1,700,000	8,479,895
IW-2_P4	Outcome 4.1 Increased water/food/energy/ecosystem security and sharing of benefits on basin/sub-basin scale underpinned by adequate regional legal/institutional frameworks for cooperation.	GET	1,700,000	8,479,895
Total Project Cost(\$)			5,329,452	25,850,000

B. Project description summary

Project Objective

To enhance knowledge and capacity for sustainable use and management of transboundary aquifers and aquifers of regional significance in the Nile Basin.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
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Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: Enhance current understanding and the knowledge on the resources base, threats and options for sustainable anagement and utilization of shared aquifers	Technical Assistance	Outcome 1 Improved understanding and knowledge of groundwater and how it interacts with surface water and the types of pressures on them, building upon existing information.	Output 1.1: Shared aquifers diagnostic analysis reports for all selected shared aquifers that serves as baseline fact-based analysis of current status of the aquifers, historical trends in resource availability, existing governance mechanisms at national and cross-border levels and threats that the aquifers face. Output 1.2: A regional groundwater knowledgebase for all shared aquifers that draws on data and analysis carried out as (1.1) above. Output 1.3 Water balance models for the selected aquifers with quantified:recharge, outflows (base flow, deep percolation, etc) and withdrawals.	GET	1,193,568	5,892,774

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 2: Development of action plans on groundwater resources governance, management, and protection for inclusion in national, sub-basin and basin wide frameworks: also including consideration of surface water/groundwater resources conjunctive use	Technical Assistance	Outcome 2	Output 2.1 Regional Shared Aquifers Integrated	GET	598,787	3,510,494
		Increased convergence of national approaches, policies and governance mechanisms for protection and sustainable use of shared aquifers.	Management Action Plan will be developed. The action plan will cover the following: 2.1.1. Actions for improving groundwater monitoring using ground and remote sensing based technologies.			
		Outcome 3	2.1.2 A suite of technical guides and manuals that support conjunctive use groundwater and surface water resources.			
		NBI's subsidiary action programs (Eastern Nile and Nile Equatorial Lakes sub-basin) will be strengthened through integration of groundwater aspects for selected sub basins.	2.1.3 Recommended institutional mechanisms for sustainable management and utilization of the groundwater resource.			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 3: Targeted pilot projects to explore conjunctive use of surface and groundwaters, and links to biodiversity conservation and climate change adaptation	Technical Assistance	Outcome 4	Output 4.1 Up to 5 pilots illustrating appropriate innovative techniques for sustainable conjunctive use of groundwater and surface water resources. The pilots shall include the following:	GET	2,557,646	12,072,452
		Broad dissemination of the results from two pilot actions lead to scaled activities by ENSAP and NELSAP.	Outcome 5			
		Pilots lead to overall enhanced conservation and efficient use of water resources and promote water efficient land use activities, strengthening livelihoods status;	<p>a) Managed Aquifer Recharge (MAR) interventions: the MAR will be piloted in two sub-basins of the Nile. At least one pilot will be integrated with improving water supply for a small – medium sized town dependent on groundwater.</p> <p>b) Pilot Water Funds for sustainable watershed services</p>			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 4: Further strengthening capacity to address groundwater issues at the national and regional levels	Technical Assistance	Outcome 6	Output 6.1 Relevant national agencies, academics and NBI/LVBC representatives receive training on: • Ground water assessment using ground based and remote sensing data sources	GET	426,274	2,051,587
		Outcome 7 Regional and national decision makers have increased their understanding on importance of groundwater and capacitated to develop and adopt recommendations emerging from the analyses related to Groundwater governance and Conjunctive management facilitating policies	• Hydrogeology and ground water recharge estimation • Ground water modelling • Aquifer mapping • Planning and implementing Managed Aquifer Recharge Output 7.1 Targeted knowledge exchange			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 5: Communication and awareness raising including Knowledge management M and E	Technical Assistance	<p>Outcome 8: Groundwater issues and conjunctive use management included in NBI communications and awareness raising activities</p> <p>Outcome 9: Lessons and experiences on conjunctive use management and the inclusion of groundwater considerations disseminated to IW (and other) projects globally.</p>	<p>Output 8.1</p> <p>Up to 5 communication and awareness raising products generated and disseminated to national stakeholders through NBI communication platforms (website, Facebook)</p> <p>Output 8.2</p> <p>A video documentary prepared by NBI to raise awareness on role of groundwater – surface water conjunctive use in integrated water resources management in selected sub-basins</p>	GET	299,394	1,577,443

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
				Sub Total (\$)	5,075,669	25,104,750
Project Management Cost (PMC)						
				GET	253,783	745,250
				Sub Total(\$)	253,783	745,250
				Total Project Cost(\$)	5,329,452	25,850,000

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount(\$)
Government	Government of Burundi	In-kind	2,000,000
Government	Government of Ethiopia	In-kind	2,000,000
Government	Government of Kenya	In-kind	2,000,000
Government	Government of Rwanda	In-kind	2,000,000
Government	Government of Sudan	In-kind	3,000,000
Government	Government of Uganda	In-kind	3,000,000
Donor Agency	GIZ BMZ EU	In-kind	8,500,000
Others	NBI	In-kind	3,000,000
GEF Agency	UNDP	In-kind	350,000
Total Co-Financing(\$)			25,850,000

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	NGI	Amount(\$)	Fee(\$)
UNDP	GET	Regional	International Waters		No	5,329,452	506,298
Total Grant Resources(\$)						5,329,452	506,298

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Amount (\$)

150,000

PPG Agency Fee (\$)

14,250

Agency	Trust Fund	Country	Focal Area	Programming of Funds	NGI	Amount(\$)	Fee(\$)
UNDP	GET	Regional	International Waters		No	150,000	14,250
Total Project Costs(\$)						150,000	14,250

Core Indicators

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	100000.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	100,000.00		

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted		
Indicator 7 Number of shared water ecosystems (fresh or marine) under new or improved cooperative management			
Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Shared water Ecosystem	Gedaref, Mount Elgon Aquifer, Kagera Aquifer		

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Count	0	3	0	0

Indicator 7.1 Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation (scale of 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Gedaref Select SWE		1		<input type="checkbox"/>
Mount Elgon Aquifer Select SWE		1		<input type="checkbox"/>
Kagera Aquifer Select SWE		1		<input type="checkbox"/>

Indicator 7.2 Level of Regional Legal Agreements and Regional management institution(s) (RMI) to support its implementation (scale of 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Gedaref Select SWE		1		<input type="checkbox"/>
Mount Elgon Aquifer Select SWE		1		<input type="checkbox"/>
Kagera Aquifer Select SWE		1		<input type="checkbox"/>

Indicator 7.3 Level of National/Local reforms and active participation of Inter-Ministerial Committees (IMC; scale 1 to 4; See Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Gedaref Select SWE		1		<input type="checkbox"/>

Shared Water Ecosystem Rating (Expected at PIF) Rating (Expected at CEO Endorsement) Rating (Achieved at MTR) Rating (Achieved at TE)

Mount Elgon Aquifer Select SWE		1		<input type="checkbox"/>
Kagera Aquifer Select SWE		1		<input type="checkbox"/>

Indicator 7.4 Level of engagement in IWLEARN through participation and delivery of key products(scale 1 to 4; see Guidance)

Shared Water Ecosystem Rating (Expected at PIF) Rating (Expected at CEO Endorsement) Rating (Achieved at MTR) Rating (Achieved at TE)

Gedaref Select SWE		1		<input type="checkbox"/>
Mount Elgon Aquifer Select SWE		1		<input type="checkbox"/>
Kagera Aquifer Select SWE		1		<input type="checkbox"/>

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female		500,000		
Male		500,000		
Total	0	1000000	0	0

PART II: Project JUSTIFICATION

1. Project Description

A.1. *Project Description*. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area[1]¹ strategies, with a brief description of expected outcomes and components of the project, 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTE, LDCF, SCCF, and [co-financing](#); 5) [global environmental benefits](#) (GEFTE) and/or [adaptation benefits](#) (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

No change in alignment has been made with respect to the project design with the original PIF. The country reports during the PPG served as source of situation analysis and confirms the problems, the root causes and the barriers.

1. The Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Background and Rationale

The interaction between groundwater and surface water systems (rivers, wetlands, lakes) has not been adequately considered in most transboundary river basin management initiatives, including the Nile basin. The most pressing driver of heightened interest around groundwater in the Nile basin is the growing imbalance between water demand and water supply. This necessitates the need to look for alternative water sources. Groundwater holds the promise of closing the gap between water supply and demand, and in buffering the effects of climate variability. The other driver of interest around groundwater is the role that groundwater plays in addressing the SDG targets for drinking water (SDG 6.1) and other water-related targets. To reach SDG 6 goals, groundwater delivered through multiple delivery mechanisms (e.g. boreholes, springs, reticulated systems, dug wells) has a vital role to play.

Groundwater use for socio-economic improvements is in a growing stage in Africa and in the Nile basin in particular. Experience elsewhere in the world (South East Asia? countries) and in some cities in Sub-Saharan Africa show that this precious resource can rapidly degrade and deplete. A UNEP report (Morris et al., 2011) demonstrates that groundwater storage that provides the ultimate resources buffer is threatened with a double jeopardy - depletion and degradation. The pressure is already felt in the numerous small aquifers in the upper Nile riparian countries.

Reliance on groundwater is rapidly increasing. This is partly attributed to climate change, high rainfall variability, and land use/land cover changes leading to declining amount of surface water in different areas. Subsequently, this has forced people to turn to groundwater sources as an alternative to support their livelihoods. Due to climate change and variability, many of the perennial rivers are now becoming seasonal, some lakes are shrinking from their original dimensions and there is increasing dependency on groundwater resources in all the aquifer areas under consideration.

At the basin and national level, each of the Nile basin countries regard groundwater as an insufficiently understood asset that can contribute to climate resilience. The importance is reflected in the significant populations that are dependent on groundwater in many parts of the basin.

There is ample evidence that groundwaters in the Nile basin are under threat from unsustainable exploitation; climate change (affecting aquifer water levels, recharge and changes in groundwater regimes), and pollution (urban pollution and issues associated with high fluorides or salinization). These in turn are impacting water availability, causing changes in quantity and quality of groundwater-dependent ecosystems, affecting groundwater -surface water interaction. The threats on transboundary aquifers are more severe because of lack of common groundwater governance and management mechanisms.

This project aims to overcome the different barriers limiting effective utilization and protection of shared aquifers in the upper riparian countries of the Nile. Unlike the downstream end of the Nile, which holds aquifers of continental size, the upper riparian countries of the Nile are dotted by small but numerous aquifers of enormous local, regional and basin-wide socio-economic significance. Many recent studies demonstrate that groundwater availability (or depletion of it) in the region, has a strong bearing on poverty, migration, conflict, school attendance, and human health. Three aquifer areas have been chosen for the current intervention (figure 1), namely the Kagera aquifer shared among Uganda, Tanzania, Rwanda and Burundi; the Mt Elgon aquifer shared between Uganda and Kenya; and the Gedaref-Adigrat aquifer shared between Sudan and Ethiopia. The aquifers are located in diverse ecological zones. The Gedaref-Adigrat aquifers represent arid semi-arid environment with pastoral and agro-pastoral landscapes. The Mt Elgon aquifer represent humid highlands where principal water use is for ecosystem services such as for wildlife watering and as source of drinking water for rapidly growing population. The Kagera aquifer represent a typical African basement aquifer where the shallow groundwaters support drinking water sources and complex ecosystem niches.

During the Project Preparation Stage (PPG) detailed account of the situation analysis of the aquifers have been conducted by team of national consultants and a gender expert. The consultants produced seven national reports for the seven countries and one gender analysis report. The situation in the aquifers described in the national reports substantiates the various barriers and drivers identified during the Project Identification Stage (PIF).

Prevailing groundwater management issues and threats/problems to be addressed

Notable problems are depletion of the groundwater resources, degradation of water quality and degradation of ecosystems dependent on surface and groundwaters. Groundwater use pattern is rapidly changing from non-commercial use (drinking water for people and cattle) a few decades ago to use of groundwater for commercial purposes (mining, fish ponds, industries etc). These observations are remarkable in all the aquifer areas (mainly in the Kagera and Gadaref-Adigrat aquifer systems). The following list enumerates groundwater management issues identified for the aquifers under consideration

- Lack of harmonized monitoring systems
- Lack of harmonized working groundwater database
- Lack of knowledge of the aquifer including its extent, sustainable yield, and trends
- Salinization owing to increase in evaporation and water logging
- Vulnerability to extensive abstraction owing to small storage capacity of basement aquifers
- Degradation of groundwater dependent ecosystems (wetlands and lakes)
- Microbial contamination of drinking water sources
- Poor water quality as the result of contamination by Uranium
- Demand (from non-conventional water use sectors- e.g. mining, irrigation) rapidly catching up with available renewable groundwater resource, threatening water availability
- Low degree of natural recharge owing to low rainfall
- Conflict over scarce water sources

- Unsafe sources (unprotected hand dug wells, river bed excavations, haffirs) being used as widespread source of domestic water
- Long queues for water are a permanent feature during dry season in the drier lowland areas and conflicts over existing water resources are common.

Root Causes

Detailed root causes analysis will be done for each aquifer during the shared aquifer diagnostic analysis (SADA) undertakings under component 1 of the current project. Presumably, the root causes (other than those related to natural/climate change causes) are linked to lack of knowledge/understanding on aquifers and their extent (including the availability and inter-connection between groundwater bodies or between groundwaters and surface waters); poor or non-existing policies relating to groundwaters (and the differences/incompatibility of policies between countries); poor management practices that allow pollution (domestic, agriculture and industrial) or overexploitation to occur with inadequate enforcement controls to prevent it, and; inadequate or insufficient monitoring systems for both surface water and groundwater (quantity and quality). These causes are made worse by an overall lack of infrastructure that would reduce the impact of wastewaters. Addressing these root causes will improve resilience to hydrological variability by improving (ideally, optimizing) the balance between surface and groundwater use. Lack of a governance regime for groundwater resources is a further impediment to a sustainable and cooperative management and utilization of transboundary aquifers. The Nile Basin Initiative, the only regional platform that brings together the Nile riparian states, has identified groundwater as a major water security issue in its 10 years strategy (2017-2027) and is starting the integration of groundwater issues into its largely surface water focussed programs. As the first project focusing on groundwater, the focus of the project is on selected aquifers and sub-basins.

Barriers to be addressed

Apart from the inadequacy of financial resources available to address the root causes, significant barriers include: policy differences between countries or different administrative jurisdictions in the same aquifer system; lack of appropriate policies, legislation and management institutions; lack of capacity; low public awareness; overall lack of knowledge on aquifer systems and their interaction including with surface waters. Thus, the main drivers for such water management reform at both the national and sub-basin levels include (i) the need to meet supply/demand imbalances for the future; (ii) water quality deterioration and associated health and environmental risks; and (iii) weak service delivery, reliability, and transparency and associated quantity and quality measurements along with financial sustainability and cost recovery issues.

The shared aquifers included in the project were selected in consultation with the Nile Technical Advisory Committee (Nile-TAC). The proposed project is designed to reduce or minimize many of these barriers, addressing the root causes of the overall environmental problems, by increasing knowledge, awareness and management capacity of groundwaters (and the conjunctive management of surface and groundwaters). For enhancing the project impact on the ground, the project interventions will focus on the three selected shared aquifers in the Nile Basin rather than stretch over the entire Nile Basin. Based on the results of the project, future/follow up projects will be designed with basin-wide coverage. Further, to enhance effectiveness of project impact, it is critical that groundwater issues are not dealt with in isolation from surface water management issues in the sub-basins covered by the project. Therefore, the Nile Basin Initiative (NBI) will be the main execution agency for the project to enable mainstreaming of groundwater issues into the deliberations on surface water. However, given the complexity of addressing transboundary water resources issues in the Nile Basin, as a first step, the project shall focus on studies and pilot schemes that are of Technical Assistance nature in the selected aquifers.

The long-term solution of the project is to achieve sustainable development, ecological sustainability and water security. Details of the barrier analysis can be found in the ProDoC.

2. Baseline Scenario

No Change has been detected with respect of the Baseline situation described in the PIF. The baseline situation can be summarized as follows

Investment in groundwater exploration, development and management is gaining traction in the Nile Basin countries. Some basic knowledge on groundwater resources is available in the countries but the knowledge has not been systematized in the context of basin water resources management and in the context of transboundary aquifer management. Multiple evidences show depleting groundwaters levels, deterioration in water quality, and degradation of groundwater dependent ecosystems threatening the full benefit of groundwater use for livelihood improvement. There is a need to develop and enhance capacity to assess and protect the ecosystems dependent on the water resources of the aquifer, in particular to mitigate the potential impacts of climate change and variability within the region. In addition, the NBI needs further strengthening to develop and implement effective management actions (including a regular monitoring programme). Further work through pilot demonstration activities will assist the seven governments in collaborative actions that will both strengthen their capacity on conjunctive management and improve the livelihoods of the local population dependent on the resources of the selected areas. Without further support, the benefit of groundwater-surface water conjunctive use of the transboundary aquifers cannot be attained.

3. The proposed alternative Scenario

The baseline activities (that is ongoing interventions, national and regional projects) fall short of comprehensively exploiting the full benefit of conjunctive use and management of surface and groundwaters resources as well as fall short of protecting the aquifers. The barriers to these are lack of appreciable knowledge of the state of the aquifers and their connections to the surface waters, lack of management strategies, and lack of awareness to fully appreciate the benefit of conjunctive use and management of surface and groundwaters at different tiers of the stakeholders. Through its knowledge creation component, designing actions plans for interventions and pilot demonstration activities, the project envisages to strengthen the governments' capacity on conjunctive management and improve the livelihoods of the local population dependent on the resources of the shared aquifers.

The objective of the project is to strengthen the knowledge base, capacity and cross-border institutional mechanisms for sustainable use and management of selected transboundary aquifers in the Nile Equatorial Lakes and Eastern Nile sub-basins. The project targets to overcome the barriers that have been identified (see section 1 for details). In line with this objective and the context given in section II, the project has been subdivided into five components and nine outcomes.

Component 1: Furthering knowledge and understanding about availability of groundwater resources in the selected aquifers underlying watersheds in the sub-basins of the Eastern Nile and the Nile Equatorial Lakes.

Outcome 1: Improved understanding and knowledge of groundwater and how it interacts with surface water and the types of pressures on them, building upon existing information

Component 2: Development of action plans on groundwater resources governance, management, and protection for inclusion in national, sub-basin frameworks: – also including consideration of surface water/groundwater resources conjunctive use

Outcome 2: Increased convergence of national approaches, policies and governance mechanisms for protection and sustainable use of shared aquifers.

Outcome 3: NBI's subsidiary action programs (Eastern Nile and Nile Equatorial Lakes sub-basin) will be strengthened through integration of groundwater aspects for selected sub-basins

Component 3: Targeted pilot projects to explore conjunctive use of surface and ground waters, and links to biodiversity conservation and climate change adaptation

Outcome 4: Broad dissemination of the results from two pilot actions lead to scaled activities by ENSAP and NELSAP.

Outcome 5: Pilots lead to overall enhanced conservation and efficient use of water resources and promote water-efficient land use activities, strengthening livelihoods status

Component 4: Further strengthening capacity to address groundwater issues at the national and regional levels

Outcome 6: Technicians, academics, and senior planners at national, sub-regional and regional levels capacitated on key requisite techniques on groundwater monitoring and sustainable management

Outcome 7: Regional and national decision makers have increased their understanding on importance of groundwater and capacitated to develop and adopt recommendations emerging from the analyses related to groundwater governance and conjunctive management facilitating policies

Component 5: Communications and awareness raising.

Outcome 8: Groundwater issues and conjunctive use management included in NBI communications and awareness raising activities

Outcome 9: Lessons and experiences on conjunctive use management and the inclusion of groundwater considerations disseminated to IW (and other) projects globally.

4. Incremental/Additional cost reasoning

The baseline scenario is costly to the countries. Under the business as usual scenario a number of challenges/problems leading to various environmental costs are happening, including: loss of vital ecosystems, depletion of water sources, water quality degradation, and widening gap between water supply and demand. These in turn are leading to social and economic costs to the countries. The primary cost related to the environmental degradation is perpetuation of poverty. Various research undertaking in the region shows water has a strong link to human health, school attendance, migration, conflict and income. The alternative scenario proposed under this project will reduce these costs by specifically targeting the various barriers which hinder the countries to take actions that can lead to the stated objective of the current project.

5. Global Environmental Benefits

The project has a wider range of Global Environmental Benefits (GEBs), including:

Reducing demand through the application of measures to use the water resources of the shared aquifers more efficiently

Reducing pressure on other national and transboundary water resources where available (e.g. Nile River)

Flow of data including on water levels, abstraction rates and water quality

Assessment of the fragile ecosystems

Sharing experience on common issues through carefully selected pilot projects

Training of personnel from the countries in different fields

Awareness raising among the relevant institutions and the public at large on the environmental issues and the threats of climate change on the ecosystem and biodiversity

Improving the institutional and legal system to achieve a rational management of the shared groundwater resources

Introduction of suitable agricultural practices and water conservation techniques

Environmental protection particularly in groundwater recharge zones

The benefits from this project will also contribute to other multi-lateral environmental agreements including the Ramsar Convention, Agreement on the Conservation of African-Eurasian Migratory Water Birds, etc. dependent on the water resources available at wetlands fed by the groundwaters.

6. Innovativeness, sustainability and potential for scaling up

The project is building on the work undertaken by the IAEA-UNDP-GEF-UNESCO MSP that prepared groundwater knowledge base in the Nile Basin Countries. As key actions to facilitate the sustainability and scaling-up, the project will encourage the countries to (where needed):

Update and reform policies, legislation and institutions to enhance the national and regional governance of the shared aquifers;

Gather high quality groundwater data for production of groundwater resources maps and groundwater models

Strengthen governance and technical capacity to implement any necessary reforms to policy etc.

Strengthen capacity to manage the water and ecosystem resources within the aquifer areas to further strengthen the involvement of women at all levels of governance, management and activities within the region

Engage in gathering documentation and provision of information and data nationally and to the NBI by countries in accordance with the regional agreement

Strengthen the NBI at the regional level and communities, private sector (including farmers, pastoralists, international growers, bottlers, etc.) at more local levels on the importance of the transboundary aquifer resources and ecosystems dependent on the water

Improve the understanding of the transboundary aquifer resources and ecosystem and the potential impacts of climate change and variability

Pilot improved approaches to water management across the transboundary aquifer basin, to demonstrate effective means to reduce water demand and pollution, and sustain fragile ecosystems that benefit local communities;

At the NBI level, the project's capacity building activities and exchange programs with other regional water commissions will assist the NBI in analyzing the transboundary groundwater aquifer data producing technical reports and maps, updating the regional model and evaluating the refined local models. More fundamentally, the project will assist with reviews of the transboundary aquifer governance structures and operation to strengthen the regional and national offices of the NBI. The project will work with the ministries for water and environment to facilitate their understanding of the aquifer resources. The work to develop appropriate sustainability plans will be integral to the project's exit strategy and all activities will closely consider the sustainability of interventions as part of the project inception phase.

At the national level, all the participating member state countries will delegate a project focal person and project focal institutions for the whole project or for the project components. The project focal institution and focal person shall a) serve as liaison between the project secretariat based at NBI and national bodies and national stakeholders as necessary, b) reach out to the potential stakeholders and partners to encourage participation and contribution to the project, c) ensure the member state country contribute to the project undertakings (data sharing, facilitation of meetings workshop, trainings, upscaling etc.) and d) Identify and liaise with ongoing national projects so as to create synergy, sharing information and build partnerships.

The end of project sustainability shall be guaranteed through the close partnership that will be created with the national focal institutions as well as through the capacity built under the project activities.

[1] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving..

A.2. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

NA

A.3. Stakeholders

Please provide the Stakeholder Engagement Plan or equivalent assessment.

(Annex E of ProDoc)

The stakeholders will be engaged through the engagement plan proposed under the project. The project will work through key national, regional and international stakeholders/partners. At the national level, the project will work closely with key stakeholders/partners from government authorities and institutions through the co-financing provided by the seven countries. The project will also work with all GEF and Non GEF projects in the region having similar scope so as to share experience, reduce duplication of efforts and reduce delivery of conflicting policy messages/recommendations. The project will also work closely as a partner with the GEF IW: LEARN to help share the lessons and experiences of the project to the global IW community.

At the project component level, the stakeholders at local levels (e.g. pastoralists, farmers, water user associations, national parks, etc) will actively participate in all components of the project (as providers of key local level social and environmental information as well as beneficiaries of the various workshops). The local level stakeholder engagement shall be guaranteed through the stakeholder coordination role that shall be played by the focal government institutions. The participation of these stakeholders is guaranteed through their participation in various workshops and trainings that will take place during the implementation of the project components. The budget breakdown accounts for the financial needs of these stakeholder involvement at project activity level. The project is designed in such a way that, the local and national level stakeholders shall serve both as a primary source of information (eg for the SADA and the Pilot action) as well as primary recipient of knowledge to be created under the project. The timing of the engagement of the stakeholders follows the project activities under each component.

Documents

Title

Submitted

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body;

Executor or co-executor;

Other (Please explain)

A.4. Gender Equality and Women's Empowerment

Please briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

A gender specialist has been recruited during the PPG phase to ensure that all aspects of the project consider the gender equality and women empowerment. The gender expert has worked with the National Consultants and the Government Stakeholders to ensure that gender mainstreaming aspects are given highest consideration in the various components of the project. A detailed gender situation analysis report has been prepared as the result of this engagement and has been used to prepare the gender action plan.

There is a better understanding and more awareness of the gender issues involved in water management and a range of initiatives have been introduced to improve the situation in the participating countries. Many countries recognized the benefits of involving women in all aspects of water use and thus most government guidelines, project designs, programmes and policies now address gender concerns. However, political and cultural impediments that are still difficult to eradicate and that require reasonable resources and strong political will have often been lacking. Hence implementation gaps have been explicit in the policies and programmes intended to improve access, use and management of water resources, which are the backbones of conjunctive ground water resource management.

The following gaps are identified to guide the development of the gender strategy for the proposed project

Limited participation of women in knowledge development and employability

Poor knowledge dissemination and communication channels on water-related issues and innovations

Weak national gender machineries and institutional mechanisms

Poor integration and implementation of gender in relevant policies

Gender inequality in public finance management

Inadequate gender dis-aggregated data and gender statistics to guide programme design, monitoring and evaluation

Weak monitoring and evaluation framework

Limited engagement of key stakeholders, especially the women's movement

Poor connection of water rights to land governance

Documents

Title

Submitted

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

If yes, please upload document or equivalent here

If possible, indicate in which results area(s) the project is expected to contribute to gender equality:

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

A.5. Risks

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being, achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.

Potential risk factor	Rating (L/M/H)	Risk mitigation strategy
Political stability	H	As with the previous UNDP/IAEA GEF project, the risks of instability in parts of the basin remain high. The project will monitor the situation and collect data/execute activities when UNDSS advise. The exact location of the pilot projects will be selected to minimize security risks and transport issues associate with remote locations.

Potential risk factor	Rating (L/M/H)	Risk_mitigation_strategy
Lack of sufficient Information and data	L	<p>The project will work with all partners (countries, NBI, agencies, etc.) to ensure adequate data is generated and the project will highlight where additional information is needed.</p> <p>Modern remote sensing methodology (e.g. Remote sensing hydrology, remote monitoring) will be deployed to supplement the methodologies that require primary field data</p> <p>All available literature, local regional and international data repositories; published and unpublished reports and grey literature will be consulted to maximize the available data</p>
Willingness to share information between countries	L/M	<p>As there is lack of harmonized database system/information base system the willingness for sharing data may be limited. The geodata base that will be developed under the current project will aim to prepare data sharing protocol on groundwater to strengthen the existing data sharing procedure.</p> <p>Existing mechanisms of data sharing and agreements between the Nile Basin Cooperation Agreements will be evoked</p>
Engagement of national private sector stakeholders	M	Use the stakeholder engagement plan and awareness raising components to engage the stakeholder. Demonstrate the benefit of the project outcomes to the various stakeholders as much as possible
Climate Change	M	<p>Drought or flood hazards that may occur during the project may affect the communities residing in the aquifer areas, causing migration, displacement and conflict.</p> <p>The project will work closely with the countries on potential climate change scenarios and will work to help countries best adapt to hazards by utilizing limited resources more effectively (e.g. introducing improved irrigation methods)</p> <p>Project will integrate climate change aspect in Shared Aquifer Diagnostic Analysis to capture diagnosis under various extreme climate scenarios</p>
Lack of clear framework for ownership, construction, management and operation of transboundary infrastructure projects that will likely be the recommendation of the project	L	NBI will form working groups that will comprise experts in groundwater issues and senior officials to represent their respective countries and continuously engage in project execution.
Failure to up-scale successful results from the project.	L	The project is planned to be implemented through NBI's structure with NBI as main executing agency. This will help in mainstreaming project results into NBI's activities thereby enhancing the likelihood of scaling up the project results through the various NBI programs. Participation on Nile TAC in project oversight will ensure that the findings are taken up and incorporated in national and regional (transboundary) discourse, policies and development programs.

Potential risk factor	Rating (L/M/H)	Risk_mitigation_strategy
Failure to agree aquifer wide groundwater management approaches	L	NBI will form working groups that will comprise experts in groundwater issues and senior officials to represent their respective countries and continuously engage in project execution.

A.6. Institutional Arrangement and Coordination

Describe the Institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

The project is going to be operationalized by and at the Nile Basin Initiative, based in Entebbe, Uganda. The NBI institutional framework consists of three key institutions: The Nile Council of Ministers (Nile COM) of Water Affairs provides policy guidance and makes decisions. The NBI Technical Advisory Committee (Nile TAC), established in 1998 is made up of senior civil servants and provides technical advice and assistance to the Council of Ministers. The committee is made up of one representative from each riparian country and one alternate. It meets two to three times a year. The NBI Secretariat (Nile SEC), established in 1999 provides administrative support to the Council of Ministers and the Technical Advisory Committee. It is based in Entebbe, Uganda, headed by an Executive Director. Two subsidiary programs are managed by the Eastern Nile Regional Technical Office (ENTRO), which is based in Addis Ababa, and the NELSAP Coordinating Unit (NELSAP-CU), which is based in Kigali, Rwanda.

Overview of the Project will be guaranteed among others by Nile-COM and Nile-TAC. Nile-TAC will function as the Chair of Project Steering Committee (PSC), with the overall mandate of providing strategic guidance to the project, and of ensuring a basin wide perspective. The PSC will take into consideration the decisions of other existing NBI governance bodies and will refer any unresolved issues to Nile-COM. Terms of reference of PSC are approved by Nile-TAC. The coordination of the project activities (workshops, trainings, piloting, etc) within the countries will be done in close collaboration with the National Focal Institution. The National Focal Institution shall designate at least one national focal person for the project. The role of the national focal person is to serve as focal person for all project activities within the countries. The functions include a) Serve as liaison between the Project secretariat based at NBI and national bodies and national stakeholders as necessary, b) Reach out to the potential stakeholders and partners to encourage participation and contribution to the project, c) Ensures the member state country contribute to the project undertakings (data sharing, facilitation of meetings workshop, trainings etc.), d) Identify and liaise with ongoing national projects so as to create synergy, sharing information and build partnerships.

Agreement has been reached during the PPG stage that the following institutions (table 4) in each country serve as National Focal Institution in each country. Representatives of the subsidiary programs will make part of the working group.

Country	Name of National Focal Institution
Burundi	The Geographic Institute of Burundi (IGEBU) under Ministry of Environment and Livestock
Ethiopia	Groundwater Directorate, Basin Development Authority, Ministry of Water, Irrigation & Electricity
Kenya	Transboundary Waters Department of the Ministry of Water and Sanitation

Rwanda	Rwanda Water and Forestry Authority under Ministry of Environment
Sudan	Water Resources Technical Organ (WRTO) at the Ministry of Water, Irrigation and Electricity
Tanzania	Directorate of Water Resources under Ministry of Water
Uganda	Directorate of Water Resources Management of the Ministry of Water and environment

Nile-SEC will have responsibility for coordinating all project activities, and for all reporting on the project. Specifically, Nile-SEC will:

- Coordinate project implementation;
- Coordinate and oversee overall fund flow and disbursements;
- Ensure information sharing;
- Conduct monitoring and evaluation;
- Define and supervise common NBI procedures for financial management and procurement, human resources management, and information management and reporting.

NBI will appoint the Project manager and setup PMU for the project who will take the primary responsibility for implementation of project activities including coordination of activities with ENTRO, NELSAP, project partners, stakeholders as well as the participating NBI Countries under the guidance of the Deputy Executive Director of NBI.

Additional Information not well elaborated at PIF Stage:

A.7. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptaion benefits (LDCF/SCCF)?

The poverty reduction contribution of the project is not elaborated well in the PIF stage. This project aims to overcome the different barriers limiting effective utilization and protection of shared aquifers in the upper riparian countries of the Nile. Unlike the downstream end of the Nile, which holds aquifers of continental size, the upper riparian countries of the Nile are dotted by small but numerous aquifers of enormous local, regional and basin-wide socio-economic significance. Many recent studies demonstrate that groundwater availability (or depletion of it) in the region, has a strong bearing on poverty, migration, conflict, school attendance, and human health. Past UNDP/GEF and other financed interventions focus on large continental scale aquifers. Regardless of the fact that the aquifers under current investigation are not as big in size as the other aquifers in the Nile basin or elsewhere, it is within these aquifer areas that most of water related poverty problems prevail, including: conflict over scarce water sources, rapid loss of ecosystems that depend on the groundwaters, hunger and migrations, and poor water supply and sanitation coverage. The project will increase participating countries capacity to achieve the SDG targets. Countries will be better equipped to achieve and report progress towards SDGs, in particular SDGs 1 (poverty), 2 (hunger food and nutrition security), 5 (gender), 6 (water and sanitation), 8 (decent work), 13 (climate change) and 15 (sustainable terrestrial ecosystems). The project intervention will take strong account of climate change adaptation needs

through its pilot interventions, thereby contributing to SDG 13. The project aims to increase water access and availability to marginalized communities through inclusive and equitable social and economic development thereby contributing to poverty alleviation. The project aims contribute towards SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture) through its pilot intervention in MAR and promoting sustainable land management.

A.8. Knowledge Management

Elaborate on the Knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

Communication and awareness raising (KM) is one of the principal components of the project. The KM activities envisaged among others a) Up to 5 communication and awareness raising products generated and disseminated to national stakeholders through NBI communication platforms (website, Facebook). The communication products will be used to raise awareness and understanding on role of groundwater management and conjunctive use of surface – groundwater resources. Further, role of groundwater in sustaining ecosystems will be covered by the communication products complementing other activities of NBI with respect to watershed management and transboundary wetlands; b) preparation of video documentary by NBI to raise awareness on role of groundwater – surface water conjunctive use in integrated water resources management in selected sub-basins and c) Production of information leaflets and guidance on groundwater issues prepared for different groups of stakeholders. Other dissemination outlets include creation of dedicated website, use of virtual media (twitter, Facebook, etc.) to raise awareness; use of 1% of overall GEF budget used to support project participation in GEF IW: LEARN activities; use of other platforms such as Groundwater /water network, IW: LEARN, CoP. There is activity for active presence at Development Partners meetings and at Scientific conference to disseminate results. All these activities are budget for.

B. Description of the consistency of the project with:

B.1. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

At the regional level, the project is consistent with NBI's Basin Wide Programme 2017-2022 Strategic Direction 1.4 of promoting conjunctive use of groundwater and surface water resources to address water security challenges in the Nile Basin. The project is consistent with, and will contribute to, the NBI's ENSAP and NELSAP investment programmes. At

the national level, all selected countries have actively contributed to the formulation of the outputs/outcomes and have actively contributed to the preparation of the PIF and ProDoc, thereby ensuring countries' needs are expressed adequately. Specific priorities identified by the countries both during the PIF and the PPG stage include:

In Ethiopia groundwater is included in the next five-year development strategic plan (GTP III) with the expansion of groundwater irrigation and the improvement (through 2.4. billion USD investments) to improve drinking water supplies largely dependent on groundwater sources. Furthermore, Ethiopia's new Climate Resilient WASH program (2017) intends to tap into deep regional aquifers to reach marginalized communities (e.g. pastoralist communities) in arid environments.

In Kenya, the project is supportive of the flagship Vision 2030 and the 2016 Water Act, EMCA 1999 (recently updated). The project will also support economic development through the identification and sustainable use of water resources and improve the knowledge and understanding of shared aquifers.

In Tanzania, the Water Resources Management Act 2009 requires the classification of water resources considering both surface and groundwater sources. Furthermore, The National Five-Year Development Plan 2016/17 – 2020/21, "Nurturing Industrialization for Economic Transformation and Human Development" plans to increase groundwater development.

In Sudan, the project is supportive of the Sudan Water Policy and Agriculture and Food Security Plan

In Uganda, the Water Policy, Water Act and Water Resources Regulations have clear provisions for the management of surface and groundwaters.

In Rwanda, the National Water Resources Master Plan (2015-2040) incorporates groundwater aspect in the document. The Annual Water Status Report 2016-2017 recognizes that knowledge regarding Rwanda's groundwater resources is still very limited. Rwanda intends to ensure a better understanding of the trends in groundwater use and availability for the future Annual Water Status Reports through investigations supported by installation of groundwater monitoring infrastructures, inventorying groundwater wells and geophysical investigations of groundwater resources. These measures will ensure a better understanding of the trends in groundwater use and availability for the future Annual Water Status Reports.

In Burundi, the project is supportive of the various regulations and practices such as a) National guide for determining perimeters for the protection of water catchments intended for human consumption, August 2014, b) the decree No 100/185- Procedures for determining and setting up perimeters for the protection of water catchments intended for human consumption and c) Ministerial Order No. 770/1590 which lays down the technical rules and requirements for the issue of the authorization of drilling, well digging and sounding exercises for the purpose of research, abstraction or exploitation of groundwater.

C. Describe The Budgeted M & E Plan:

The following M and E activities are planned and budgeted for

1. Inception workshop within two months of the project commencement
2. Monitoring of indicators in project results framework (NBI) to be conducted by PMU annually
3. NIM Audit as per UNDP audit policies by UNDP country office to be conducted annually
4. Lessons learned and knowledge generation activities to be conducted by PMU annually
5. Project Board meetings/Project steering committee meetings to be conducted annually
6. Mid-term GEF Tracking Tool updating by the mid term
7. Independent Mid-term Review (MTR) and management response by the Mid term
8. Terminal GEF Tracking Tool to be updated before the terminal evaluation takes place
9. Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response at least three months before the operational closure of the project.

PART III: Certification by GEF partner agency(ies)

A. GEF Agency(ies) certification

GEF Agency Coordinator	Date	Project Contact Person	Telephone	Email
Pradeep Kurukulasuriya, UNDP-GEF Executive Coordinator	5/30/2019	Vladimir Mamaev, Regional Technical Advisor		vladimir.mamaev@undp.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).

Page 50 of ProDoc.

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).

STAP Comment	NBI Response
1. STAP appreciates the preparation of this comprehensive project to enhance understanding of groundwater and surface water interactions and conjunctive management in key pilot areas within the Nile Basin.	Noted
2. A key feature of the present proposal is the excellent collation of experience from many GEF and non-GEF projects when considering the design of proposed interventions. There are indeed many past and current projects focused upon sustainable groundwater management. One project which could usefully be included in the list of complementary actions is the World Bank project Sustainable Groundwater Knowledge and Governance in the Sahel (GEF ID 9886); this is about shared regional interests in role of river basin organizations in groundwater governance, and development and application of diagnostic tools to deliver sustainable groundwater management. An important and promising outcome, beyond the direct achievements in the region, is improved knowledge and methods (e.g. isotope hydrology technique) for use in other aquifers and sub-basins.	Noted
3. A minor point: The PIF asserts (in the root causes section) that this is the first project focusing on groundwater in the Nile Basin, yet STAP understands that the predecessor project, described in an Annex to the PIF, was in fact the first project, the findings of which would be assumed to form the basis for the design of the present proposal. Another one: in the superb detailed presentation of Project outcomes, etc., the specification of Outcome 1 on page 19 is missing.	<p>Yes, this is the second project for the Nile Basin. However, proposed project is the first groundwater project to be executed by Nile Basin Initiative.</p> <p>The specification and detailed definition of all project components and outcomes is included in the project document.</p>

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS.

A. Provide detailed funding amount of the PPG activities financing status in the table below:

A. PPG Grant Approved at PIF: 150.000 USD			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Component A: Preparatory Technical Studies & Reviews	63,000	61,740	1,260
Component B: Formulation of the UNDP-GEF Project Document, CEO Endorsement Request, and Mandatory and Project Specific Annexes	39,000	38,220	780
Component C: Validation Workshop and Report;	48,000	37,040	960
Total	150,000	147,000	3,000

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)

ANNEX E: GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, Table G to the extent applicable to your proposed project. Progress in programming against these targets for the program will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Core Indicator 1: Terrestrial protected areas created or under improved management for conservation and sustainable use (hectares)

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

Figure at a given stage must be the sum of all figures reported under the two sub-indicators (1.1 and 1.2) for that stage.

1.1 Terrestrial protected areas newly created

Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Figure at a given stage must be the sum of all individual PAs reported in the next table, for that stage.

Name of Protected Area	WDPA ID	IUCN Category	Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Add rows as needed.

Name of Protected Area	METT Score at CEO ER	METT Score at MTR	METT Score at TE

Add rows as needed; ensure all relevant PAs are listed in both this and the previous table. Note no METT score at PIF.

1.2 Terrestrial protected areas under improved management effectiveness

Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Figure at a given stage must be the sum of all individual PAs reported in the next table, for that stage.

Name of Protected Area	WDPA ID	IUCN Category	Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Add rows as needed.

Name of Protected Area	METT Score at CEO ER	METT Score at MTR	METT Score at TE

Add rows as needed; ensure all relevant PAs are listed in both this and the previous table. Note no METT score at PIF.

Core Indicator 2: Marine protected areas created or under improved management for conservation and sustainable use (hectares)

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

Figure at a given stage must be the sum of all figures reported under the two sub-indicators (2.1 and 2.2) for that stage.

2.1 Marine protected areas newly created

Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Figure at a given stage must be the sum of all individual PAs reported in the next table, for that stage.

Name of Protected Area	WDPA ID	IUCN Category	Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Add rows as needed.

Name of Protected Area	METT Score at CEO ER	METT Score at MTR	METT Score at TE

Add rows as needed; ensure all relevant PAs are listed in both this and the previous table. Note no METT score at PIF.

2.2 Marine protected areas under improved management effectiveness

Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Figure at a given stage must be the sum of all individual PAs reported in the next table, for that stage.

Name of Protected Area	WDPA ID	IUCN Category	Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Add rows as needed.

Name of Protected Area	METT Score at CEO ER	METT Score at MTR	METT Score at TE

Add rows as needed; ensure all relevant PAs are listed in both this and the previous table. Note no METT score at PIF.

Core Indicator 3: Area of land restored (hectares)

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

Figure at a given stage must be the sum of all figures reported under the four sub-indicators (3.1, 3.2, 3.3 and 3.4) for that stage.

3.1 Area of degraded agricultural lands restored

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

3.2 Area of forest and forest land restored

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

3.3 Area of natural grass and shrublands restored

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

3.4 Area of wetlands (including estuaries and mangroves) restored

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

Core Indicator 4: Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

Figure at a given stage must be the sum of all figures reported under the four sub-indicators (4.1, 4.2, 4.3 and 4.4) for that stage.

4.1 Area of landscapes under improved management to benefit biodiversity (qualitative assessment, noncertified)

Ha (expected at PIF)	Qualitative description at PIF	Ha (expected at CEO ER)	Qualitative description at CEO ER	Ha (achieved at MTR)	Qualitative description at MTR	Ha (achieved at TE)	Qualitative description at TE

Add rows as needed.

4.2 Area of landscapes that meet national or international third-party certification and that incorporates biodiversity considerations

Ha (expected at PIF)	Type of Certification at PIF	Ha (expected at CEO ER)	Type of Certification at CEO ER	Ha (achieved at MTR)	Type of Certification at MTR	Ha (achieved at TE)	Type of Certification at TE

Add rows as needed.

+ 4.3 Area of landscapes under sustainable land management in production systems

Ha (expected at PIF)	Description of Management Practices at PIF	Ha (expected at CEO ER)	Description of Management Practices at CEO ER	Ha (achieved at MTR)	Description of Management Practices at MTR	Ha (achieved at TE)	Description of Management Practices at TE
		100,000					

Add rows as needed.

4.4 Area of High Conservation Value forest loss avoided

Total Ha (expected at PIF)	Total Ha (expected at CEO ER)	Total Ha (achieved at MTR)	Total Ha (achieved at TE)

Figure at a given stage must be the sum of all individual PAs reported in the next table, for that stage. Prepare and upload file that justifies the HCVF.

Name of HCVF	Ha (expected at PIF)	Counterfactual at PIF	Ha (expected at CEO ER)	Counterfactual at CEO ER	Ha (achieved at MTR)	Ha (achieved at TE)

Add rows as needed.

Evidence required in Portal: "Please upload document(s) that justifies the HCVF"

Core Indicator 5: Area of marine habitat under improved practices to benefit biodiversity (hectares; excluding protected areas)

Ha (expected at PIF)	Ha (expected at CEO ER)	Ha (achieved at MTR)	Ha (achieved at TE)

5.1 Number of fisheries that meet national or international third-party certification that incorporates biodiversity considerations

Number of fisheries (expected at PIF)	Number of fisheries (expected at CEO ER)	Number of fisheries (achieved at MTR)	Number of fisheries (achieved at TE)

Name of Fishery	Total Ha (expected at PIF)	Type of Certification at PIF	Total Ha (expected at CEO ER)	Type of Certification at CEO ER	Total Ha (achieved at MTR)	Type of Certification at MTR	Total Ha (achieved at TE)	Type of Certification at TE

Add rows as needed.

5.2 Number of Large Marine Ecosystems with reduced pollution and hypoxia

Number of LMEs (expected at PIF)	Number of LMEs (expected at CEO ER)	Number of LMEs (achieved at MTR)	Number of LMEs (achieved at TE)

Figure at a given stage must be the total count of the LMEs listed in the next table.

Name of LME	Type of Pollution (expected at PIF)	Extent of Pollution (expected at PIF)	Type of Pollution (expected at CEO ER)	Extent of Pollution (expected at CEO ER)	Type of Pollution (achieved at MTR)	Extent of Pollution (achieved at MTR)	Type of Pollution (achieved at TE)	Extent of Pollution (achieved at TE)

Add rows as needed.

Total area under improved management (in PIF and CEO ER Table F)

Million Ha (expected at PIF)	Million Ha (expected at CEO ER)

Calculate the total by summing Core Indicators 1-5. Ensure that there is no double-counting.

Core Indicator 6: Greenhouse gas emissions mitigated (metric tons of carbon dioxide equivalent)

GHG emission type	Metric tons CO ₂ -eq (expected at PIF)	Metric tons CO ₂ -eq (expected at CEO ER)	Metric tons CO ₂ -eq (expected at MTR)	Metric tons CO ₂ -eq (expected at TE)
Expected metric tons of CO ₂ -e (direct)				
Expected metric tons of CO ₂ -e (indirect)				

Figure at a given stage must be the sum of all figures reported under the first two sub-indicators (6.1 and 6.2) for that stage.

⊕ **6.1 Carbon sequestered or emissions avoided in the sector of Agriculture, Forestry and Other Land Use**

GHG emission type	Ha (expected at PIF)	Metric tons CO ₂ -eq (expected at PIF)	Ha (expected at CEO ER)	Metric tons CO ₂ -eq (expected at CEO ER)	Ha (expected at MTR)	Metric tons CO ₂ -eq (expected at MTR)	Ha (expected at TE)	Metric tons CO ₂ -eq (expected at TE)
Expected metric tons of CO ₂ -e (direct)								
Expected metric tons of CO ₂ -e (indirect)								
Anticipated year	---	[2018-2100]	---	[2018-2100]	---	[2018-2100]	---	[2018-2100]
Duration of accounting	---	[1-30]	---	[1-30]	---	[1-30]	---	[1-30]

6.2 Emissions avoided outside AFOLU (Agriculture, Forestry and Other Land Use)

GHG emission type	Metric tons CO ₂ -eq (expected at PIF)	Metric tons CO ₂ -eq (expected at CEO ER)	Metric tons CO ₂ -eq (expected at MTR)	Metric tons CO ₂ -eq (expected at TE)
Expected metric tons of CO ₂ -e (direct)				
Expected metric tons of CO ₂ -e (indirect)				

Anticipated year	[2018-2100]	[2018-2100]	[2018-2100]	[2018-2100]
Duration of accounting	[1-20]	[1-20]	[1-20]	[1-20]

6.3 Energy saved (megajoules)

Total MJ (expected at PIF)	Total MJ (expected at CEO ER)	Total MJ (achieved at MTR)	Total MJ (achieved at TE)

Figure at a given stage must be the sum of all figures reported in the next table, for that stage.

Type of Intervention	MJ (expected at PIF)	MJ (expected at CEO ER)	MJ (achieved at MTR)	MJ (achieved at TE)

Add rows as needed.

6.4 Increase in installed renewable energy capacity per technology (megawatts).

Type of Renewable Energy	Capacity (MW; expected at PIF)	Capacity (MW; expected at CEO ER)	Capacity (MW; achieved at MTR)	Capacity (MW; achieved at TE)
[biomass, geothermal, ocean, small hydro, solar photovoltaic, solar thermal, wind power, and storage]				

Add rows as needed.

Core Indicator 7: Number of shared water ecosystems (fresh or marine) under new or improved cooperative management

Number (expected at PIF)	Number (expected at CEO ER)	Number (achieved at MTR)	Number (achieved at TE)
0	0	0	3

Figure at a given stage must be the count of all water ecosystems reported under the four sub-indicators for that stage.

7.1 Level of Transboundary Diagnostic Analysis and Strategic Action Program formulation and implementation

Shared Water Ecosystem (name)	Rating (entered at PIF)	Rating (entered at CEO ER)	Rating (entered at MTR)	Rating (entered at TE)
<i>Gadaref Adigrat Shared aquifer system in the Setit Atbara river basin</i>	1 = No TDA/SAP developed	1		
<i>Mount Elgon Shared aquifer system in Lake Victoria, white Nile and Lake Turkana river basins</i>	1 = No TDA/SAP developed	1		
<i>Kagera Aquifer system in the Lake Victoria river basin</i>	1 = No TDA/SAP developed	1		

Add rows as needed, i.e. if more than one water ecosystem.

7.2 Level of regional legal agreements and regional management institution(s) to support its implementation

Shared Water Ecosystem (name)	Rating (entered at PIF)	Rating (entered at CEO ER)	Rating (entered at MTR)	Rating (entered at TE)
<i>Gadaref Adigrat Shared aquifer system in the Setit Atbara river basin</i>	1 = No regional legal agreement, or neither institutional framework nor RMI in place (specific to the aquifer basins)	1		
<i>Mount Elgon Shared aquifer system in Lake Victoria, white Nile and Lake Turkana river basins</i>	1 = No regional legal agreement, or neither institutional framework nor RMI in place (specific to the aquifer basins)	1		
<i>Kagera Aquifer system in the Lake Victoria river basin</i>	1 = No regional legal agreement, or neither institutional framework nor RMI in place (specific to the aquifer basins)	1		

Add rows as needed, i.e. if more than one water ecosystem.

7.3 Level of national/local reforms and active participation of Inter-Ministerial Committees

Shared Water Ecosystem (name)	Rating (entered at PIF)	Rating (entered at CEO ER)	Rating (entered at MTR)	Rating (entered at TE)
<i>Gadaref Adigrat Shared aquifer system in the Setit Atbara river basin</i>	1 = Neither national/local reforms nor IMCs	1		
<i>Mount Elgon Shared aquifer system in Lake Victoria, white Nile and Lake Turkana river basins</i>	1 = Neither national/local reforms nor IMCs	1		
<i>Kagera Aquifer system in the Lake Victoria river basin</i>	1 = Neither national/local reforms nor IMCs	1		

Add rows as needed, i.e. if more than one water ecosystem.

7.4 Level of engagement in IW:LEARN through participation and delivery of key products

Shared Water Ecosystem (name)	Rating (entered at PIF)	Rating (entered at CEO ER)	Rating (entered at MTR)	Rating (entered at TE)
<i>Gadaref Adigrat Shared aquifer system in the Setit Atbara river basin</i>	1 = No participation	1		
<i>Mount Elgon Shared aquifer system in Lake Victoria, white Nile and Lake Turkana river basins</i>	1 = No participation	1		
<i>Kagera Aquifer system in the Lake Victoria river basin</i>	1 = No participation	1		

Add rows as needed, i.e. if more than one water ecosystem.

Core Indicator 8: Globally over-exploited fisheries moved to more sustainable levels (metric tons)

Metric tons marine capture fisheries (expected at PIF)	Metric tons marine capture fisheries (expected at CEO ER)	Metric tons marine capture fisheries (achieved at MTR)	Metric tons marine capture fisheries (achieved at TE)

Fishery Details <i>(source for the estimate of tonnage, and the initial justification for considering the fishery to be overexploited)</i>

Core Indicator 9: Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials, and products (metric tons of toxic chemicals reduced)

Total metric tons (expected at PIF)	Total metric tons (expected at CEO ER)	Total metric tons (achieved at MTR)	Total metric tons (achieved at TE)

Figure at a given stage must be the sum of all figures reported under the first three sub-indicators (9.1, 9.2 and 9.3) for that stage.

9.1 Solid and liquid Persistent Organic Pollutants (POPs) and POPs containing materials and products removed or disposed (POPs type)

POPs type	Metric tons (expected at PIF)	Metric tons (expected at CEO ER)	Metric tons (achieved at MTR)	Metric tons (achieved at TE)
<i>[one chemical per row; note that this is not a open field in the Portal, but a restricted drop-down list]</i>				

Add rows as needed.

9.2 Quantity of mercury reduced (metric tons)

Metric tons (expected at PIF)	Metric tons (expected at CEO ER)	Metric tons (achieved at MTR)	Metric tons (achieved at TE)

9.3 Hydrochlorofluorocarbons reduced/phased out (metric tons)

Metric tons (expected at PIF)	Metric tons (expected at CEO ER)	Metric tons (achieved at MTR)	Metric tons (achieved at TE)

9.4 Number of countries with legislation and policy implemented to control chemicals and waste (use this sub-indicator if one or more of 9.1, 9.2 and 9.3 are filled in)

Number (expected at PIF)	Number (expected at CEO ER)	Number (achieved at MTR)	Number (achieved at TE)

9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing, and cities (use this sub-indicator if one or more of 9.1, 9.2 and 9.3 are filled in)

Number (expected at PIF)	Number (expected at CEO ER)	Number (achieved at MTR)	Number (achieved at TE)

9.6 Quantity of POPs/Mercury containing materials and products directly avoided

Metric tons (expected at PIF)	Metric tons (expected at CEO ER)	Metric tons (achieved at MTR)	Metric tons (achieved at TE)

NEW sub-indicator now appearing in the Portal, but missing from the GEF's Core Indicator worksheet and Results Architecture. Unclear how this is different from the headline Core Indicator 9.

Core Indicator 10: Reduction, avoidance of emissions of POPs to air from point and non-point sources (gTEO)

Grams of toxic equivalent (expected at PIF)	Grams of toxic equivalent (expected at CEO ER)	Grams of toxic equivalent (achieved at MTR)	Grams of toxic equivalent (achieved at TE)

10.1 Number of countries with legislation and policies implemented to control emissions of POPs to air

Number (expected at PIF)	Number (expected at CEO ER)	Number (achieved at MTR)	Number (achieved at TE)

10.2 Number of emission control technologies/practices implemented

Number (expected at PIF)	Number (expected at CEO ER)	Number (achieved at MTR)	Number (achieved at TE)

Core Indicator 11: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

Total number (expected at PIF)	Total number (expected at CEO ER)	Total number (achieved at MTR)	Total number (achieved at TE)
0	0	0	1 000 000

Figure at a given stage must be the sum of female and male, as in the table below for that stage.

Gender	Number (expected at PIF)	Number (expected at CEO ER)	Number (achieved at MTR)	Number (achieved at TE)
Female	0	0	0	500 000
Male	0	0	0	500 000

This indicator is mandatory for all UNDP-GEF projects.

ANNEX: Project Taxonomy Worksheet

Use this Worksheet to list down the taxonomic information required under Part1 by ticking the most relevant keywords/topics//themes that best describes the project

<input type="checkbox"/>

Submitted to GEF Secretariat Review

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