



GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

Naoko Ishii
CEO and Chairperson

January 30, 2018

Dear Council Member:

UNDP and UNEP as the Implementing Agencies for the project entitled: ***Regional (Burkina Faso, Benin, Cote d'Ivoire, Cameroon, Algeria, Guinea, Mali, Mauritania, Niger, Nigeria, Chad): Improving IWRM, Knowledge-based Management and Governance of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (NB-ITTAS)***, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP and UNEP procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by Council in March 2014 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached project document prepared by UNDP and UNEP satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.TheGEF.org. If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Naoko Ishii
Chief Executive Officer and Chairperson

Attachment: Project Document
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee



REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

For more information about GEF, visit TheGEF.org

PART I: PROJECT INFORMATION

Project Title: Improving IWRM, knowledge-based management and governance of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (NB-ITTAS)			
Country(ies):	Algeria, Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Mauritania, Niger, and Nigeria	GEF Project ID: ¹	5535
GEF Agency(ies):	UNDP, UNEP	GEF Agency Project ID:	4798 (UNDP) 00850 (UNEP)
Other Executing Partner(s):	NBA, OSS, UNIDO, UNESCO	Submission Date: Resubmission Date:	June 28, 2016 6 April 2017 22 Dec 2017 25 Jan 2018
GEF Focal Area (s):	International Waters	Project Duration(Months)	60
Name of Parent Program (if applicable): <ul style="list-style-type: none"> ➤ For SFM/REDD+ <input type="checkbox"/> ➤ For SGP <input type="checkbox"/> ➤ For PPP <input type="checkbox"/> 	n/a	Project Agency Fee (\$):	\$803,250 (UNDP) \$405,000 (UNEP)

A. FOCAL AREA STRATEGY FRAMEWORK²

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
IW-1: Catalyze multi-state cooperation to balance conflicting water uses in trans-boundary surface and groundwater basins while considering climatic variability and change	<p>Outcome 1.1: Implementation of agreed Strategic Action Programmes (SAPs) incorporates transboundary IWRM principles (including environment and groundwater) and policy/ legal/institutional reforms into national/local plans</p> <p>Outcome 1.3: Innovative solutions implemented for reduced pollution, improved water use efficiency, sustainable fisheries with rights-based management, IWRM, water supply protection in SIDS, and aquifer and catchment protection</p> <p>Outcome 1.4: Climatic variability and change as well as groundwater capacity incorporated into updated SAP to reflect adaptive management</p>	<ul style="list-style-type: none"> National and local policy and legal reforms adopted/ Types of technologies and measures implemented in local demonstrations and investments Enhanced capacity for issues of climatic variability and change and groundwater management 	GEF TF	10,956,694	918,045,158
IW-3: Support foundational	Outcome 3.1: Political commitment, shared vision, and institutional capacity demonstrated for joint,	National inter-ministry committees established; Transboundary Diagnostic	GEF TF	2,468,306	153,405,287

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.

capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of trans-boundary water systems	ecosystem-based management of waterbodies and local ICM principles. Outcome 3.3: IW portfolio capacity and performance enhanced from active learning/KM/experience sharing	Analyses & Strategic Action Programmes; local IWRM or ICM plans • Active experience/sharing/ learning practiced in the IW portfolio			
Total project costs				13,425,000	1,071,450,445

B. PROJECT FRAMEWORK

Project Objective: Improving knowledge-based management, governance and resources conservation of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (ITTAS) to support IWRM for the benefit of communities and the resilience of ecosystems						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
Component 1: Promoting conjunctive management of ground and surface waters	TA	1.1: IWRM supported by a sound understanding of ground water resources and their linkages with surface water systems	1.1.1: hydrogeological functioning of/and linkages between the Iullemeden, Taoudéni-Tanezrouft Aquifers (ITTAS), other aquifers systems and the surface waters of Niger River Basin 1.1.2: Technically Cleared TDA and SAP for the ITTAS 1.1.3: Strengthened Capacity of National and Regional Water Managers	GEF TF	2,300,000	86,357,991
Component 2: Sharing responsibilities and benefits with local communities, civil society in conserving basin resources, including groundwater	INV	2.1: Niger Basin Users Associations and National NGOs engaged in basin resources management and conservation for better control of flood/drought/pollution, reduction of pressure on land, forest and biodiversity while improving living conditions of households	2.1.1: Protection of Aquatic Habitat and Biodiversity of Threatened Wetlands 2.1.2: Restoration and Improved Management of Protected Areas 2.1.3: Restoration and Sustainable Management of Mountain Forest Ecosystems	GEF TF	4,617,678	832,425,031

			<p>2.1.4: Demonstration of Best Practices in Groundwater Management and Integrated planning of Surface and Ground water Resources</p> <p>2.1.5: Provision of Training to Basin Water User Associations</p> <p>2.1.6: Strategy for linking up and integrating community-based interventions (Outputs 2.1.1 to 2.1.5) so that livelihood-based ecosystem management becomes the basis for the sustainable management of water resources basin-wide</p>			
Component 3: Strengthening industries' environmental/social responsibility capacities	INV	3.1: systematic and integrated approach of industrial competitiveness and environmental/social responsibility through Environmentally Sound Technology (TEST) to reduce wastewater discharges and pollution loads in the Niger River introduced and demonstrated	<p>3.1.1: Niger Basin Authority's Waterbody data/inventorying processes updated; pollution control and regulatory framework improved. (Including the identification of causes and sources of pollution)</p> <p>3.1.2: Pollution hot-spots identified and customized to suit current needs; basin-wide assessment and selection processes of pilot enterprises improved and mainstreamed</p> <p>3.1.3: Transfer of Environmentally Sound Technology (TEST) approach at the enterprise level efficiently introduced</p> <p>3.1.4: TEST programme results and experiences disseminated.</p>	GEF TF	2,800,000	14,082,550
	INV	3.2: Industrial Competitiveness	3.2.1: Development of Proposals for Policy	GEF TF	200,000	1,755,360

		and Environmental/Social Responsibility for reduced wastewater discharges reinforced by legal and policy frameworks	Mainstreaming to address Pollution Reduction in Partnership with the Private Sector 3.2.2: Implementation of Harmonised Policies and Laws to address Pollution Reduction			
Component 4: Capacity building and stakeholders involvement in Niger River ecosystem based management	TA	4.1: National Policies and Institutions, Civil Society Platforms support Niger River Ecosystem based management	<p>4.1.1: Assessment of current national and regional actors in ground and surface water management and Analysis of options for integrating surface and groundwater governance mechanisms</p> <p>4.1.2: Selection and Implementation of agreed Options for Integrated Governance to strengthen Conjunctive Management</p> <p>4.1.3: Policy actions recommended at regional and national levels to further integrate conjunctive management of transboundary ground and surface waters into SDAP, National plans and strategies, through the review and update of the Strategic Action Programme for the Niger Basin and accompanying National Action Plans, leading to mainstreaming and implementation of policy reforms</p> <p>4.1.4: Formalisation of National level Support to Implementation of the Investments Plan and Development and Implementation of Dedicated Monitoring and Evaluation Tools</p>	GEF TF	2,868,036	88,300,115

			<p>4.1.5: National institutions managing transboundary terrestrial ecosystems and wetlands provided with platforms for cooperative actions and capacity building to address current emerging challenges and promote collaborative monitoring mechanisms</p> <p>4.1.6: Capacities of academic and research institutions strengthened with tools and training to provide relevant knowledge and information guiding the management of basin resources</p> <p>4.1.7: Transboundary Learning mechanisms established at community and Inter States levels; and experiences shared through website, IWLEARN, technical papers, video, technical forums, GEF IW Biennale Conference, WWF, AMCOW and other relevant forums</p>			
Subtotal					12,785,714	1,022,921,047
Project management Cost (PMC) ³				GEF TF	639,286	48,529,398
Total project costs					13,425,000	1,071,450,445

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

Please include letters confirming cofinancing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
National Government	Democratic and Popular Republic of Algeria	Cash & In-kind	45,698,123
National Government	Republic of Benin	Cash & In-kind	53,475,820

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

National Government	Burkina Faso	Cash & In-kind	157,080,000
National Government	Niger Republic	Cash & In-kind	72,097,745
National Government	Ministry of Energy & Water – Mali	Cash & In-kind	15,444,237
National Government	Federal Ministry of Water Resources – Nigeria	Cash & In-kind	1,900,000
National Government	Ministry of Water & Forests – Cote d’ Ivoire	Cash & In-kind	7,272,268
National Government	Islamic Republic of Mauritania	Cash & In-kind	285,784
National Government	Cameroun	Cash & In-kind	8,692,000
National Government	Tchad	Cash & In-kind	84,000,000
National Government	Guinea	Cash & In-kind	1,000,000
Other Multilateral Agency	NBA	Cash & In-kind	542,000,000
Other Multilateral Agency	OSS	Cash & In-kind	53,949,500
GEF Agency	UNIDO	Cash & In-kind	14,082,550
Other Multilateral Agency	UNESCO	Cash & In-kind	450,000
GEF Agency	UNDP	Cash	13,892,418
GEF Agency	UNEP	In Kind	130,000
Total Co-financing			1,071,450,445

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) ²	Total c=a+b
UNDP	GEF TF	IW	Regional	8,925,000	803,250	9,728,250
UNEP	GEF TF	IW	Regional	4,500,000	405,000	4,905,000
Total Grant Resources				13,425,000	1,208,250	14,633,250

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	2,836,200	76,433,802	79,270,002
National/Local Consultants	1,857,500	203,823,473	205,680,973

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

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁴

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.

- A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc. **NA**
- A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities. **NA**
- A.3 The GEF Agency's comparative advantage: **NA**
- A.4. The baseline project and the problem that it seeks to address: **NA**
- 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: **NA**
- 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: **NA**
- A.7. Coordination with other relevant GEF financed initiatives **NA**

CHANGES IN PROJECT OUTCOMES AND OUTPUTS

The following table summarise the changes in the outcome and outputs in the Project Document as compared to the PIF.

Outcome / Output as specified in the PIF		As specified in the Project Document	Explanatory Notes
	1.2: Transboundary threats to the ITTAS, including climate variability and change, assessed and IAS Strategic Action Programme, emphasizing conjunctive management of ground and surface waters, elaborated in an annex to the Niger Basin TDA/SAP-SDAP and technically cleared for Ministerial endorsement	1.1.2: Technically Cleared TDA and SAP for the ITTAS	The aims and content of these two outputs have not changed. It was felt that the PIF formulations provide a lot of information that does not need to be included in the output title although the ideas are captured in the various actions and activities detailed in the project document
	1.3: Training provided to strengthen capacities of national and regional water managers to process TDA/SAP and specialized aspects of aquifer assessment, modelling, planning and management;	1.1.3: Strengthened Capacity of National and Regional Water Managers	
Outcome 2. Local communities and Niger Basin Civil Society platforms engaged on basin resources management and conservation for better control of flood/drought/ pollution, reduction of pressure on land, forest and biodiversity while improving living conditions of households		Outcome 2.1: Niger Basin Users Associations and National NGOs engaged in basin resources management and conservation for better control of flood/drought/pollution, reduction of pressure on land, forest and biodiversity while improving living conditions of households	The project design is not changed. the outcome as now expressed is aimed at being slightly more specific
	2.1: Community actions established for the protection of aquatic habitat and wetlands' biodiversity threatened by overexploitation of their resources and by invasive aquatic plant species;	2.1.1: Protection of Aquatic Habitat and Biodiversity of Threatened Wetlands	As for the earlier outputs, the titles of the outputs have been made more succinct. It was felt that the new titles better represent the

	2.2: Local initiatives developed around W Niger, Chad and North Cameroon protected areas to reduce pressure on resources through participatory restoration and management of resources and biodiversity;	Output 2.1.2: Restoration and Improved Management of Protected Areas	deliverables rather than the process by which they are reached. The process is now captured under the actions and activities.
	2.3: Efficient community restoration and sustainable management of mountain forest ecosystems implemented in the Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin	2.1.3: Restoration and Sustainable Management of Mountain Forest Ecosystems	
	2.4: Pilot projects demonstrate best practices in the management of shared groundwater resources, e.g. protection of resources, demineralization of groundwater resources, integrated planning for surface and ground waters, among others	2.1.4: Demonstration of Best Practices in Groundwater Management and Integrated planning of Surface and Groundwater Resources	
	2.5: Training provided to basin user associations on (i) wetlands and ecosystems to promote the wise use of natural resources, supported by, increased their knowledge; (ii) on entrepreneurship, value chain management, processing of agro-pastoral production and rural finance and organization strategies, etc. to sustain their activities; monitoring micro-grants projects for better efficiency;	2.1.5: Provision of Training to Basin Water User Associations	The details of the contents of the training are provided under the specified actions and activities
		2.1.6: Strategy for linking up and integrating community-based interventions (Outputs 2.1.1 to 2.1.5) so that livelihood-based ecosystem management becomes the basis for the sustainable management of water resources basin-wide	This is a new output. It does not change the project design, only reinforces the concept of IWRM by linking up and integrating the approaches and lessons learned across the different project demonstration focus areas covered in 2.1.1 to 2.1.4.
		3.1.1: Niger Basin Authority's Waterbody data/inventorying processes updated; pollution control and regulatory framework improved. (including the identification of causes and sources of pollution)	No change to the project design or planning but an additional first output has been included for this important area of planning and site identification
	3.1: Assessment and selection of participating pilot enterprises;	3.1.2: Pollution hot-spots identified and customized to suit current	Output has been made more specific and clear

		needs; basin-wide assessment and selection processes of pilot enterprises improved and mainstreamed.	
	3.2: Introduction of the Transfer of Environmentally Sound Technology (TEST) approach at the enterprise level;	3.1.3: Transfer of Environmentally Sound Technology (TEST) approach at the enterprise level efficiently introduced	No significant change in the wording
	3.3: Dissemination of TEST programme results	3.1.4: TEST programme results and experiences disseminated	No significant change in the wording
	3.4 Policy mainstreaming work to address pollution reduction in partnership with private sectors at the NB-ITTAS (newly added, to be executed by NBA	Outcome 3.2: Industrial Competitiveness and Environmental/Social Responsibility for reduced wastewater discharges reinforced by legal and policy frameworks	Output 3.4 in the PIF has been transformed into an additional outcome for Component 3 since it seemed logical to separate this different area of focus
		3.2.1: Development of Proposals for Policy Mainstreaming to address Pollution Reduction in Partnership with the Private Sector	The old output 3.43 (from PIF) has been separated into two outputs.
		3.2.2: Implementation of Harmonised Policies and Laws to address Pollution Reduction	
	4.1: Assessments and analyses provide governance options for integrating surface and groundwater management in the Niger-ITTAS system	4.1.1: Assessment of current national and regional actors in ground and surface water management and Analysis of options for integrating surface and groundwater governance mechanisms	<p>The outputs contributing to Outcome 4.1 (unchanged) have been reorganised slightly in order to more clearly represent three related focus areas:</p> <ul style="list-style-type: none"> • Improving the integrated management of surface and ground water resources (through better/more appropriate governance, integration of planning and strategies etc.) • Improving support to the implementation of the NBA's Investment Plan • Capacity building <p>For the first of these three, Outputs 4.1.1 to 4.1.3 represent a stepwise approach towards reaching realistic governance goals. In the PIF expression of the outputs this was not clear</p>
	4.2: Countries technically supported to: evaluate surface-groundwater governance options, reach consensus on an option and implement agreed option to strengthen conjunctive management of surface and groundwaters	4.1.2: Selection and Implementation of agreed Options for Integrated Governance to strengthen Conjunctive Management	
	4.3: Policy actions at regional (NBA, Consultation Mechanism) and national levels (inter-ministerial committees, ministries responsible for water) further integrate conjunctive management of transboundary ground and surface waters into SDAP, National plans and strategies (IWRM, NAPs among others) leading to mainstreaming and implementation of policy reforms	4.1.3: Policy actions at regional and national levels to further integrate conjunctive management of transboundary ground and surface waters into SDAP, National plans and strategies through the review and update of the NB-SAP and accompanying NAPs, leading to mainstreaming and implementation of policy reforms	

			In addition, review and update of NB SAP and associated NAPs is included in the Output 4.1.3, as per usual practices for SAP implementation phase projects.
	4.4: Ministries of Finances and Parliamentarian set up dedicated monitoring and evaluation mechanisms through MOU, Work Plan, Aid Memoire, etc. to assess and monitor budget allocated to support the implantation of the SDAP and its Investment Program	4.1.4: Formalisation of National level Support to Implementation of the Investments Plan and Development and Implementation of Dedicated Monitoring and Evaluation Tools	The title of this output has been simplified and no longer includes details of the actions and activities
	4.5: National institutions managing transboundary terrestrial ecosystems and wetlands provided with platform for cooperative actions and capacity building to address current emerging challenges and promote collaborative monitoring mechanisms	4.1.5: National institutions managing transboundary terrestrial ecosystems and wetlands provided with platform for cooperative actions and capacity building to address current emerging challenges and promote collaborative monitoring mechanisms	No significant change
	4.6: Capacities of academic and research institutions strengthen with tools and training to provide relevant knowledge and information guiding the management of basin resources, including groundwater, genetic resources, climate vulnerability and risks, etc.;	4.1.6: Capacities of academic and research institutions strengthened with tools and training to provide relevant knowledge and information guiding the management of basin resources	Slightly simplified wording
	4.7: Transboundary Learning mechanisms established at community and Inter States levels; and experiences shared through website, IWLEARN, technical papers, video, technical forums, GEF IW Biennale Conference, WWF, AMCOW and other relevant forums	4.1.7: Transboundary Learning mechanisms established at community and Inter State levels; and experiences shared through website, IWLEARN, technical papers, video, technical forums, GEF IW Biennale Conference, WWF, AMCOW and other relevant forums	No significant change in wording

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

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

Different stakeholders and “categories” of stakeholders will be involved in all of the 4 project components. A high level of stakeholder participation is both planned and seen as a major contributor to the eventual sustainability of the project.

- In Component 1, which will see the development of the TDA and SAP for the ITTAS, the fullest possible consultation with the scientific community and holders of relevant data and information is planned in

order to complete the TDA. Development of the SAP will be stakeholder driven with the putting in place of a regional working group and national working groups. These groups will be consulted on an ongoing basis and will also attend regional and national level stakeholder workshops aimed at developing the SAP and ensuring stakeholder ownership. Key stakeholders for implementation of the SAP, such as NBA, OSS and nationally based institutions and individuals will receive training on TDA and SAP.

- Component 2 is entirely focussed on stakeholder participation. The design of the pilot demonstration projects is to be built around the stakeholders to ensure that an ecosystem-based approach to water and natural resources management is accompanied, indeed driven by, improved livelihoods for the beneficiary communities. These beneficiaries are the stakeholders that will participate in all steps of the demonstration project planning, design and implementation process and who will actively participate in the projects implementation through civil society and water user associations.
- Component 3 has a specific focus on reducing industrial pollution. The proposed TEST approach aims to encourage industry (the stakeholders) to reduced pollution through the adoption of best practices which will also result in better performance and overall savings. Replication and taking to scale will be promoted through experience sharing by the targeted industry with other stakeholders.
- Component 4 is concerned with Capacity building and stakeholders involvement in Niger River ecosystem based management. The component is cross-cutting in nature and is aimed at supporting the required building of capacity to ensure that national policies and institutions are fully able to support ecosystem-based management of the Niger River basin. Specific groups of stakeholders are targeted including i) high level institutional stakeholders who would be responsible for transboundary (and national-level) conjunctive ground/surface water management ii) National institutions managing transboundary terrestrial ecosystems and wetlands provided with platform for cooperative actions and capacity building to address current emerging challenges and promote collaborative monitoring mechanisms iii) academia and researchers in order to capacitate trainers and iv) the general public and school learners.

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):

All components of the project have socioeconomic benefits at the national and local levels but Component 2 is particularly strong on the delivery of socioeconomic benefits and in the consideration of gender dimensions.

- While the target areas for Component 2 have been chosen with the most critical of the Niger basin's long-term environmental quality objectives (LTEQOs) in mind (aquatic environment, mountain forest ecosystems and protected areas), the demonstration project design is based on several project planning and design principles, many of which reflect the importance of socio-economic development and/or livelihood enhancement. The first of these principles is that the projects should "lead to the enhancement of livelihoods, thus encouraging community buy-in and promote alternative livelihood generating activities, where possible".

Implementation of the demonstration projects will be largely done by civil society and water user associations. Women will be given a prominent role in the decision-making process by ensuring equal representation of women in these user associations wherever possible. Given the key role that the user associations will play, this should ensure that women have a prominent role to play in terms of ensuring gender equality and women's empowerment.

- While Component 1 is highly scientific in content, the envisaged result is that there will be a better understanding of the ITTAS groundwater system and its interaction with surface water. Groundwater is the key water source for the large majority of rural communities and its development at the core of providing an improved water supply to the population in general. This is an important indicator of development.
- The capacity building and involvement proposed under Component 4, which will cut across all project activities, will be designed in such a way that women are equally represented at the different levels, especially at the civil society level where the project can have most influence.

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

The project aims to ensure cost-effectiveness through a number of ways. Many of these are presented in the project strategy:

- Building on previous work: The proposed project is built upon a long history of initiatives and interventions led especially by NBA and OSS. A large amount of knowledge has been built and is readily available. The work carried out to develop the TDA for IAS part of the ITTAS has provided valuable lessons on the best approaches to be adopted for groundwater modelling and the drawing up the TDA. As a result of this work and the NBA's own initiatives in involving stakeholders, there will be little time and resources wasted in finding the appropriate stakeholders with who to engage.

The NBA, as well as OSS through their country focal points, have already had good experience in the implementation of pilot demonstration projects of the type proposed. Again this means that the learning curve is short.

- Active Stakeholder engagement: Capacity-building and empowerment are key parts of the keeping the project cost-effective, especially as work continues beyond the five year project period.

Close cooperation with other major stakeholders and 'players' within the basin, especially the private sector (Component 3) is a key part of the project design. Component 4 is largely put over to addressing Stakeholder Engagement and Partnership. One of the main benefits of this will be to localise inputs to the project and to the future.

- Long-term approach to sustainability: As Cost-effectiveness of the Component 2 demonstration projects will be assured by making use of local experience and locally-based consultants to support the process and ensure that there is capacity available locally when it comes to project replication and taking to scale.

C. DESCRIBE THE BUDGETED M & E PLAN:

The project will be monitored through the monitoring and evaluation activities of UNDP guidelines respectively. Monitoring of the project activities will be conducted or coordinated primarily by the Project Coordinator, with support from GEF IAs and EAs and the Components' Task Leaders. There will be interim and final reports. The interim report will be submitted upon completion of the first year of implementation to report on progress with project implementation, as well as problems encountered and necessary adjustments to the work plan. The final report will include a summary of all activities carried out, as well as lessons learned.

- A Project **Inception** Workshop will be held within the first 3 months of project start up with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible, regional technical policy and program advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first annual work plan. The Inception Workshop should address a number of key issues including:
 - Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and PCT staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the overall project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms.
 - Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
 - Provide a detailed overview of reporting, monitoring and evaluation requirements. The **Monitoring and Evaluation work plan and budget should be agreed and scheduled**.
 - Discuss financial reporting procedures and obligations, and arrangements for annual audit.
 - Plan and schedule Project Steering Committee meetings.

The Inception Workshop report will be a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

- **Quarterly Reporting:** Progress made shall be monitored in the respective UNEP and UNDP Enhanced Results Based Management Platform.

Based on the initial risk analysis submitted, the risk log shall be regularly updated. Risks become critical when the impact and probability are high. For UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).

Based on the information recorded in UNEP and UNDP formats, a Project Progress Reports (PPR) can be generated in the Executive Snapshot. Other UNDP-ATLAS logs can be used to monitor issues, lessons learned etc... The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

- **Annually: Annual Project Review/Project Implementation Reports (APR/PIR):** This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
 - Project outputs delivered per project outcome (annual).
 - Lesson learned/good practice.
 - Risk and adaptive management
 - ATLAS QPR
 - Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.
- **Periodic Monitoring** through site visits: UNDP CO, UNEP TM and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Steering Committee may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Steering Committee members.
- **Mid-term** of project cycle: The project will undergo an independent **Mid-Term Review (MTR)** at the mid-point of project implementation (between the 2nd and 3rd PIRs). The Mid-Term Review will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term review will be prepared by the UNDP CO based on guidance from the UNDP-GEF and UNEP TM. The management response and the MTR report will be uploaded to UNDP corporate systems, in particular the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#).
The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term review cycle.
- **End of Project: Evaluations and Terminal Report:** An independent **Terminal Evaluation** will take place three months prior to the final Project Steering Committee meeting and will be undertaken in accordance with UNDP, UNEP and GEF guidance, following the UNDP template. The terminal evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term review, if any such correction took place). The terminal evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the UNDP-GEF and UNEP TM.

The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNEP and Evaluation Office and [UNDP Evaluation Office Evaluation Resource Centre \(ERC\)](#).

The relevant GEF Focal Area Tracking Tools will also be completed during the terminal evaluation.

During the last three months, the project team will prepare the **Project Terminal Report**. This comprehensive 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

- **M&E workplan and budget**

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> • Project Coordinator • UNEP TM, UNDP CO, UNDP GEF 	20,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> • UNDP GEF PCU/Project Coordinator will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. 	To be finalized in Inception Phase and Workshop: 0	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on output and implementation	<ul style="list-style-type: none"> • Oversight by Project Coordinator • Project team 	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> • Project Coordinator and team • UNDP CO • UNEP TM • UNDP RTA • UNDP EEG 	0	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> • Project Coordinator and team 	0	Quarterly
Mid-term Review	<ul style="list-style-type: none"> • Project Coordinator and team • UNDP CO • UNEP TM • UNDP RCU • External Consultants (i.e. evaluation team) 	50,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> • Project Coordinator and team, • UNDP CO • UNEP TM • UNDP RCU • External Consultants (i.e. evaluation team) 	Indicative cost : 50,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> • Project Coordinator and team • UNDP CO • UNEP TM • local consultant 	0	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> • UNDP CO • Project Coordinator and team 	10,000/year	Yearly
Visits to field sites	<ul style="list-style-type: none"> • UNDP CO • UNEP TM • UNDP RCU (as appropriate) • Government representatives 	For GEF supported projects, paid from IA fees and operational budget: 50,000	Yearly
TOTAL indicative COST The costs are covered under Project Management Support Costs Excluding project team staff time and UNDP staff and travel expenses		US\$ 220,000	


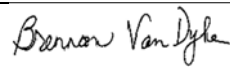
PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

- 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)
Ms. Asma OURAMDANE	Deputy Director of Bilateral Cooperation	Ministère des Ressources en Eau et de l'Environnement, Algeria	23 July 2015
Mr. Delphin AIDJI	Secrétaire General Adjoint du Ministère	Ministère de l'Environnement, de l'Habitat et de l'urbanisme, Benin	23 July 2013
Mr. Mamadou HONADIA	Permanent Secretary	Permanent Secretariat for the National Council for Environment and Sustainable Development, Burkina Faso	14 may 2013
Mr. Justin NANTCHOU NGOKO	Director	Ministry of Environment and Nature Protection, Cameroon	6 June 2013
Mr. Gaourang MAMADI N'GARKELO	Directeur de Cabinet du Ministre de L'Environnement	Ministère de l'Environnement, de la Qualité de vie et des Parcs Nationaux, Chad	12 July 2013
Mme Alimata Kone-Bakayoko	Permanent Secretary	Ministry of Economy and Finance, Côte d'Ivoire	24 July 2013
Mr Ahmadou Sebory TOURE	Director General	Fonds de Sauvegarde de l'Environnement, Guinea	13 May 2013
Mr. Sekou KONE	Director	Agency for Environment and Sustainable Development, Mali	18 July 2013
Dr. Mohamed Yahya LAFDAL	Directeur de la Programmation, de la Coordination Intersectorielle et de la Coopération (DPCIC)	Ministère délégué auprès du Premier Ministre chargé de l'Environnement, Mauritania	21 July 2013
Mr. Yaye SEYDOU	General Director of Planning	Ministère du Plan de l'Aménagement du Territoire et du Développement Communautaire, Niger	10 July 2013
Mr. Momoh Tahir ABU	Director	Federal Ministry of Environment, Nigeria	3 September 2013

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
Adriana Dinu, Executive Coordinator, UNDP-GEF		28 June 2016	Akiko Yamamoto	+251 91 2503316	Akiko.yamamoto @undp.org
Brennan Van Dyke Director, GEF Coordination Office, UNEP		June 27, 2016	Yegor Volovik UNEP Task Manager	+254-20- 7626707	Yegor.volovik@unep .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).

Project Results Framework

This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: Not Applicable
Country Programme Outcome Indicators: Not Applicable
Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 2.5. Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use, and access and benefit sharing of natural resources, biodiversity and ecosystems, in line with international conventions and national legislation 1.3. Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste
Applicable GEF Strategic Objective and Program: GEF 5 IW A): Catalyse multi-state cooperation to balance conflicting water uses in trans-boundary surface and groundwater basins while considering climatic variability and change GEF 5 IW C): Support foundational capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of trans-boundary water systems
Applicable GEF Expected Outcomes: Outcome 1.3: Innovative solutions implemented for reduced pollution, improved water use efficiency, sustainable fisheries with rights-based management, IWRM, water supply protection in SIDS, and aquifer and catchment protection Outcome 3.3: IW portfolio capacity and performance enhanced from active learning/KM/experience sharing
Applicable GEF Outcome Indicators: Indicator 1.3: Measurable water- related results from local demonstrations Indicator 3.3: GEF 5 performance improved over GEF 4 per data from IW Tracking Tool; capacity survey

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
Project Objective: The objective of the project is to improve knowledge-based management, governance and resource	<ul style="list-style-type: none"> Water consumption per capita and Gini-coefficients of water consumption among countries 	<ul style="list-style-type: none"> Water balance for Niger defined at a number of critical points and IAS at CT⁵ (3.3 m³/s) and for CI⁶ 	<ul style="list-style-type: none"> 15% reduction of Gini⁷ coefficient (as related to per capita water consumption) across all NBA/ITTAS 	<ul style="list-style-type: none"> Research Results Statistical Data of Water Ministries and NBA 	<ul style="list-style-type: none"> Conjunctive Water Management is effective enough to reduce water abstractions to an extent that it allows higher water

⁵ CT, the “Continental Terminal” aquifer

⁶ CI, the “Continental Intercalaire” aquifer,

⁷ Gini coefficient The Gini Coefficient is one of the most commonly used indicators for measuring distribution. It is traditionally applied to the measurement of income inequality, but has also been applied to measure land inequality. The closer that the Gini coefficient is to 0, the more equal the distribution.

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
conservation of the Niger River Basin and the Iullemeden-Taoudéni/Tanezrouft Aquifers (ITTAS), to support IWRM for the benefit of communities and the resilience of ecosystems	<ul style="list-style-type: none"> Water balance within NB/ITTAS compared to 1970 level with sub-indicators as appropriate. State of development of common monitoring system measured through parameters and methods monitored Number of demonstration projects yielding positive outcomes (use of sub-indicators) Degree to which ecosystem-based and integrated SW/GW management approach is integrated into the NBA SDAP and IP Degree to which principles of User-Payer and especially Polluter-Payer have been developed and harmonized across all NBA/ITTAS member states. Level of governance of the integrated SW/GW resource at the national and regional levels 	<p>(1,61m³/s) based on 1970 Referential time. Global Water balance ITTAS established in 2013.</p> <ul style="list-style-type: none"> Fragmented and insufficient monitoring, with differences among countries Niger Basin water charter basis for common legislation, but not implemented or enforced on country levels Although mandated, NBA attention to groundwater is significantly lower than for surface water. User-Payer principles are generally not implemented in any of the countries In most countries level of SW/GW conjunctive management is minimal 	<p>countries NBA/ITTAS countries</p> <ul style="list-style-type: none"> Common harmonized monitoring system for key environmental variables in place and operational Transboundary Conjunctive Water management based on scientific modelling and Transboundary mechanisms for International Water management have allowed increased Water balance within the NB/ITTAS higher than 1970 (pre-drought) levels. Water balance for ITTAS at CT and CI well established. Mechanism for long-term and sustainable governance of the surface and ground waters of the ITTAS and Niger Basin in ready for phased roll out harmonized monitoring of key environmental countries across NBA/ITTAS 	<ul style="list-style-type: none"> Interviews with OSS, NBA, member country representatives, project reports Research Results Interviews with OSS, NBA, member country representatives, project reports, legislative documents themselves Interviews with OSS, NBA, member country representatives, project reports Status reports (with numbers of sites, samples collected etc) for transboundary and national monitoring systems, access to databases Number of sub-basins for which management is scientifically-based (using models etc) can be verified through NBA and member countries The models set up and calibrated as part of this project will be used to evaluate water balance trends through the course of the project and beyond Interviews with OSS, NBA, member country representatives, project reports Reports on training and sensitization will be gender-disaggregated 	<p>consumption for household and economic purposes without negative impacts on the water balance</p> <ul style="list-style-type: none"> countries have an interest to implement monitoring of water systems and pollution in a harmonized way on transboundary levels and are endowed with similar equipment and use similar methods which are feasible countries have an interest to implement monitoring of water systems and pollution in a harmonized way on transboundary levels countries have an interest to implement improved and harmonized legislation with respect to conjunctive water management and pollution control on transboundary levels and have the capacities to enforce it.
Outcome 1.1.1: IWRM supported by a sound understanding of ground water resources	<ul style="list-style-type: none"> % of TTAS system modelled and understood to same level as IAS 	<ul style="list-style-type: none"> IAS part has been modelled and understood with acceptable level of confidence. Global 	<ul style="list-style-type: none"> Ground and surface water interaction modelled and quantified for entire ITTAS to same level as currently for IAS 	<ul style="list-style-type: none"> TDA/SAP completed and endorsed Updated NBA SDAP and IP reflecting inclusion of the NBA 	<p>Risks</p> <ul style="list-style-type: none"> Accessibility to all necessary parts of the ITTAS for field work may be a challenge

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
and their linkages with surface water systems	<ul style="list-style-type: none"> TDA for ITTAS completed and endorsed SAP for ITTAS completed and endorsed # of water balance and allocation modelling that incorporates both GW and SW % of Community-level IWRM initiatives taking integrated GW/SW planning and utilization approach 	<ul style="list-style-type: none"> ITTAS model done (OSS, 2013). No TDA or similar analysis for ITTAS No SAP for either IAS or TTAS Water balance and water allocation models for SW and GW are largely separate Most water resource development and planning initiatives carried out separately for SW and GW Major gaps in capacity (HR and technical equipment) to accomplish research and political actions 	<ul style="list-style-type: none"> NBA SDAP and IP has fully incorporated applicable parts of ITTAS SAP NBA and other institutions' water balance and allocation models fully include conjunctive use approach TDA completed and signed off at the technical level by each country SAP (and NAPs at national levels) completed and endorsed by designated ministers in each country. All water resource development and planning initiatives adopt an integrated SW/GW approach Adequate HR and equipment in place for monitoring and other actions 	<ul style="list-style-type: none"> SAP. SAP fully integrated into the NBA's SDA Configuration of water balance and allocation models IWRM Planning reports and designs Consultation with stakeholders HR and equipment audits research reports, interviews with OSS and independent scientists, visits to OSS and NBA 	<ul style="list-style-type: none"> shortcomings of adequate data for accurate modelling political resistance towards Transboundary Water Management and SAP implementation <p>Assumptions</p> <ul style="list-style-type: none"> Despite the fact that the IAS modelling was done +/- 7 years ago, it will still be possible to integrate both components of the ITTAS aquifer Unhindered implementation of research activities, sufficient capacities developed, all required equipment procured
Output 1.1.1: Hydrogeological functioning of/and linkages between the Iullemeden, Taoudéni-Tanezrouft Aquifers (ITTAS), other aquifers systems and the surface waters of Niger River Basin	<ul style="list-style-type: none"> % of TTAS system modelled and understood to same level as IAS Functioning of Models for total ITTAS area with respect to the production of information relevant to CWM (distances between recovery and recharge areas, the permeability and storage capacities of the aquifer system, the time lag between extraction of water from one resource and its impact on the other, transmissivity etc. Model results under conditions of climate change generated 	<ul style="list-style-type: none"> Hydrological models available only for IAS in a simplified form reduced to CI and CT with low resolution. Full research chain exists for IAS Global model in place (OSS, 2013)⁸ covering the overall ITTAS 	<ul style="list-style-type: none"> A full research chain including data collection, modelling and mapping exists for TTAS in the same way as currently for IAS Detailed functioning models deliver all necessary parameters on available for total ITTAS in higher resolution (which provided Functioning models which have been run under condition of climate change 	<ul style="list-style-type: none"> TDA/SAP completed and endorsed Updated NBA SDAP and IP reflecting inclusion of the NBA SAP. SAP fully integrated into the NBA's SDA Configuration of water balance and allocation models IWRM Planning reports and designs Consultation with stakeholders 	<p>Risks</p> <ul style="list-style-type: none"> Accessibility to all necessary parts of the ITTAS for field work may be a challenge Lack of adequate data for accurate modelling <p>Assumptions</p> <ul style="list-style-type: none"> Despite the fact that the IAS modelling was done +/- 7 years ago, it will still be possible to integrate both components of the ITTAS aquifer

⁸ OSS, 2013. Modélisation et vulnérabilité. 121 pages, 97 figures, 17 tableaux. 26.6 Mo

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
Output 1.1.2: Technically Cleared TDA and SAP for the ITTAS	<ul style="list-style-type: none"> TDA and SAP for ITTAS completed and endorsed Availability of TDA/SAP for TTAS, measured by list of SAP-SDAP parameters based upon SAP IAS according to Scorecard 	<ul style="list-style-type: none"> No TDA or similar analysis for TTAS No SAP (only TDA) for IAS 	<ul style="list-style-type: none"> NBA SDAP and IP has fully incorporated applicable parts of ITTAS SAP TDA completed and signed off at the technical level by each country SAP (and NAPs at national levels) completed and endorsed by designated ministers in each country 	<ul style="list-style-type: none"> TDA/SAP completed and endorsed Updated NBA SDAP and IP reflecting inclusion of the NBA SAP. NBA's SDAP updated by ITTAS SAP 	Risks <ul style="list-style-type: none"> Difficulties associated to differences between NBA and ITTAS geographical areas Need to involve other institutions (e.g. OMVS as GICRESAIT Steering Committee member) who have not been sufficiently part of process. Challenges associated with integration into already completed SDAP and IP.
Output 1.1.3: Strengthened Capacity of National and Regional Water Managers	<ul style="list-style-type: none"> Number of persons in specific institutions (OSS, NBA and others) with full working knowledge of TDA/SAP process Number of persons in specific institutions (OSS, NBA and others) able to run and update ITTAS groundwater models. Number of persons within specific institutions with experience in GW/SW (Sex-disaggregated data will be collected.) 	<ul style="list-style-type: none"> Very limited capacity within OSS, NBA and regional institutions in groundwater modelling Some capacity and experience within OSS, NBA, regional and national institutions in TDA/SAP process and work Very limited capacity and experience in the setting up and operation of integrated SW/GW balance and allocation models 	<ul style="list-style-type: none"> Capacity gaps of establishing TDA/SAP are reduced according to Score Card which will be established during inception phase All water resource development and planning initiatives within OSS, NBA and others adopt an integrated SW/GW approach OSS, NBA and other institutions' water balance and allocation models fully include conjunctive use 	<ul style="list-style-type: none"> Configuration of water balance and allocation models IWRM Planning reports and designs Consultation with stakeholders 	Risks <ul style="list-style-type: none"> Loss of capacity from staff turnover, braindrain Assumptions <ul style="list-style-type: none"> Water management institutions have adequate manpower and low staff turnover
Outcome 2.1: Niger Basin Users Associations and National NGOs engaged in basin resources management and conservation for better control of flood/drought/pollution, reduction of pressure on land, forest and biodiversity while	<ul style="list-style-type: none"> a) Area of Infestation by aquatic weeds at selected project sites b) % of total area of all wetland demonstration sites in which biodiversity has been restored to > 50% of status of reference site. c) % of total area of all protected area demonstration sites in which biodiversity has been restored to > 	<ul style="list-style-type: none"> a) High infestation rates particularly in Nigeria are impeding navigation, fishing etc. b-d) baseline state biodiversity to be defined during inception and the area under this condition. Good condition reference sites to be surveyed for definition of targets (for each ecosystem type) 	<ul style="list-style-type: none"> a) River users (navigation and fisheries) not significantly impeded by aquatic weeds b) Biodiversity of aquatic ecosystems restored to 50% of reference sites c) Biodiversity of wetlands at demonstration sites restored to 50% of that of reference sites d) Biodiversity of protected areas of Niger W, Chad and Northern Cameroon at 	<ul style="list-style-type: none"> a) Volume of traffic, tonnes catch and questionnaires completed by users b-d) biodiversity and condition of relatively undisturbed reference sites to established for each ecosystem e) gauging station to be set up and rated for water/level discharge and for sediment sampling 	Assumptions <ul style="list-style-type: none"> a) Equipment and land management skills sufficient b – e) adequate resources for surveys, cooperation of research institutions (universities, etc.) f) adequate resources for operation and maintenance of gauging station

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
improving living conditions of households	<p>50% of status of reference site</p> <ul style="list-style-type: none"> d) % of total area of all mountain forest ecosystem demonstration sites in which biodiversity has been restored to > 50% of status of reference site e) Average change in sediment transport in selected streams exiting protected area and mountain forest ecosystem demonstration sites f) % of groundwater and conjunctive use demonstration sites where issues of water quality or quantity identified at inception have improved g) % of demonstration sites where drought and flood impacts have decreased (baseflow and flood index) h) Extent of combined use of surface and groundwater resources i) Average per capita income of populations at demonstration project areas (sex-disaggregated data will be collected.) j) Number of Equitable benefit-sharing regimes established among communities (sex-disaggregated data will be collected.) k) Participation of women in all demonstration 	<ul style="list-style-type: none"> e) sediment load monitoring programme to be setup during Inception Phase and continued through duration of project. f) To be established during Inception Phase g) SPI and flood index to be measured during Inception Phase and throughout project life h) to be established during Inception Phase i) To be established through survey of income and livelihoods during Inception j) To be established during project inception 	<p>demonstration sites restored to 50% of that of reference sites</p> <ul style="list-style-type: none"> e) Mountain forest ecosystems in Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin effectively restored at demonstration sites to 50% of condition of reference sites f) 25% reduction in sediment load g) Values for dissolved oxygen, pH, EC, NO3-N, Total coliform to be better than WHO standards h) 10% increase in baseflow 10% decrease in flood index i) 25 % increase in combined use i)-k) 50% increase in all three areas j) Gender Action Plan implemented k) Sex-disaggregated data tracked by the project show improvement in gender mainstreaming and women empowerment compared to the baseline 	<ul style="list-style-type: none"> f) stakeholder consultation and observation g) Field measurements h) stakeholder consultation and observation i) Socio-economic surveys j) stakeholder consultation and observation 	<ul style="list-style-type: none"> g) Possible to detect trends

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	activities tracked in numbers. <ul style="list-style-type: none"> Gender Assessment both at the national and regional level produced. Gender Action Plan, based on the Gender Assessment, developed by end Year 1. 				
Output 2.1.1: Protection of Aquatic Habitat and Biodiversity of Threatened Wetlands	<ul style="list-style-type: none"> % of the area of the wetlands of the Inner Delta, the Middle Niger and the Maritime Delta for which biodiversity restored % demonstration sites at which invasive aquatic plants have been effectively controlled % demonstration sites at which the biodiversity of aquatic ecosystems has been effectively restored. 	<ul style="list-style-type: none"> Baseline description of biodiversity exists for the Inner Delta, the Middle Niger and the Maritime Delta Baseline description of level of infestation of invasive aquatic plants exists but may have to be improved and updated on a regular basis. Baseline description of biodiversity of aquatic systems exists but may have to be improved 	<ul style="list-style-type: none"> Biodiversity of wetlands at demonstration sites restored to 50% of that of reference sites The most effective methods to control invasives and the financial sustainability plan to maintain them established at each demonstration site. Biodiversity of aquatic ecosystems at demonstration sites restored to 50% of that of reference sites Recommendations and implementation plan for replication and taking to scale in place 	<ul style="list-style-type: none"> Biodiversity surveys and snapshots at demonstration sites (before and after) 	Risks <ul style="list-style-type: none"> Current security situation in targeted areas may complicate implementation of demonstration projects in these areas.
Output 2.1.2: Restoration and Improved Management of Protected Areas	<ul style="list-style-type: none"> % of demonstration sites in W Niger for which the biodiversity of the protected areas has been restored % of demonstration sites in Chad for which the biodiversity of the protected areas has been restored % of demonstration sites in Northern Cameroon for which the biodiversity of the protected areas has been restored. 	<ul style="list-style-type: none"> # demonstration projects already implemented under previous projects in each of the 3 targeted protected areas. Baseline description of biodiversity exists for the protected areas of W Niger, Chad and Northern Cameroon but may require updating and improvement 	<ul style="list-style-type: none"> Biodiversity of protected areas of Niger W, Chad and Northern Cameroon restored at demonstration sites to 50% of that of reference sites Recommendations and implementation plan for replication and taking to scale in place 	<ul style="list-style-type: none"> Surveys of condition of protected areas and snapshots at demonstration sites (before and after) Feedback from stakeholders aimed at assessing management level 	Risks <ul style="list-style-type: none"> Current security situation in targeted areas in Chad and Northern Cameroon may complicate implementation of demonstration projects in these areas.

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
Output 2.1.3: Restoration and Sustainable Management of Mountain Forest Ecosystems	<ul style="list-style-type: none"> • % of demonstration sites in Upper Guinea for which mountain forest ecosystems have been restored. • % of demonstration sites in the Sikasso Region, Mali for which mountain forest ecosystems have been restored • % of demonstration sites in Bani Basin, Mali for which mountain forest ecosystems have been restored • % of demonstration sites in the Adamaoua, Cameroon, Benin for which mountain forest ecosystems have been restored 	<ul style="list-style-type: none"> • # demonstration projects already implemented under previous projects in each of the 4 targeted protected areas. • Baseline description of status of mountain forest ecosystems in Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin exists but may require updating and improvement 	<ul style="list-style-type: none"> • Mountain forest ecosystems in Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin at demonstration sites restored to 50% of that of reference sites • Recommendations and implementation plan for replication and taking to scale in place 	<ul style="list-style-type: none"> • Surveys of mountain forest ecosystems and snapshots at demonstration sites (before and after) 	Risks <ul style="list-style-type: none"> • Current security situation in targeted areas may complicate implementation of demonstration projects in these areas.
Output 2.1.4: Demonstration of Best Practices in Groundwater Management and Integrated planning of Surface and Groundwater Resources	<ul style="list-style-type: none"> • Number of demonstration projects chosen and successfully implemented • % of demonstration sites where issues of water quality or quantity identified at inception have improved • Whether or not recommendations and implementation plan for taking to scale are in place 	<ul style="list-style-type: none"> • Status of water quality and quantity issues as defined at each demonstration project Inception. • Degree of conjunctive water management as defined at each demonstration project Inception • 	<ul style="list-style-type: none"> • Issues of water quality or quantity as identified at inception have been resolved at each demonstration site • Results disseminated and experience shared • Plan for replication and taking to scale agreed and endorsed at national and NBA/ITTAS levels. 	<ul style="list-style-type: none"> • Surveys and snapshots at demonstration sites (before and after) • Feedback from stakeholders 	Risks <ul style="list-style-type: none"> • Current security situation in targeted areas may complicate implementation of demonstration projects in these areas.
Output 2.1.5: Provision of Training to Basin Water User Associations	<ul style="list-style-type: none"> • # of basin water user associations capacitated to an agreed standard. (sex-disaggregated data will be collected) 	<ul style="list-style-type: none"> • Level of capacity in each project area to be assessed during Inception Phase for each demonstration project 	<ul style="list-style-type: none"> • Water user associations and other related stakeholder organizations in each demonstration project area all fully capacitated and independent 	<ul style="list-style-type: none"> • As part of monitoring and evaluation program 	

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
Output 2.1.6: Strategy for linking up and integrating community-based interventions (Outputs 2.1.1 to 2.1.5) so that livelihood-based ecosystem management becomes the basis for the sustainable management of water resources basin-wide	<ul style="list-style-type: none"> Existence or not of national and NBA/ITTAS level endorsement of strategy for linking and integrating community-based projects in preparation for replication of pilots and taking to scale Existence or not of policy recommendations supporting this at the national levels 	<ul style="list-style-type: none"> No coherent strategies in place No policy recommendations in place. 	<ul style="list-style-type: none"> Clear policies and guidelines in place for the linking and integrating of community-based projects in preparation for replication of pilots and taking to scale 	<ul style="list-style-type: none"> Reports and documentation 	
Outcome 3.1 Introduce systematic and integrated approach of industrial competitiveness and environmental/social responsibility to reduce wastewater discharges and pollution loads in the Niger River.	<ul style="list-style-type: none"> % of the TEST innovative approaches implemented at the pilot enterprise levels % decrease in the volume of a target pollutant in discharges from the selected enterprises' recorded % Financial return on environmental investments and application of the TEST approach witnessed. % success rate after the introduction and implementation TEST Approach recorded in most pilot enterprises. <p>Positive impacts on women from reduced pollution loads and discharges to the water system will be tracked (through interviews, etc.).</p>	<ul style="list-style-type: none"> Balance between industrial competitiveness and environmental/social responsibility were not a concern or a business as usual at polluting enterprises level 	<ul style="list-style-type: none"> More than half of the participating pilot enterprises have taken on board the proposed systematic and integrated approach of industrial competitiveness and environmental/social responsibility (based on baseline parameters), at least 10% decrease in the volume of a target pollutant in discharges from the selected enterprises' recorded Energy efficiency gain in operations at the participating enterprises, resulting from the application of the TEST approach At least 15 % financial return on environmental investments and application of the TEST approach witnessed at >2/3 of the sites TEST is piloted. Positive impacts on women recorded and the info shared widely 	<ul style="list-style-type: none"> Project evaluation survey/report Laboratory results. Outcomes of interviews with enterprise' representatives. Voluntary disclosure of enterprises' financial reports. 	<p>Risks:</p> <ol style="list-style-type: none"> Political Risks: Insufficient/lack of political will from NBA member countries and industries to "jointly" combat pollution and hazardous chemical discharges in the Niger River Basin. Economical Risk: Economic factors (jobs, incomes, corporate earnings) might outweigh environmental consideration and resource conservation Ownership Risks: Top management and shareholders of selected enterprises don't continue the implementation of TEST approach midway of the project <p>Assumptions:</p> <ul style="list-style-type: none"> Pollution and contaminant discharges prevention and enforcement mechanism established, Manufacturing, mining and services related industries supported

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
					<p>pollution control and prevention measures</p> <ul style="list-style-type: none"> Industry decision makers are willing to create funds for introducing and integrating the TEST approach within their business operations
<p>Output 3.1.1</p> <p>Niger Basin Authority's Waterbody data/inventorying processes updated; pollution control and regulatory framework improved.</p> <p>(including the identification of causes and sources of pollution)</p>	<ul style="list-style-type: none"> Degree of redefinition of regulatory standards, specifically in areas such as: <ul style="list-style-type: none"> - Point sources of contamination; - Non-point sources of contamination; - Ecologically sensitive areas; - Areas with human health risks; - Areas with environmental degradation. 60-80% of previous scoring/grading standards for pollution hotspots reviewed and or revised as deemed necessary. New standards for pollution hotspots officially introduced. Regulatory Policy reviewed, updated to current needs and good for implementation. 	<ul style="list-style-type: none"> Absence of precise regulation and standards for discharging pollutants Insufficient/lack of political will to combat pollution; Inadequate enforcement of existing regulatory instruments to reprimand pollution (penalties, taxes, etc.). 	<ul style="list-style-type: none"> Water pollution database fully accessible to all interested parties. Report (printout and online) of water quality standards and regulations 	<ul style="list-style-type: none"> Reviewed and updated Inventorying processes report, NBA member state approval and adoption of updated inventory process report(s). Mechanisms for policy implementation clearly defined and accepted by NBA member countries. 	<p>Risks:</p> <ul style="list-style-type: none"> 1. Absence of defined basin-wide regulatory standards for discharging pollutants. 2. Insufficient legal/monitory instruments to reprimand pollution (penalties, taxes, etc.). 3. Insufficient financial resources for a basin-wide surface and groundwater quality monitoring at point source and non-point sources of contamination <p>Assumptions:</p> <ul style="list-style-type: none"> NBA member countries place high priorities on the protection and conservation of natural resources and habitats. Pilot enterprises are willing to cooperate with the new inventorying process. Piloting enterprises see the need for such exercise and the potential economic benefits to their business operations.
<p>Output 3.1.2.</p> <p>Pollution hot spots identified and customized to suit current needs; basin-wide assessment and select ion processes of</p>	<ul style="list-style-type: none"> Technical agreement reached/signed on NBA's member countries on their individual 	<ul style="list-style-type: none"> Insufficient financial resources for monitoring water quality Insufficient competent personnel for the 	<ul style="list-style-type: none"> List of enterprises prioritized on the basis of their contaminant discharges available 9 basin-wide diagnostic pollution hotspot survey 	<ul style="list-style-type: none"> Signed agreements by representatives of NBA member countries. Basin-wide diagnostic pollution hotspot reports. 	<p>Risks:</p> <ul style="list-style-type: none"> 1. Lack of comprehensive basin-wide environmental pollution/contamination data. Level of risk: Medium

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
pilot enterprises improved and mainstreamed.	<p>environmental priorities.</p> <ul style="list-style-type: none"> Number of basin-wide diagnostic pollution hotspot survey carried out in participating NBA countries. Number of willing (in terms of social responsibility and voluntary reporting) enterprises selected and diagnostic pollution hotspot survey customized to suit their business models and physical operations. Correlation of chosen Enterprises with level of their contaminant discharges 	<p>monitoring of pollution often due to the reconversion skilled workers to other higher paying jobs.</p>	<p>carried out in participating NBA countries.</p> <ul style="list-style-type: none"> 11 enterprises selected and diagnostic pollution hotspot survey customized to suit their business models and physical operations 	<ul style="list-style-type: none"> Voluntary commitment letters from selected enterprises signed and received by Project coordinating team and Counterparts. Progress project reporting. 	<ul style="list-style-type: none"> Assumptions: Pollution diagnostic pollution hotspots reports. Project monitoring and evaluation reports.
Output 3.1.3. Transfer of Environmentally Sound Technology (TEST) approach at the enterprise level efficiently introduced.	<ul style="list-style-type: none"> number of customized EMS and EMA training and pollution monitoring modules for selected enterprises developed. Number of employees per demo site/ pilot enterprises are trained. Number of persons within the region trained so as to build reserved pools of private/external experts for future needs. Amount for potential investment in TEST approach earmarked at selected enterprises. Number of low cost RECP modifications at selected enterprises performed. 	<ul style="list-style-type: none"> Lack of knowledge and expertise about the clean technologies within NBA and ITTAS countries. 	<ul style="list-style-type: none"> # of low cost CP modifications performed 1 customized EMS and 1 customized EMA training and pollution monitoring modules for each of the selected enterprises developed At least 2 employees per demo site/ pilot enterprises are trained. 15 persons within the region trained so as to build reserved pools of private/external experts for future needs. At least \$100,000 for potential investment in TEST approach earmarked at selected enterprises At least 9 low cost RECP modifications at selected enterprises performed. 	<ul style="list-style-type: none"> TEST assessment reports. Training attendance sheets. Project evaluation reports. 	<p>Risks:</p> <ul style="list-style-type: none"> Insufficient competent personnel at enterprises level for the monitoring of pollution Level of risk: Medium – Low <p>Assumptions:</p> <ul style="list-style-type: none"> Enterprises are willing to apply TEST methodological approach. Enterprises are willing to invest efforts in training employees for the introduction and or integration of the TEST approach.

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
Output 3.1.4: TEST programme results and experiences disseminated	<ul style="list-style-type: none"> • TEST website for the region created and functional. • Regional seminars to share TEST project results/lessons held. • TEST project evaluation report submitted/presented to Regional Project Advisory Board and approved. 	<ul style="list-style-type: none"> • TEST programs and experiences were unknown in the basin, at least at enterprises level 	<ul style="list-style-type: none"> • Final workshop disseminates the lessons learned and final report is made available 	<ul style="list-style-type: none"> • Minutes of seminars held. • Content and virtual activities/usage of the TEST website. 	Risks: <ul style="list-style-type: none"> • 1. TEST results might have socio-economic and political implications. • 2. Civil communities might use TEST results to justify legal actions against participating enterprises • Level of risk: Medium-Low Assumptions: <ul style="list-style-type: none"> • Project stakeholders are in full agreement of project outcomes irrespective of the nature of lessons learned. •
Outcome 3.2: Industrial Competitiveness and Environmental/Social Responsibility for reduced wastewater discharges reinforced by legal and policy frameworks	<ul style="list-style-type: none"> • NBA polluter-payer guidelines agreed aimed at supporting development of harmonized laws/policies • Number of NBA countries to have passed appropriate polluter-payer legislation • Number of NBA countries to have developed effective polluter-payer policies 	<ul style="list-style-type: none"> • Polluter-payer principle acknowledged by most countries but legal basis is lacking • Polluter-payer policies are weak or absent 	<ul style="list-style-type: none"> • Appropriate and effective harmonized polluter-payer laws in place across all basin states • Appropriate and effective harmonized polluter-payer policies in place across all basin states • Polluter-payer policies implemented and mechanisms to enforce laws in place across the basin 	<ul style="list-style-type: none"> • Laws on statute books • Policies published • Cases of enforcement recorded 	
Output 3.2.1: Development of Proposals for Policy Mainstreaming to address Pollution Reduction in Partnership with the Private Sector	<ul style="list-style-type: none"> • Best proposal agreed by basin states after stakeholder discussions (NBA) • Recommendations made by responsible national institutions to national level law-makers • Policies developed and published by responsible national level institutions 	<ul style="list-style-type: none"> • NBA had begun work on this initiative but progress has stalled in early stages • No recommendations developed as yet 	<ul style="list-style-type: none"> • Proposals for Policy Mainstreaming to address Pollution Reduction in Partnership with the developed and the preferred option agreed and endorsed by at least two thirds (6 of the 9) Niger River Basin states 	<ul style="list-style-type: none"> • Endorsed agreement 	Risks <ul style="list-style-type: none"> • Important economic stakeholders at country level may resist change and complicate the task of policy-makers.

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
Output 3.2.2: Implementation of Harmonised Policies and Laws to address Pollution Reduction	<ul style="list-style-type: none"> Number of NBA countries to have passed appropriate polluter-payer legislation Number of NBA countries to have developed effective polluter-payer policies 	<ul style="list-style-type: none"> Polluter-payer principle acknowledged by most countries but legal basis is lacking Polluter-payer policies are weak or absent 	<ul style="list-style-type: none"> Appropriate and effective harmonized polluter-payer laws in place across all basin states Appropriate and effective harmonized polluter-payer policies in place across all basin states Polluter-payer policies implemented and mechanisms to enforce laws in place across the basin 	<ul style="list-style-type: none"> Laws on statute books Policies published Cases of enforcement recorded 	Risks <ul style="list-style-type: none"> Important economic stakeholders at country level may resist change and complicate the task of policy-makers.
Outcome 4.1: National Policies and Institutions, Civil Society Platforms support Niger River Ecosystem based management	<ul style="list-style-type: none"> Short-term (provisional) governance mechanism for the surface and ground waters of the ITTAS and Niger Basin in place for project duration Long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin endorsed by NBA/ITTAS countries Platform for cooperation and collaborative action operational # of academic and research institutions capacitated to provide required training courses \$ usefully spent on acquirement of specialist equipment for research and analysis Whether or not community and inter-state level 	<ul style="list-style-type: none"> Currently institutional separation of groundwater and surface water management in most countries Although mandated, NBA experience and capacity in transboundary groundwater management and conjunctive GW/SW management is limited. Currently Research institutions not utilized as important source for scientific input or provision of training in basin management Insufficient and fragmented monitoring throughout the ITTAS and the Niger Basin No media reports on CWM No targeted communication efforts to disseminate positive impacts of improved water resources management on women, or women's contribution to improved water 	<ul style="list-style-type: none"> Long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin ready for implementation Academic and research institutions are providing training on the management of basin resources Research at NBA/ITTAS national academic institutions is taking place on an ongoing basis Communities capacitated in transboundary basin management issues GW/SW experience sharing and communications active at all levels Additional research projects on combined NBA/ITTAS Harmonized monitoring programme in place and exists for at least 5 agreed indicators At least the IWLEARN website plus three additional media acknowledge and report Conjunctive Water Management within the ITTAS and Niger Basin At least five media stories featuring women's positive contribution or positive 	<ul style="list-style-type: none"> Draft of Short-term option of governance mechanism (conjunctive management) for the surface and groundwater provided and suggested to the countries for validation; Draft of Long-term option of governance mechanism (conjunctive management) for the surface and groundwater & Road Map provided and suggested to the countries to validate; Documents describing the functions, activities and achievements of platforms as an evidence for institutional/ governance reforms realized at an ecosystem level within the basin to practice IWRM. Records of training workshops on the transboundary (conjunctive) management of basin resources; 	Assumptions <ul style="list-style-type: none"> Political willingness in all countries existent to link groundwater management with surface water management on transboundary levels Research institutions interested to collaborate Countries interested into harmonized monitoring scheme Conjunctive management receives sufficient attention by media

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	transboundary learning mechanisms are in place <ul style="list-style-type: none"> • Harmonized monitoring mechanisms in place • Number of communication media, which report about conjunctive water management, as well as positive impacts on women, number of media accessed 	resources and catchment management in the basin	impacts of improved water resources management practices in the basin on women disseminated through IW:LEARN, websites of NBA, OSS, or UNDP, and other channels	<ul style="list-style-type: none"> • Review of media products in particular IWLEARN website, interview with media people • NBA-ITTAS Website 	
Output 4.1.1: Assessment of current national and regional actors in ground and surface water management and Analysis of options for integrating surface and groundwater governance mechanisms	<ul style="list-style-type: none"> • Existence or not of endorsed report (at national, NBA/ITTAS levels on the Analysis of options for integrating surface and groundwater governance mechanisms 	<ul style="list-style-type: none"> • There is an absence of agreed understanding on what options for integrated transboundary management of SW and GW 	<ul style="list-style-type: none"> • Agreement on analysis of current situation and recommendations going forward 	<ul style="list-style-type: none"> • Reports and documentation 	Risks <ul style="list-style-type: none"> • Vested interests of existing institutions
Output 4.1.2: Selection and Implementation of agreed Options for Integrated Governance to strengthen Conjunctive Management	<ul style="list-style-type: none"> • Reginal workshop to agree and finalize details held • long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin endorsed by NBA/ITTAS countries 	<ul style="list-style-type: none"> • No governance mechanism in place for the joint management of linked transboundary GW and SW resources 	<ul style="list-style-type: none"> • Mechanism for long-term and sustainable governance of the surface and ground waters of the ITTAS and Niger Basin in ready for phased roll out. 	<ul style="list-style-type: none"> • Reports (o Options) and documentation 	Risks <ul style="list-style-type: none"> • Vested interests of existing institutions
Output 4.1.3: Policy actions at regional and national levels to further integrate conjunctive management of transboundary ground and surface waters into SDAP, National plans and strategies leading to mainstreaming and implementation of policy reforms	<ul style="list-style-type: none"> • Completed assessment of policy and related institutional arrangements related to management of SW and GW. • Recommendations for policy actions at national and regional levels 	<ul style="list-style-type: none"> • Existing policy on integrated conjunctive management of SW and GW is weak or non-existent • SAP and NAPs exist but little consideration on groundwater or conjunctive management 	<ul style="list-style-type: none"> • Recommendations for institutional arrangements to support integrated conjunctive SW/GW management agreed at national and regional levels • Recommendations for policy actions to support integrated conjunctive SW/GW management agreed at national and regional levels 	<ul style="list-style-type: none"> • Reports and documentation 	Risks <ul style="list-style-type: none"> • Vested interests of existing institutions

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<ul style="list-style-type: none"> Updated SAP for the Niger River Basin and accompanying NAPs Gender mainstreaming efforts in SAP and NAPs 	<ul style="list-style-type: none"> No gender mainstreaming efforts in SAP or NAP 	<ul style="list-style-type: none"> Updated SAP (and NAPs at national levels) completed and endorsed by designated ministers in each country Updated SAP and NAPs fully including gender considerations 		
Output 4.1.4: Formalisation of National level Support to Implementation of the Investments Plan and Development and Implementation of Dedicated Monitoring and Evaluation Tools	<ul style="list-style-type: none"> Whether or not implementation committee and working group in place Whether or not revised monitoring and evaluation framework and plan for SDAP is in place # of persons at national and regional levels who have been trained on monitoring and evaluation framework. 	<ul style="list-style-type: none"> Monitoring and evaluation plan exists for the SDAP and Investment Plan but requires updating, especially to take into account work done under this project Little coordination between the NBA and relevant national institutions in the M&E activities in the basin 	<ul style="list-style-type: none"> Agreed revised monitoring and evaluation plan is in place for the revised SDAP and revised IP covering NBA and ITAS. Agreed M&E Framework, which describes who monitors what, where, when, how often, etc. to implement the revised M&E Plan, with concrete and tangible involvement of national institutions in the M&E activities 	<ul style="list-style-type: none"> Reports and documentation 	
Output 4.1.5: National institutions contributing to the management of transboundary terrestrial ecosystems and wetlands provided with platform for cooperative actions and capacity building to address current emerging challenges and promote collaborative monitoring mechanisms	<ul style="list-style-type: none"> Whether or not platform for cooperation and collaborative action is in place # % of capacity building plan implemented # of green/innovative technologies demonstration pilots implemented 	<ul style="list-style-type: none"> Cooperation and collaboration among relevant national institutions necessary to realize the ecosystem-based approach is limited Existing capacity levels and experience at national and transboundary levels is limited Few examples of green/innovative technologies in place 	<ul style="list-style-type: none"> Members of the platform for cooperation and collaborative action fully capacitated in dealing with respect to addressing current emerging challenges and promotion of collaboration Joint monitoring system in place and implemented for each target ecosystem for which a platform is established. Capacity development programme developed and implemented for each platform. Quantifiable results monitored and available from green/innovative technology pilots, which support policy discussions for replication and taking to scale. 	<ul style="list-style-type: none"> Stakeholder feedback Minutes from the platform meetings. Joint Monitoring System Records from the joint monitoring exercise. Reports from the capacity development activities, with the sex-disaggregated data on beneficiaries. Reports from the innovative/green technology pilots 	

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
Output 4.1.6: Capacities of academic and research institutions strengthened with tools and training to provide relevant knowledge and information guiding the management of basin resources	<ul style="list-style-type: none"> • Suitable and interested academic and training institutions identified and agreements in place • % of training programmes implemented • % of specialist equipment acquired 	<ul style="list-style-type: none"> • Availability of appropriate training on the management of basin resources is limited 	<ul style="list-style-type: none"> • Academic and research institutions are providing training on the management of basin resources • Research at NBA/ITTAS national academic institutions is taking place on an ongoing basis 	<ul style="list-style-type: none"> • Documentation of training courses. • Publication of research papers 	
Output 4.1.7: Transboundary Learning mechanisms established at community and Inter State levels; and experiences shared through website, IWLEARN, technical papers, video, technical forums, GEF IW Biennale Conference, WWF, AMCOW and other relevant forums	<ul style="list-style-type: none"> • Whether or not community and inter-state level transboundary learning mechanisms are in place • Time to make the website for experience sharing operational and level of interest • # of technical papers published • Level of presence at range of forums • # of stories published promoting gender empowerment results achieved by the project 	<ul style="list-style-type: none"> • Very few learning mechanisms in place • Presence at relevant conferences and forums limited • No targeted outreach efforts promoting gender empowerment efforts/results 	<ul style="list-style-type: none"> • Dynamic, interactive, widely (by all countries) and regularly (annually increasing number of hits for web-based programmes) - utilized learning mechanisms in place at community and inter-state levels. • Website in place within 3 years for experience sharing, and regularly updated • Quarterly increase (trend) in number of hits • Key stakeholders are regular participants and contributors at various forums. • At least 5 stories promoting gender empowerment efforts/results from the project activities 	<ul style="list-style-type: none"> • Most indicators can be directly measured 	

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).

Review Comments in the GEFSEC Review Sheet	Responses
<p>1. Please see previous comments under question 7 highlighting items to be addressed by CEO endorsement. We also hope that Algeria will join during ppg phase.</p>	<p>Algeria has joined during the PPG phase and LOE received.</p> <p>Regarding comments under Q7, see below.</p>
<p>From Question 7:</p> <ul style="list-style-type: none"> - By CEO endorsement please provide clarity on complex endeavours mentioned, such as PES schemes, carbon credit, etc. in collaboration with IUCN. - At CEO endorsement, please clearly allocate 1 % of GEF grant to participate in IWCs, regional IWLEARN meetings, website following the IWLEARN guidance, production of experience notes and results notes - Kindly submit to us a copy of the 2012 SDAP and IP which now incorporates SAP actions into the SDAP and is now the main reference document for support to the joint development process in the Niger Basin. 	<p>As part of Output 4.1.5 aimed at designing and implementing cooperative actions and capacity building to address current emerging challenges and promote collaborative monitoring mechanisms, collaborative actions will be piloted. This will build on and be part of many of the community-based actions which form part of Component 2. Where there are opportunities these collaborative actions can be developed apart from Component 2, but it is anticipated that most opportunities can be developed with the Component 2 demonstration projects as a point of departure. For example, Output 2.1.3 is aimed at the restoration and sustainable management of mountain forest ecosystems and the application of carbon credits can be used to support this project. While PES is not the focus of the TEST approach aimed at reducing industrial pollution under Component 3, the gradual introduction of the “polluter-payer” principle can be used to prepare the ground for the introduction of the Payment for Ecosystem Services concept. This has to be seen as part of the communication strategy which is ultimately aimed at raising awareness and acceptance of an ecosystem-based approach to resources management.</p> <p>In the budget presented in the Project Document, a total of 367,500 USD has been allowed for under Component 4 to cover training, workshops and conferences. Of this, 55,000 USD has been specifically earmarked for training under Output 4.1.5 (capacity building to address current emerging challenges and promote collaborative monitoring mechanisms), 30,000 USD under Output 4.1.6 (strengthening capacities of local/regional academic and research institutions) and 60,000 USD under Output 4.1.7 (Establishment of transboundary Learning mechanisms at community and Inter States levels; and experience sharing through website, IWLEARN, technical papers, video, technical forums, GEF IW Biennale Conference, WWF, AMCOW etc.). This total will therefore exceed the required 1% (\$134,250).</p> <p>Synthesis of the SDAP reports are found here. Climate Risk Assessment of the SDAP, conducted with support from the World Bank and published in Jan 2015, is available from here. Its main report is available from here. Climate Resilient Investment Plan (Nov 2015) is available here. This incorporate SAP actions and climate change considerations into the Investment Plan that will realize the SDAP. The project contribute to both CRIP and SDAP.</p>

2. Please secure revised letters of co-finance in line with increased grant amount.	Done. The co-financing amount is significantly larger than the amount indicated in the approved PIF.
3. This is an innovative project in addressing conjunctive management of surface and groundwater. In addition to clearly allotting 1 % of the project grant to participation in IW:learn activities, please assure additional budget for knowledge management and learning.	Knowledge management and learning is a recurrent element of the project design. It features strongly in each component and in almost all outputs, with significant portions of the project grant earmarked for this. There is allowance for capacity building at all levels (water user association through to national and regional natural resources managers). See also the response above to a comment under Q7.
4. Especially with a revised focus in terms of addressing water quality threats through engagement with main industrial players. please more explicitly address and include private sector entities as stakeholders in project design (e.g. missing from PIF section A2.).	<p>Active engagement of private sector entities in TEST roll-out to achieve pollution load reduction through Comp 3 is an absolute requirement for the TEST roll-out (and its scale-up, which is expected after the project is completed). This is fully included in the project design (see the TEST methodology described in the UNDP project to be executed by UNIDO) and this approach has been fully supported by NBA and the countries as a means to catalyze private sector financing to address water quality problems in the basin. Identification of the specific entities, however, can be only done once we start the project implementation, as per the design of TEST and its methodology. It is worth noting that once specific entities that participates in TEST roll out are identified, we will automatically secure significant private sector co-financing in the project implementation, as per the design of TEST.</p> <p>More in general, involvement of stakeholders in project design is required and explicitly stated in many places in the Project Document, not only as part of planning and implementation of TEST under Component 3. For Component 2, which is at the heart of the project in terms of stakeholder involvement, “a number of planning and design principles” are stated and include: “<i>The projects should be chosen and designed so that they:</i></p> <ul style="list-style-type: none"> - <i>Lead to the enhancement of livelihoods, thus encouraging community buy-in. Promote alternative livelihood generating activities, where possible.</i> - <i>Involve stakeholders (specifically beneficiaries) in the planning and design process. The principles of design can be technical and top-down, but the detailed planning and design should be bottom up and achieved through careful consultation from the outset. This will include the representation of all rights holders, especially women and any marginalised groups. This representation will be made effective by a strong capacity-building programme....”</i>

Comments from STAP Review	Responses
The barriers [to conjunctive use of ground and surface water] described appear to be relevant but are not comprehensively analysed. A fifth barrier, not mentioned, is the lack of clear policies to deal with governance and management of ground and	<i>The first three deliverables/outputs of Component 4 are effectively aimed at dealing with the governance issue of transboundary conjunctive water management. In fact, the challenge is not that the Niger Basin Authority (NBA) does not have a mandate to deliver conjunctive water management or to manage groundwater resources, rather that its mandate is limited to the 9 basin states of which all or part fall within the</i>

surface waters, because existing river basin organizations may not have a mandate to deliver conjunctive water management. A sixth barrier concern the broader political and economic governance aspects at the regional level in which the NBA sits which is critical from a sustainability and ownership point of view. This includes the role of the multipurpose ECOWAS that has developed a specific Water Resources Coordination Centre to ensure the coordination of regional and national sectoral policies on water resources beyond the river basin scale linking it to e.g. the water-energy-food nexus. Important good lessons learned in this regard are noted in the recently approved PIF for the GEF project Sustainable Groundwater Management in SADC Member States (GEF ID 4966) and in STAP's screening report for this project.

“hydrographic” or topographically defined limits of the basin (defined from the surface water perspective.)

In line with the Niger Basin Water Charter, the NBA is mandated by its member states to plan the transboundary management of the water resources of the Niger Basin. In Article 1.2 of the Charter, “hydrographic catchment area” is clearly stated as including groundwater and surface waters flowing to a common terminus, and a watercourse (Art 1.6) as “a system of surface waters and ground waters which by virtue of their physical relationship constitute a unitary whole and normally flow to a common terminus”.

*However, while the sustainable and integrated management of the surface and ground waters of the Niger River Basin is **clearly at the heart of the NBA’s mandate, there are some challenges in how this mandate should be applied in the case of the ITTAS.** These can be summarised as follows:*

- Although Article 1.2 of the Charter states that the hydrographic catchment area is defined as including groundwater and surface water flowing to a common terminus, the catchment boundary which appears on all official maps to define the limits of the Niger Basin is entirely defined by the limits of the surface water system and does **not include the large majority of the TTAS.***
- The ITTAS underlies two large transboundary river basins, the Niger River Basin and the Senegal River Basin. An important question to answer is whether the ITTAS system has linkages with both of these systems and whether there is therefore a related terminus in both river basins.*
- Assuming the definition of hydrographic catchment area as including both the existing area of the Niger Basin and the ITTAS, it is clear that countries (Algeria and Mauretania) which have not ratified the Charter nor been part of the process to build the SDAP are now concerned.*

While dealing with these challenges is at the heart of integrating the governance of surface and ground water resources, it is unrealistic to think that this is not something that can be achieved in the short-term.

The proposed steps, which are included under Outputs 4.1.1 to 4.1.3 of Component 4, are as follows:

- Develop, agree on and implement governance options for application during the immediate future to facilitate implementation of the project. This should be a specific task of the project coordination unit working closely with the project coordination team. The success of the project depends on a mechanism being in place and so this should be addressed during the first six months of the project. The focus should be on finding a practical solution that ensures that the project proceeds on a technically sound basis and that no stakeholders are marginalised.*

- *Develop a strategy and roadmap towards endorsement of a long-term and sustainable governance mechanism and the implementation of transitional arrangements. Bearing in mind that a final governance mechanism that is sustainable and accepted by all parties may take some time to achieve, it is proposed that work towards this goal starts early on in the project with the development of a clear strategy and associated implementation roadmap. The idea would be that the parties can agree on the roadmap and transitional arrangements to allow the governance mechanism to move forwards.*
- *Endorsement of long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin. This should be achieved by the end of the five year project.*

It is worth noting that progress has already been made towards the goal of a suitable governance mechanism. This includes:

- *A letter of **endorsement from the GEF focal point in Algeria expressing the Algerian Government's support for the ITTAS project***
- *The presence of the OMVS at steering committee meetings during development of the GICRESAIT project and*
- *A letter from The Ministry of Water Resources in Senegal letter in which the specific request to take into account the need to complete and improve the information systems on this sedimentary basin and on the relationships between the Senegal River Basin and the TTAS basin is expressed.*

As a result of earlier GEF support, which highlighted the transboundary and common problems of the IAS, in 2009 Mali, Niger and Nigeria adopted a regional governance mechanism, the "Consultation Mechanism" for the shared management of the IAS. The preparation of the ITTAS SAP (Component 1) and other project activities will lay the groundwork to further strengthen and empower policies on conjunctive management of Transboundary ground and surface waters. Building on this, countries will further strengthen the holistic management of Transboundary ground and surface waters by: assessing the current national and regional actors in ground and surface water management and developing options for integrating surface and groundwater governance mechanisms. It should be pointed out that an agreement to move from IAS to ITTAS Consultation Mechanism was adopted by the 7 ITTAS countries in March 2015 in Abuja.

In order to achieve this output, i) the regional players in the management and development of water resources, including the NBA, the IAS/ITTAS Consultation Mechanism, together with national actors, will be assessed in terms of their mandates, legal status, capacities, and priorities and ii) different options for the integrated management of surface and ground water in the immediate, short and long-term will be tabled and assessed. "Immediate" refers to the initial years of this study, for the compilation of

	<p>the TDA and SAP for the ITTAS, bearing in mind that this is already an integrated study (not just for the aquifer), and then for implementation of the rest of the project, in particular Component 2, which includes a project specifically focused on groundwater and the conjunctive management of surface and ground water</p>
<p>3. The present project proposes actions delivered through four components, STAP's advice is set out below:</p> <p>Component 1 focusing upon improved knowledge and capacity to conjunctively manage of surface and ground waters appears in general scientifically sound, but the project brief should describe more objectively what is required to "establish a sound understanding of the ITTAS groundwater resources and their linkages with surface water systems to support IWRM processes in the Basin.", i.e. what is the likely minimum effort required to obtain adequate data, the description should be formulated to help others to design similar projects</p>	<p><i>Output 1.1.1 concerns the modelling and associated data collection exercise that is required in order to achieve a scientifically sound TDA for the ITTAS. The overall approach the modelling is included in the Project Document. It is important to stress that the modelling experience gained on the IAS will be useful in ensuring the efforts are not wasted and are well directed. It is clear that data are inadequate and the work under this output will include the implementation of several (+/- 30) gauging stations. These will mainly comprise rainfall and groundwater monitoring stations. All of these data and especially historic data will be used for calibration of the model. However it should be stressed that recalibration and fine-tuning of the model will have to be repeated from time to time as the available database improves.</i></p>
<p>Component 2 supporting the NBA Shared Vision and implementation of the Niger Basin SAP looks to be a useful set of community based actions proposed. However, as presented in the PIF, the outputs proposed are not coherent regarding overall expected impact at aquifer or basin scale; neither do they, with the exception of Output 2.4, appear to be directly aimed at barrier removal. The project preparation phase should carefully examine these points and re-focus the Component as necessary focussing on groundwater management issues to ensure learning during project implementation.</p>	<p><i>The activities of Component 2 will play a major role in the removal of Barrier 4, Poor Management of natural resources. It will also play a role in removal of Barrier 3, lack of sustainable financing mechanisms.</i></p> <p><i>The target areas for Component 2 have been chosen with the most critical of the Niger basin's long-term environmental quality objectives (LTEQOs) in mind (aquatic environment, mountain forest ecosystems and protected areas). The proposed projects will demonstrate how natural resources in these critical areas should be managed and the communities will take over these management practices, thereby directly contributing to the removal of this barrier.</i></p> <p><i>The design of the demonstration projects is based on several project planning and design principles , many of which reflect the importance of socio-economic development and/or livelihood enhancement. Communities will effectively be encouraged to take up better natural resource management practices by the fact that doing so will lead to better livelihoods. This, in itself is a sustainable financing mechanism.</i></p>
<p>Component 3 is particularly welcome and picks up on what is noted in the SAP; the focus on partnership with industry and establishment of clear standards and good practices should be an effective demonstrator of the potential to engage with the wider business community in the</p>	<p><i>Noted.</i></p>

region and bringing in UNIDO expertise.	
Component 4 focuses on capacity building and policy support. The former is clearly appropriate and welcome. Policy support for conjunctive management of surface and ground waters is essential and the identified outputs would be expected to contribute to the resolution of this challenge, however, as described in the PIF Output 4.2 may not be sufficiently influential to resolve it.	<i>See text above in response to Point 2.</i>
4. STAP has noted above that a similar initiative is underway in the SADC region (GEF ID 4966), with a range of expert inputs that should clearly complement the identified sources of expertise for the proposed project. The project developers are encouraged to share scientific and technical approaches for example the SADC project's Shared Aquifer Diagnostic Analysis to complement GEF's TDA and in particular, policy information with that project with a view to formulating an Africa-wide protocol for governance and management of ground/surface waters possibly linked to the AU that has as its mandate to coordinate and support efforts of Regional Economic Commissions and other regional institutions.	<i>The SADC project has been reviewed and indeed it will be useful to share not only scientific and technical approaches, but also on institutional aspects. Component A of the SADC project on "Strengthening institutional capacity for sustainable groundwater management" is an important part of the SADC project. It has been noted that the project will develop a TDA and SAP to develop conjunctive management solutions as well as mechanisms for data collection and sharing in the Ramotswa Dolomite Aquifer shared by Botswana and South Africa.</i>

No comments received from Agencies or Council.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS⁹

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

PPG Grant Approved at PIF: \$300,000			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Technical inputs (international and local consultants)	157,000	92,670	64,330
Translation	13,000	7,240	5,760
Stakeholder Consultations	125,000	94,235	30,765
Printing	5,000	0	5,000
Total	300,000	194,145	105,855

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.

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

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

N/A



Empowered lives.
Resilient nations.

United Nations Development Programme

Country: Regional - Governments of Algeria, Benin, Burkina,
Cameroon, Chad, Cote d'Ivoire, Guinea, Mali, Mauritania, Niger,
Nigeria,

PROJECT DOCUMENT

Project Title:	Improving IWRM, knowledge-based management and governance of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (ITTAS)
UNDAF Outcome(s):	n/a (This is a regional initiative.)
<p>UNDP Strategic Plan Environment and Sustainable Development <u>Primary</u> Outcome: Outcome 2: Citizen expectations for voice, development, the rule of law and accountability are met by stronger systems of democratic governance</p> <p>Output 2.5. Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use, and access and benefit sharing of natural resources, biodiversity and ecosystems, in line with international conventions and national legislation</p> <p>UNDP Strategic Plan <u>Secondary</u> Outcome: Outcome 1: Growth and development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded</p> <p>Output 1.3. Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste</p>	
Executing Entity/Implementing Partner: Niger Basin Authority and UNIDO¹	
Implementing Entity/Responsible Partners:	
<p>Brief Description</p> <p>This project supports governance and knowledge management for ecosystem-based management for conjunctive and integrated water management within the Niger Basin and ITTAS. It will make best use of i) existing knowledge of the surface water systems, improved understanding of groundwater systems (to be achieved under this project) and</p>	

¹ A separate project document is developed for the UNIDO-implemented part of the project.

of the linkages and connections between the ITTAS and the Niger Basin systems, and ii) as a result of a governance system which treats the two apparently superimposed systems as the one interconnected it actually is. The establishment of an efficient governance system of the transboundary water resource is supported by the strengthening of existing institutions and regulations to govern the management of groundwater and surface water on local, national and regional levels.

Programme Period	2014 - 2018	Total resources required	\$ 915,897,125
Atlas Award ID	00096687	Total allocated resources	\$ 915,897,125
Project ID	00100628	Regular	\$120,000
PIMS	4798	Other	
		GEF	\$6,125,000
Start date	Feb 2018	Gov, NBA and OSS	\$ 895,879,707
End Date	Feb 2023	UNDP (parallel)	\$ 13,772,418
	(60 months)		
Management Arrangements	IGO Implementation		
PAC Meeting Date	April 2016	TOTAL	\$ 915,897,125

Agreed by NBA (Executing Entity/Implementing Partner):

Name (Print) and Title	Signature	Date/Month/Year
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Agreed by (UNDP):

Name (Print) and Title	Signature	Date/Month/Year
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Abbreviations and Acronyms

ACMAD	African Centre of Meteorological Applications for Development
AMCOW	African Ministers' Council of Water
AfDB	African Development Bank
AGRHYMET	Agronomics Hydrology Meteorology
AWF	African Water Facility
BADEA	Banque arabe pour le développement économique en Afrique / Arab Bank for Economic Development in Africa
BMZ	Bundesministerium für Zusammenarbeit (Federal Ministry for Cooperation)
BOAD	West African Development Bank
CBD	Convention on Biological Diversity
CI	Continental Intercalaire
CICOS	Commission International du Bassin Congo-Oubangi-Sangha
CT	Continental Terminal
CWM	Conjunctive Water Management
DB	Database
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EMA	Environmental Accounting System
EMS	Environmental Management System
ESMP	Environmental and Social Management Plan
EST	Environmentally Sound Technology
FCFA	African Financial Community Franc
FFEM	Fonds Français pour l'Environnement Mondial (French Global Environment Facility)
FOREAU	Forum for Water Users
FP-SAP	Funding Plan for the Strategic Action Program
FYP	Five Year Plan
GEF	Global Environmental Facility
GICRESAIT	Gestion Intégrée et Concertée des Ressources en Eau Systèmes Aquifères d'Iullemeden, de Taoudeni/Tanezrouft et du Fleuve Niger/ Integrated and Concerted Management of the Water Resources of the Iullemeden, Taoudeni/Tanezrouft Aquifer System and the Niger River
GIS	Geographic Information System
ICDCS	Permanent Inter-State Committee for Drought Control in the Sahelian Zone
IAS	Iullemeden Aquifer System
INGO	International Non-Governmental Organization
IP-SAP	Investment Plan for the Sustainable Development Action Plan
IRD	Research Institute for Development
IUCN	International Union for Conservation of Nature
ISARM	Internationally Shared Aquifer Resources Management (UNESCO&IAH initiative)
ITTAS	Iullemeden / Taoudeni-Tanezrouft Aquifer system
IWRM	Integrated Water Resource Management
KFW	Kreditanstalt für Wiederaufbau
LTEQO –	Long-Term Environmental Quality Objective
M&E	Monitoring and Evaluation
NAP	National Action Plan
NAP-CD	National Action Plan to Combat Desertification
NBA	Niger Basin Authority
NBA-RAG	NBA Regional Advisory Group
NBO	Niger Basin Observatory
NEAP	National Environmental Action Program
NEPAD	New Partnership for Africa's Development
NFP	National Focal Point
NFS-NBA	National Focal Structures of the NBA

NGO	Non-Governmental organization
NIA	National Implementing Agency
NNPC/Shell	Nigerian National Petroleum Corporation/Shell
NRC	Niger River Commission
NRM	Natural Resource Management
NTT	National Technical Team
OPEC	Organization of Petroleum Exporting Countries
OSS	Sahara and Sahel Observatory
POPs	Persistent Organic Pollutants
PRSP	Poverty Reduction Strategy Paper
RAG	Regional Advisory Group
RCUNB	Regional Coordination of Users of the natural resources of the Niger Basin
RECP	Resource Efficient and Cleaner Production
RG	Revenue Generation Actions
RLWDT	Reversing Land and Water Degradation Trends in the river Niger Basin
SAP	Strategic Action Program
SCBA	Strategic Capacity Building Action
SCP	Silting Control Program
SCP-MP/NG	Silting Control Program Master Plan for the Niger Basin
SDAP	Sustainable Development Action Plan
SLM	Sustainable Land Management
SPDC	Shell Oil Development Corporation
SIU	Spatial Integration Unit
SWC/SDR	Soil and Water Conservation/Soil Defence and Restoration
TDA	Transboundary Diagnostic Analysis
TEST	Transfer of Environmentally Sound Technology
ToR	Terms of Reference
TPR	Terminal Tripartite Review
TTAS	Taoudeni-Tanezrouft Aquifer System
TTR	Tripartite Review
UEOMOA	West African Economic and Monetary Union
UNCCD	United Nations Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
UNDP-CO	United Nations Development Programme – Country Office
UNDP-RCU	United Nations Development Programme – Regional Coordination Unit
WB	World Bank

1. Situational Analysis

1.1. Description of Niger Basin and ITTAS (context)

The limits of the Niger River Basin are usually shown as indicated in Figure 1-1 taken from the NBA's Investment Plan for the Strengthening of Resilience to Climate Change in the Niger Basin. These are generally taken as the hydrographic limits for the basin as defined by the topography.

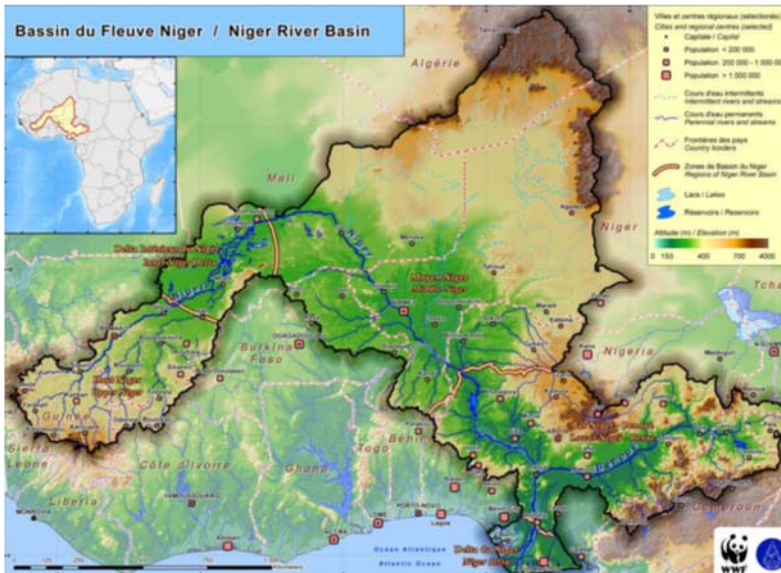


Figure 1-1: The Niger River Basin (WWF)

The surface water resources of the basin are linked to major groundwater systems which do not share the same geographical location although there are major overlaps. The Iullemeden and Taoudeni/Tanezrouft Aquifer Systems are shown in Figure 1-2 overlain on the Niger River Basin. As can be seen, the Taoudeni/Tanezrouft Aquifer lies largely outside the limits of the Niger River Basin despite being linked to both the Iullemeden Aquifer and the Niger River system.

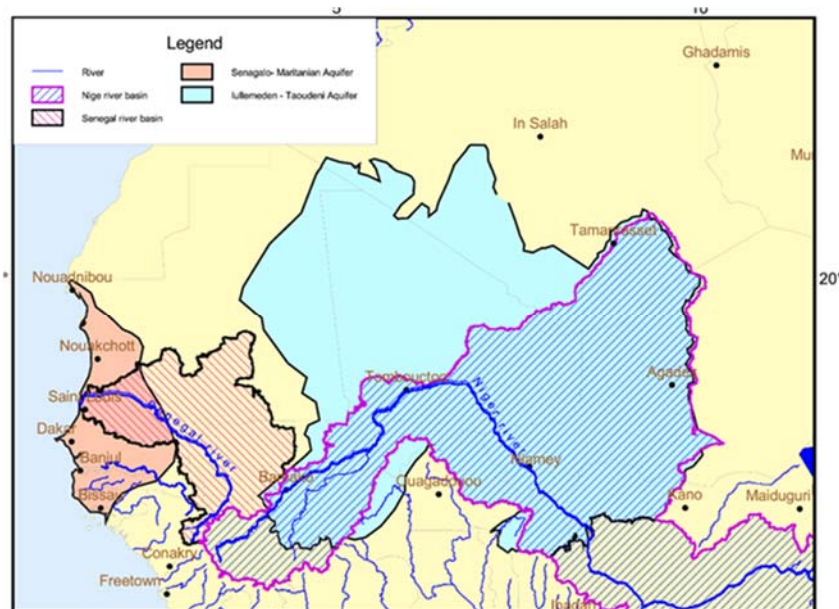


Figure 1-2: The ITAS system overlain on the Niger River Basin and implicated countries

The geographic scope of this study and GEF intervention covers the whole area as covered by the ITAS and Niger River Basin. The countries which share this enlarged area are the nine NBA member countries, Benin, Burkina, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Niger and Nigeria, plus Mauritania and Algeria as indicated in Figure 1-2.

The Niger River Basin, as defined in Figure 1-1, covers an area of over 2.2 million km², including approximately 1.5 million km² of hydrologically active basin spread across the nine NBA member countries². Its geographical coverage, which includes vast desert areas, is characterised by the presence of wide valleys, flood plains and areas of swamp (NBA, 2007). The Niger River rises in the Fouta Djallon Highlands in Guinea, and before it enters the Inner Delta in Mali, its average annual flow is 1,426 m³/s. Its main tributary is the Benue, which rises in Cameroon, and makes its confluence in Nigeria. Although the Benue contributes 50 percent of the Niger's flow, the hydrological significance across the Basin is lower as it only flows through one country before joining the Niger River. The Basin encompasses several climatic zones, and can be divided into four distinct hydro-geographic sub-systems:

- The Upper Niger extends over approximately 140,000 km² and contains four (4) main tributaries, the Tinkisso, Milo, Sankarani and the Nianadan Rivers. The only significant control structure here is the Selingué Dam on the Sankarani River, a tributary of the Niger. This single purpose hydroelectric dam regulates approximately five percent of the average upstream volumes.
- The Inner Delta in Mali comprises a complex and geographically extensive system of influents, lakes and floodplains that have undergone significant development. The inland-delta is subject to substantial seasonal and annual variations depending on inflows from the Upper Niger River

² Algeria is connected to the basin through ephemeral rivers, which occasionally contribute small proportions of flow to the Niger drainage system, and is not a member country of the Niger Basin Authority.

and the Bani River. The inundated area has decreased, 63%, from 35,000 km² in 1967 to 9,500 km² in 1984.

- The Middle Niger covers 900,000 km². Upstream of the Niger Republic, the river receives inflow from tributaries in Burkina Faso, which include the Garouol, Dargol and Sirba Rivers. Navigation is difficult due to rapids. Flows in the Middle Niger are significantly affected by the outflows from the Inner Delta. Mean annual flow at Niamey between 1971-2000 is a third less compared to the flows between 1929-1970. This reduced flow has resulted in earlier and shorter floods.
- The Lower Niger has a catchment area of 450,000 km² and receives several major tributaries including the Sokoto, Kaduna and Benue Rivers. The mean average runoff downstream of the Kainji and Jebba Dams is 1,454m³/s and rises to 5.590m³/s after the confluence with the Benue River.

The Iullemeden-Taoudeni/Tanezrouft Aquifer System (ITTAS) covers an area of approximately 2.5 million km² and extends over seven countries. The ITTAS includes three sub-aquifers, the Iullemeden aquifer, and the Tanezrouft and Tanoudeni aquifers. There is a strong hydrological and hydrogeological linkage between the Tanezrouft and the Tanoudeni aquifers, which is why they are considered as one aquifer, the Tanoudeni/Tanezrouft aquifer system (TTAS)

- The Iullemeden Aquifer System (IAS), a sedimentary ground water basin, is situated in the arid and semi arid zone and covers an area of 525,000 km², shared between Niger (434 000 km²), Nigeria (60,000km²) and Mali (31 0004 km²). It also includes small parts of Algeria, Burkina Faso and Benin.. The IAS consists of a series of interconnected groundwater layers, of a depth ranging from 100 to 2000 m. The total exploitable reserves are estimated at 5,000 km³, (OSS, 2010) which renders the IAS a resource of enormous strategic importance that equals the total Niger river flow in 50 years. The IAS has an appreciable contemporary recharge, mainly due to seasonal infiltrations from river valleys and wetlands connected to the aquifer system. The total current water extraction from the IAS, mainly for irrigation purposes, is estimated at 50 million m³ per year in Niger, and the same in Nigeria. There are several recorded wells and boreholes, most of which reaching a depth ranging from 40 to 100 m.

The boundaries of the IAS are defined by the surrounding major mountain ranges with the Air in the north and the Jos Plateau in Nigeria in the south. To the west, in Mali and Niger, the system is bounded by the Hamadien Sandstone and may be connected to the Tamesna extension basin to the west of the Adrar highlands through the GAO Trench. In the southwest, the basin limit follows the basement range along the River Niger. In the east, along a line from the Jos Plateau to the Air massive, the basin is partly separated from the confined aquifers in the Chad Basin by the south-north Continental Dorsal.

- The Tanoudeni and the Tanezrouft Aquifer (TTAS) comprise one geological unit. The intracratonic Taoudeni Basin³ extends over 2,000,000 km², with 360,000 km² located in Algeria, 500,00 km² in Mauritania and 1,140,000 km² in Mali. Sediment thicknesses can reach over 3,000 m, even up to 6000 m in some places, but the average thickness is about 1250m. Besides groundwater, also two potential petroleum systems, Late Precambrian and Paleozoic, have been defined.⁴

3 Amadou Ibrahim: Petroleum Assessment of the Intracratonic Tanoudeni Basin in Mali. Undated. <http://www.cprm.gov.br/33IGC/1203319.html>

4 Ibid.

The groundwater resources of the Niger Basin are not sufficiently studied at the basin-wide level, notably because the resources for putting in place monitoring systems are limited, and because they have conventionally been seen as local resources, represent a critical issue for the population. The challenges for the basin in terms of the management of groundwater resources are:

- Acquirement of knowledge at the basin-wide scale, notably in terms of recharge rates and hence the sustainable exploitability of the resources,
- The putting in place of an international management system of these groundwater resources since they represent a non-negligible part of the water balance, with the potential for the return of water stored during the wet season to the surface water resources in the dry season,
- Intensification of the exploitation of the resource, in a sustainable manner, in order to permit the supply of drinking water for all inhabitants of the basin.

Modelling work carried out in order to inform the TDA for the IAS quantified the level of exchange between surface and groundwater systems. On average, there is an exchange of 4.79 m³/s between the IAS and its related surface water systems (River Niger, Dallols and River Rima discharges into the surface water network. These interlinkages and interdependency clearly highlight the need to manage surface and groundwater in an integrated manner.

1.2. Institutional Context

1.2.1 Transboundary and Regional/international Organisations

The main transboundary institutions engaged in the project can be described as follows:

- **Niger Basin Authority:** The Niger Basin Authority (NBA) is entrusted with the harmonization and coordination of national water resources development policies of the Niger Basin. The NBA is an inter-governmental river basin organization with the mandate to promote cooperation among the nine member countries and to ensure the integrated development of the Niger basin across the domains of energy, water works, agriculture, livestock farming, fisheries and aquaculture, forestry and timber, transport and communication and industry. Since around 2000 the cooperative framework for the Basin was gradually strengthened by the Heads of State of the nine riparian countries and NBA's Technical and Financial Partners (TFP) under the "Shared Vision Process". The TFP of NBA signed in 2004 in Paris a "Cooperation Framework for NBA Partners". Since then the NBA has made significant progress in firmly establishing itself as the Basin's Authority responsible for the transboundary management and sustainable development of water resources. The NBA is responsible for implementation of the Sustainable Development Action Plan (SDAP), along with an 8 billion USD Investment Program (IP) over 20 years (or more). The sustainable development and management of the basin's water and associated natural resources is guided by the Water Charter for the Niger Basin, as a mechanism to address regional development issues through a basin-wide investment framework for developing infrastructure, reducing poverty and promoting growth.

It is important to note that the NBA has no sovereign power over resources or management, and therefore all regulation must be imposed by individual sovereign governments. The National Focal Points of the NBA will therefore play the role of national representation in Component 4 of the project.

As already discussed, the ITTAS covers parts of countries which are not members of the NBA.

- **Tripartite Consultation Mechanism (Mali, Niger, Nigeria).** A study funded by FAO (Ref) provided much of the detail behind the formation of the Consultation Mechanism. In proposing the Consultation Mechanism, the study analysed existing institutions to see if they could play a role. These included:
 - **OMVS and LCBC.** It was concluded that these institutions have nothing to do with the IAS. In view of the interconnectivity of the overall ITTAS there is a valid argument for inclusion of the OMVS given the fact that much of the Senegal River Basin overlays the TTAS.
 - **The Lipton Gourma Integrated Development Authority.** It was pointed out that this authority deals with integrated development and that management of the resources of the IAS does not fall within its mandate
 - **Niger/Nigeria joint Commission.** It was concluded that the mandate of this organisation was the one closest to the IAS management requirements, “as it is not limited to surface water” (see point below on NBA)
 - **Technical Consultative Committee between Niger and Mali.** This is a bilateral entity and deals with surface water only
 - **NBA.** It was concluded that the NBA was unsuitable because of its size and “*in addition, the NBA is responsible for surface water only*”. It is unclear on what this final conclusion was based. While the NBA can arguably be criticised for having paid less attention to groundwater, it is clear from the Water Charter and other earlier documents that groundwater management is in fact part of the NBA’s responsibility.

Based on this analysis and other considerations it was concluded that existing “agreements and interstate institutions deal with the IAS only marginally and indirectly” and that “therefore, it is necessary to establish a specific consultation mechanism for the IAS. This conclusion was supported at a stakeholder seminar.

To what extent the coordination mechanism has been formalised and made operational will be analysed under Component 4 of this project in order to understand how such a mechanism could play a role in governance of the shared Niger Basin and ITTAS resources.

- **The Iullemeden-Taoudeni/Tanezrouft Aquifer System (ITTAS) Consultation Mechanism.** The project for “the Integrated and Concerted Water Resource Management of the Aquifer Systems of Iullemeden, Taoudeni/ Tanezrouft and the Niger River (GICRESAIT)” launched in 2013 a study on the legal and institutional framework for the establishment of a consultation mechanism extended to all seven riparian countries (Algeria, Benin, Burkina Faso, Mali, Mauritania, Niger and Nigeria) states bordering SAIT.

The results of this study were presented at the second ministerial meeting of ITTAS water resources, held in Abuja on March 28th, 2014. This meeting concluded in an agreement on the Memorandum of Understanding establishing a Consultation Mechanism for Integrated and

Concerted Management of the ITAS Water Resources⁵. Ministerial Declaration was adopted⁶.

The objective of the Consultation Mechanism is to promote and foster cooperation between the Signatory States to this memorandum of⁷ Understanding and those that will join, based on solidarity and reciprocity for a sustainable, equitable, coordinated and collaborative use of the ITAS water resources.

In this regard, the Consultation Mechanism aims to:

- To promote an integrated and concerted management of the ITAS water resources,
 - To strengthen solidarity and promote cooperation in communication and mutual information in order to facilitate the joint identification of risks to which the ITAS water resources are exposed;
 - To facilitate the joint management of those risks,
 - To formulate the rules relating the conservation and protection of the environment and aquatic ecosystems against degradation and pollution, in accordance with the objectives of sustainable development;
 - To facilitate the sustainable development of the ITAS resources.
- **Sahara and Sahel Observatory (OSS).** The OSS is an international organisation with a membership comprising countries, sub-regional organisations, UN organisations and NGO. Its work is focused on the water and land axes in North, East and West Africa. The OSS is a widely recognized organisation in the fields of shared aquifers management, natural resources monitoring and climate change adaptation in the peri-Saharan region. The OSS supported the drawing up of the TDA for the IAS and was instrumental in making the Consultation Mechanism operational. By June 9th 2009, Ministerial meeting was held in Bamako. Mali, Niger and Nigeria agreed on the Memorandum of Understanding establishing a Consultation Mechanism for the management of the Iullemeden Aquifer System (IAS)⁸.

⁵ Memorandum of understanding for the Establishment of a Consultation Mechanism for the integrated Management of the Water Resources of the Iullemeden, Taoudeni/Tanezrouft Aquifer Systems (ITAS) – Algeria, Benin, Burkina Faso, Mali, Mauritania, Niger and Nigeria (OSS, March 28th 2014)

⁶ The Abuja Declaration of the Ministers in charge of Water Resources of the countries sharing the Iullemeden and Taoudeni/Tanezrouft Aquifer Systems (ITAS), (OSS, March 28th 2014)

⁸ Memorandum of Understanding relating to the setting up of a Consultative Mechanism for the management of the Iullemeden Aquifer System (IAS), (OSS, June 20th, 2009)

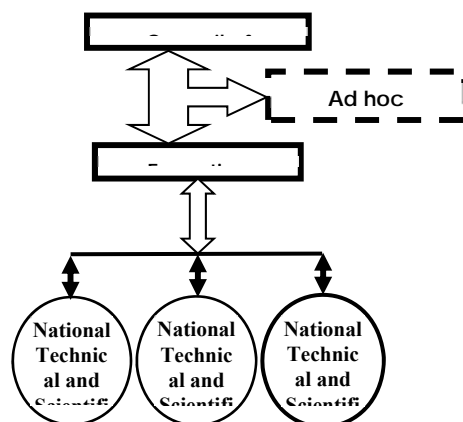


Figure 1-3: Structure of the IAS Consultation Mechanism

Involvement of OSS into the current GEF-funded project on the transboundary resources of the Iullemeden and Taoudeni-Tanezrouft aquifer systems paved the way for a ministerial meeting held in Abuja in April 2014, during which 7 countries pledged to strengthen cooperation and agreed to set up a formal framework for the joint management of their shared water resources. Under this project OSS is mainly concerned with the conjunctive management of underground and surface waters. Most importantly, OSS seeks to follow a transboundary management approach that extends beyond the Niger Basin to encompass the ITTAS.

- **ACMAD and AGRHYMET_Regional Centre (CRA)** are meteorological institutions, one on the continental level, the other on the regional level. Both deliver important climate and meteorological information which can serve as inputs for modelling. Their various services for drought and flood monitoring can be used to assess the impacts of interventions on the status of people and environment after extreme climatic events.
- **CSOs:** CSOs will support the project as partners for monitoring water management, pollution and Corporate Social and Environmental Responsibility.

1.2.2 National and Local level institutions

There are a number of national and level institutions. Clearly there is a long list of government institutions responsible for the management of water and related resources and the environment within each country. Similarly, there is a number of government and parastatal institutions responsible for the planning and development of water resources. These are not listed here.

In addition, there are a number of civil society organization (CSOs) and Community-based organization (CBOs):

- **National Coordination of Users/Regional Coordination of Users of the basin's natural resources:** CSOs in the Niger Basin are organized into nine (9) National Coordination of Users and one Regional Coordination of Users. They have a central role in coordinating and implementing Component 2 of this GEF-funded project. They will mainly contribute to the implementation of the activities through advocacy, knowledge management, communication and coordination through establishing lateral linkages with local communities and vertical linkages with National Governments and NBA.

- **CBOs:** The participation of communities is critical to the success of the project. Communities will be involved into Component 1 through the contribution of local knowledge and within the development of SAP, as well as in the decision-making process for future actions. The implementation of IWRM will be community-driven in Component 2, who will be the key implementers for all community based actions. They will also be participants in capacity building interventions of Component 4.

1.2.3 Private Sector

The private sector has hitherto played a very limited role in the management of water resources. It has traditionally played an active role in the development of water resources but management of resources has generally been oriented towards short-term gains or in reaction to laws and government and sectoral policies. The concept of user responsibility is not developed and efforts to introduce concepts such as user-polluter pays have not made significant progress.

The private sector, notably in agriculture, industry, mining and fisheries, at both commercial and subsistence levels undoubtedly has an important role to play in ensuring that development is sustainable. It is important for the private sector to appreciate that a commitment to sustainable development does not need to mean reduced profit, especially over the medium and long-term.

It will be important to engage the private sector in the project by making them responsible for the management of their water resources. An important aim of the project should be to encourage this through a “win-win” approach in which both the subsistence and commercial components of the private sector become willing partners in the implementation of best water and natural resources best practice because doing so yields tangible benefits.

1.2.4 Conclusions

The institutional context of the project is complex and involves a wide-range of organisations from the community level right up to the transboundary level. It will be important to make use of and build on existing stakeholder and communication structures.

1.3. Threats to the environment and ecosystems and Underlying Causes

1.3.1 Climate change

Climate change is both a threat and an underlying cause. It is a threat as a trend to higher aridity reduces the overall water content in the system through decreased precipitation, increased evaporation and reduced groundwater recharge. As a cause, these changes put pressures on human health, food security and livelihoods in general.

The rainfall regime of the ITTAS and West Africa is determined by the seasonal movements of the intertropical convergence zone, the dynamics of the trade winds and hot and dry breezes from the North East, and humid air masses from the zones. This causes a clear gradient, with most arid zones in the North, towards higher precipitation rates in the zones, so that the basin can be subdivided into four climate zones:

- the Sahara zone with a desert climate (less than 150 mm) ;
- the nomadic Sahelian zone or pastoral zone (between 150 and 300 mm)
- the sedentary Sahel zone (between 300 and 600 mm) ;
- the Sahel-Sudanese zone (between 600 and 800 mm).

The two latter zones cover the “crop zone”, where rainfed crops are cultivated, including millet, sorghum, corn, niébé, groundnut and cotton.

The Niger basin is, and has long been, susceptible to high levels of climate variability and even geographical shifts in climatic regimes. Effective adaptation to climate change has always been important. However, uncertainty about major climate shifts is still high. Tarhule et al (2013) have shown that an abrupt change occurred in the rainfall and streamflow records for all parts of the Niger basin during the late 1960s and climate change and variability showed its impacts during the large West African droughts in 1968 – 1972, 1972 – 78, 1982 – 84, and in 1997, when isohyets shifted by between 100 and 200 km southwards.

Global circulation models project quite modest changes in precipitation over the Niger River Basin and ITTAS (between – 6% - 7%), but a major increase in temperature.

1.3.2 Land degradation and land-use change

The issues of land degradation and land use change are central to the theme of the integrated management of surface and ground water. The linkages between surface and ground water are well illustrated by the impacts of land degradation. Deforestation and poor farming practices, together with the degradation of protected areas particularly in source areas results in lower rates of retention of precipitation. This results in rapid runoff and reduced groundwater recharge. The impact on the surface water regime is a decrease in base flows during the dry season and an increase in the magnitude of flood events. Sediment loads are also increased. The impact on groundwater is that infiltration and hence recharge is reduced.

The importance of the conservation of forests and protected areas, together with improved farming practices and more appropriate land use are central to the objective of this project and the projects proposed in Component 2 of this proposal are aimed at supporting and indeed mainstreaming these goals.

The extensive clearing of the permanent vegetation cover in only a few decades has changed the recharge patterns to the upper free aquifer in a way that water is lost from the vadose zone, but seasonally enriched in surface and groundwater:

- The loss of land productivity has caused deterioration of the hydrological status of the vadose zone due to the loss of organic substance and its water storage capacity after forest or pasture conversion. This has also increased sediment load of rivers.
- A particular phenomenon of runoff is known as the Sahelian paradox. It has been noticed that the discharge of rivers sometimes increases⁹, even when precipitation declines. This is caused

⁹ Close to Nigeria, the Mountséké valley experienced a return of seasonal river flow conditions over 70 km in the 1990s; this abrupt hydrological change occurred in response to land clearing and higher runoff to the valley. Westwards of the IB, increasing river discharge in response to a decreased vegetation cover was shown to have occurred during the 1970s–1990s decades over the 39,000

by the infiltration inhibiting properties of silt laden flows¹⁰ Increased levels of sediment transport and particularly the fines is caused by soil degradation due to poor land-use practices.

- Another related phenomenon occurs in some areas where groundwater tables are recharged as a result of increased runoff¹¹, which has in particular been observed in the CT. Water tables recorded in 2010 were highest than ever, where measured rise intensities range from 0.1 m/a to up to 0.4 m/a¹² and were apparently driven by changes in land use.

1.3.3 Changes to hydrological regime

Changes to the hydrological regime have been the result of a combination of climate variability and climate change, increasing consumptive water demand, land degradation and land use change.

The **Niger River** has faced substantial reductions in its flow volumes in all its compartments. In the Lower Niger, including the Benue Basin, rainfall has recovered to within about 5% of pre-1970 levels, to an extent ending the period of below average rainfall conditions that have persisted during the 1970s and 1980s. In contrast, annual rainfall is still well below the pre-1970 values in the Upper Niger Basin. This regional disparity is significant since the Upper Niger sub-basin is the water tower for the Niger River. Changes in the last century can be summarised as follows:

- **Upper Niger:** The average inter-annual flow volume at Koulikoro of 1,350 m³/s (1929-1970) or 42 billion m³/year has decreased to 1,039 m³/s (1971-2002), a decrease of 23%.
- **Inner Delta:** The significant losses of water, in particular to the ecosystems of the Inner Delta (principally by evaporation and infiltration) reach approximately 20 billion m³ in a wet year, 13 billion m³ in an average year and 11 billion m³ in a dry year. These are far from offset by contributions from the zone itself, which is extremely modest (direct precipitation and some small inflows). In addition to natural losses, a further 3.2. billion m³ are used for irrigation, mainly by the Niger Office). This can be as much as 12% of the flow volume in a dry year.
- The average flow at Niamey between 1971 and 2002 was only 704 m³/s, compared to 1062 m³/s between 1929-1970, a decrease of around 34%. This was accompanied by severe losses of wetland biodiversity in the Middle Niger until the Maritime Delta During dry season, flows can reach very low levels, almost dying up..
- **Lower Niger:** Like the Upper Niger and the Middle Niger, the Lower Niger has experienced a significant decrease in flow. The average for 1929 – 1970 was 6.055 m³/s compared to 5.066 m³/s (1971-2001). Problems of surface water availability arise mainly in the upper Bénoué, where severe water shortages are recorded ¹³.

km2 of the Sirba watershed (Amani and Nguetora 2002) and in the 21,000 km2 of the Nakambé watershed (Mahé et al. 2005); (Favreau 2010).

¹⁰ Crerar et al (1988)

¹¹ Favreau et al (2010)

¹² Leduc et al. 2001

¹³ SAP Niger

Groundwater is mainly recharged by precipitation and by leakage from streams and rivers, but factors which threaten the system are in particular abstraction and land degradation including gullying (see Figure 1-4).

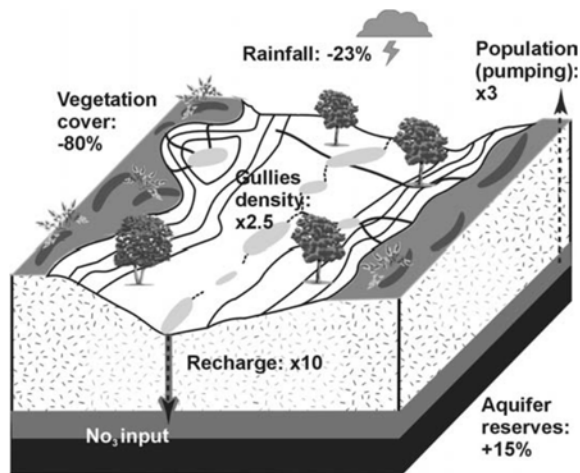


Figure 1-4: Summary of relative changes in groundwater recharge conditions and fluxes in the southwestern part of the Continental Terminal aquifer over 1963–2007.

- **Abstractions.** Modelling results show that the aquifers in the IAS are being exploited using wells at depths of between 40 and 100 m, with a few deep exploratory and production boreholes up to 600 m deep. Extraction rates are generally between 20 and 100 m³/hour. According to estimates, abstraction has exceeded recharge on occasions in the past such as in 1995. Significant current expansion in extractions is taking place mainly in the Southern part of the Mali section, in Southern Niger and in the Sokoto basin in Nigeria. The hydrodynamic model of the IAS has shown through simulations that most acute drawdowns in 2004 occurred in the eastern part of the basin around the Nigerien locality of Birni N’Konni with a maximum of 63 metres. The model’s forecasts for 2025 show an additional ten-metre drawdown in the CI. The risk zones are characterized by important drawdowns caused by an ever rising utilization¹⁴.

The major pressure on water resources is caused by the agricultural sector which uses much more water than the domestic sector, and the extractions from lullemeden for agriculture are assessed to be 50 Mm³/yr in Niger¹⁵ and of the same order in Nigeria¹⁶. The industrial and lining sectors, although having a minimal effect on the availability of water, have a significant impact on water quality. Dams for hydroelectricity might change velocity and gradients of surface water flows in future¹⁷, while industrial pollution will limit the use of water for drinking.

¹⁴ GICRESAIT model and MSP-lullemeden Project

¹⁵ The estimate differs with a factor of 6 from the above estimate of abstractions under the IAS – Niger water balance.

¹⁶ Recent isotope based studies in Sokoto Nigeria supported by IAEA have confirmed that surface water resources and shallow groundwater uses in recharge zones had no recordable impact on the recharge of the deeper aquifers.

¹⁷ Damming of the Goulbi in the 1990s induced a decrease in ephemeral river flow and, consequently, a decrease in the seasonal recharge to the downstream alluvial aquifer. Under “no dam” conditions, erosion was shown to be the main factor explaining the rapid silting up of the economically important Madarounfa lake (100–850 ha), with rapid changes in ephemeral rivers feeding the lake caused by land clearing of five classified forests (46,000 ha). Favreau et al. 2010)

Agricultural abstractions and losses through evaporation can also endanger the maintenance of minimum environmental flows during low water periods which might impede navigation. There are therefore trade-offs between agricultural abstractions and minimum flows for navigation and minimum water requirements for ecosystem services. The main risks will inevitably occur downstream..¹⁸.

The major impacts identified within the ITTAS by the GICRESAIT project due to water abstractions are

- significant reductions of piezometric levels (on an average 2m in the CT and 10 m in the CI), generating an increase in the thickness of the unsaturated area zone have contributed to a reduction in the productivity of land in some areas and to desertification in others.
- Changes to the quality of groundwater resources with impacts on flows and reduced soil moisture
- a fall in artesian pressure in certain zones (Irhazer, south of the IAS) This phenomenon has been reported on artesian drillings tapping the “Continental intercalaire” in Mali and Niger, and/or the Continental Terminal in Niger.

1.3.4 Water Quality and Pollution

Given the ever increasing levels of industrial and mining activities, together with tanneries and others the NBA carried out a study in 2005 on the evaluation of the water quality of the Niger River and in 2010, a study to identify pollution sources which made it possible to set up a network of observers to monitor water quality at the basin-wide scale. The two studies provided the following conclusions:

- The total pollution load is low, but represents a risk in specific locations
- The data used is limited and that further information is required in order to draw conclusions with a higher degree of certainty.

Main sources of pollution were mapped as in Figure 1-5. Details for the rest of the basin are also available.

¹⁸ DNH, 2003

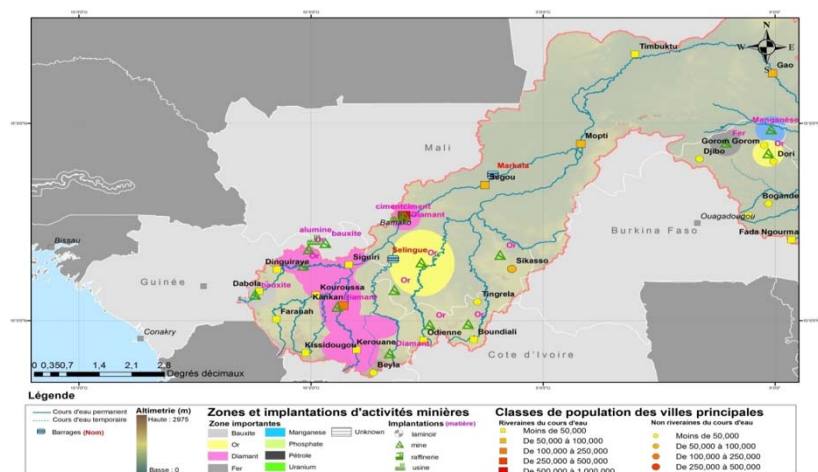


Figure 1-5: Principal sources of Niger River pollution (Western zone – Guinea, Mali, Côte d'Ivoire, Burkina)

As a result of the study, it was also agreed that 164 water quality monitoring stations should be set up, 134 for general monitoring purposes, and 30 for the monitoring of impacts resulting from anthropogenic activities (towns, mines, industries). 22 of these stations were classified as primary and have already been made operational. A shortage of funds has delayed implementation of further phases.

It will be useful, where possible to use some of the existing or proposed stations to monitor the impacts of actions proposed under Component 3 of this project.

The water quality in the ITAS is generally good although there are local risks of salinization and contamination in the surface water and the lower artesian aquifers, mainly in the populated zones of the South, where groundwater table is close to the soil surface and at the highly populated banks of the Niger and the Bani. The presence of fluorine or apatites cause high fluoride contents of water resources, such as the flour apatites in the Continental intercalaire (CI) in the border zone between Niger and Nigeria. This causes osseous and dental fluorosis, in particular among persons aged less than 15 years. Besides, the tapping of highly mineralised deep water during exploitation may affect the quality of water of adjacent aquifers. This is the case of the zone of Dallol Maouri (Niger), where exchanges of water were reported between the superimposed aquifers.¹⁹

Various pollution problems were identified in the SAPs. Pollution is particularly pernicious with groundwater resources where contaminants may reside for long periods of time potentially rendering water sources unusable for decades. Within the ITAS, the CT is affected to the highest degree by pollution in the upper layer, the Cretaceous marine to a medium level, while the lower aquifers are hardly affected.

¹⁹ Guero 2004

The main point sources of pollution as identified from various references and validated during the Inception Workshop in Niamey, Niger (May, 7 – 8, 2015) are consistent with reports from the NBA^{20, 21}.

- **Industrial Pollution.** Along the Niger River, industrial activities are concentrated on block-making factories, agro-food industries (milk production factories, slaughtering houses, oil production factories, soap production factories, etc.), textile industries tanneries and dyeing industries. They are sources of pollution due to the lack of effluent treatment mechanisms. In Nigeria, several large scale industries are developed alongside the river in which they directly reject, without control of prior processing, their industrial effluents: Downstream of the mining area is Bamako, the largest city on the Niger River upstream of Nigeria. There are several industries (textiles, tanneries, slaughterhouse, etc.) in the city discharging to the river their untreated or poorly treated effluents with various types of pollutants.

In the Lower Niger, the States of Niger and Koji host many enterprises with noticeable pollution load to the Niger River. It is estimated that more than 80% of industries discharge their effluent into the environment without pretreatment; whereas, neither the quantity nor the quality of these effluents are known.²².

- **Mining pollution.** In the Upper Niger, mining activities and factories in some of the main towns in Guinea (Kankan, Faranah, Dabola) along the river bank have been identified as some of the major sources of pollution of the Niger River. Mining activities, especially for diamond in Banankoro, have also been associated with major deforestation and land degradation contributing to high organic and inorganic load to the river through runoff. The pollution of the waters in the Upper Niger basin in Guinea is mainly due to the presence of mining industries with chemicals used in the mineral processing (namely cyanide for gold processing). In Chad, gold indexes were found in the alluviums of many rivers and streams exploited by gold washing.
- **Petrol Pollution.** As the SAP for the Niger Basin highlights, the discharge of petroleum products is a major problem in the coastal delta of Nigeria. According to data availed by Shell, between 1991 – 1994, approximately 10 000 barrels of crude oil have been discharged every year.²³ As also new findings of petrol are to be expected, the control of petrol pollution is of paramount importance.
- **Anthropogenic and agricultural pollution.** This is a major pollution type in the ITTAS and the Niger basin. Sanitation sites (latrines, septic tanks), domestic wastes, wastewater, agricultural products (fertilisers, herbicides, pesticides) are resulting in main pollutants of microbiological (viruses, bacteria, protozoa) and chemical (organic, and inorganic of which nitrates and nitrites) character. Organic pollution of surface water is also the cause for the proliferation of aquatic weeds. Contamination resulting from high loads of fertilizers used on irrigation schemes, salinisation and alkalisation affects 7 to 15% of developed land which are in process of being abandoned. In Niger, the zones irrigated in the valleys along the River, in the Dallols and in the vicinity of ponds, are affected by salinisation due to improper drainage, drainage systems and their maintenance of wastewater.

20 Assessment for Monitoring the Water Quality in the Niger Basin, NBA/UNOPS/World Bank, 2005.

21 Study for the establishment of a system for monitoring the quality of water in the Niger basin, NBA/CIDA, 2010.

22Assessment for Monitoring the Water Quality in the Niger Basin, NBA/UNOPS/World Bank, 2005.

²³ SAP Niger

- **Infestations of invasive aquatic weeds.** The river system is infested with invasive aquatic water hyacinth (*Eichhornia crassipes*), water lettuce (*Pistia stratiotes*) and reeds such as *Typha australis* and others. The water hyacinth problem has especially severe impacts on human livelihoods in the River Niger in Mali where human activities and livelihoods are closely linked to the water systems. Other prominent aquatic weeds are water lettuce and water lens. Control methods that are often used include mechanical, chemical and biological measures. However, existing methods have often been insufficient to contain the aggressive proliferation of the weed and viability of its seeds despite substantial monetary investments over the years, mainly due to lack of continued policy and management support by governments.²⁴ Immediate causes of hyacinth proliferation are water pollution, in particular by nitrates, ammonia and phosphates through manure or fertilizers or discharge of municipal wastes.

1.3.5 Socio-economic factors

The basin's population of 130 million is expanding very rapidly and is projected to surpass 180 million inhabitants by 2025 (NBA, 2007). Living conditions are threatened by the extremely variable flow of the Niger River. A long period of low water levels (the annual flow at Bamako between 1970-2005 was over 30% less than that between 1905-1970), linked to falling rainfall, was followed by a period of higher water levels. This led to flooding which caused significant damage in the basin (particularly in 2013 and 2014). Most of the population and the economy of the countries in the Niger Basin rely on agriculture, pastoralism or other means of subsistence based on natural resources, and is directly dependent on the water resources of the Niger River or its tributaries. Fair distribution of the water resources and the preservation of the aquatic ecosystems in the basin, including the remarkable wetlands of the Inner Delta and the maritime delta, are thus two of the greatest challenges faced by the riparian countries of the Niger River and its tributaries

Changes in the hydrological system have also impacted the socio-economic situation:

- About 70% of the 100 million people in the Basin live in rural areas where food security and social well-being are largely dependent on unreliable rainfall and highly-variable river flow patterns, as the main economic activities in the region are agriculture, mostly rain-fed in the wetter south or recessional in the flooded areas as well as nomadic, semi-nomadic or transhumant cattle herding in the North. Millet and maize are grown as subsistence crops, but cash crops are also produced including cotton, groundnut and rice along the water courses, especially alongside the Niger River and the Benue River. Fisheries are also of high importance around lakes and coastal areas.
- Over the last 50 years, the land use in the recharge areas of the ITTAS has changed and affected the recharge to the upper aquifer. With agriculture expanding into marginal low-rainfall areas and resulting land use change in recharge areas and wetlands, the environmental threats and transboundary risks in the IAS are growing. This includes a gradual decline of agricultural productivity in the crop sector accompanied by a shift to more irrigation agriculture by households who can afford this, and a drop of income of stockbreeders, who either expand transhumant movements over longer distances for longer time periods, or have to shift gradually to other income generating activities, which in many cases are less profitable up to the point, that they are hardly able to support the livelihoods of families. This again leads to

²⁴ http://www.unep.org/pdf/UNEP_GEAS_APRIL_2013.pdf

migratory work or migration to other countries. For the water sector the declining water tables raise costs of the water infrastructures due to overuses in non-operating state of drillings, the need to tap deeper and mining of artesian waters. The scarcity of water leads to an increase of labour burdens upon women, who have to cover longer distance for water fetching and on community levels to conflicts around water points and disintegration of village solidarity.

1.4. Barriers and Rationale for GEF Support

1.4.1 Introduction

There are a number of barriers to the conjunctive and ecosystem-based management of the surface and ground water resources of the Niger River Basin and ITTAS. Some of these barriers have been identified a long time ago but remain entirely relevant. With this project which now highlights the importance of the integrated management of surface and ground water, another barrier can be identified, the lack of sufficient knowledge of the hydrogeological and hydrological linkages between IAS and TTAS. Overcoming this barrier is the main aim of Component 1 of the project. The main barriers and their relation to the various components of the project are summarised in the following paragraphs. The way in which the various components will contribute to the overcoming of these barriers provide the rationale for GEF support.

1.4.2 Barrier 1: Limited knowledge:

Limited knowledge has long been a challenge in the management and sustainable development of water resources in the basin. While good progress has been made in collection of surface water information for the mainstream and key tributaries, there are serious gaps for smaller sub-catchments. In addition, the hydrology, both surface and groundwater is not constant as a result of climate change, land degradation and land-use change. Data collection programmes should be as continuous as possible at the required levels of detail in order to overcome this barrier. It should also capture information on land-use change and land degradation. It is important to note that projects (such as this planned under Component 2) depend on data at the small sub-catchment level and this is often not available. An appropriate data collection programme should form a part of each of the demonstration projects in order to overcome this problem before taking to scale.

The water resources of transboundary aquifer systems in West Africa (Senegal-Mauritania, Taoudeni / Tanezrouft, Lake Chad) are generally poorly known and at the same time increasingly threatened by rising demand for water, adverse effects of variability / climate change, degradation of quality due to pollution from various sources and use of deep water which are sometimes highly mineralized. The TDA work carried out for the IAS has provided a wealth of new knowledge but the hydrological linkages between IAS and TTAS and those between the ITTAS and Niger basin surface water resources are not adequately understood. The lack of reliable information on climate changes makes it very difficult for NBA and water managers to assess suitable adaptation options and to develop guidelines and standards for planning and water management purposes.

Component 1 will play a major role in overcoming this barrier by bringing the knowledge of the TTAS up to the same level as the IAS.

1.4.3 Barrier 2: Low Institutional capacity:

There are many legal instruments for water and environment management, but these are still poorly enforced at national level (e.g. Niger Basin Water Charter, the UNGA Resolution 63/124 and draft articles on the law of transboundary aquifers annexed therein), etc.). Moreover, the institutional framework, especially the national focal structures of the NBA, is facing serious problems of limited technical capacity even to manage their on-going planned initiatives. For the NBA, the Environmental Observatory remains an essential tool for ecological and socio-economic monitoring. However, the monitoring and equipment is still too limited to support decision making in the basin management. Finally, civil society remains weakly involved in the management of the basin and community initiatives.

NBA, OSS technical staff and those from national and other institutions will be involved in the proposed Component 1 work in order to contribute to capacity building and the sustained involvement of NBA and OSS national water management institutions in ecosystem-based and integrated management of surface and ground water.

A key part of the proposed Component 2 projects will be capacity-building and experience sharing at the community levels which should significantly improve the involvement of civil society in the conjunctive surface and groundwater management of the basin. This capacity-building will cover all rights holders with emphasis placed on the role of women who are key players in water management.

One of the goals of Component 3 will be to increase water resources management capacity within the private sector through increased social and environmental responsibility

Component 4 will include a number of outputs oriented towards improving institutional capacity at all levels, regional, national and local (including civil society), as well as within institutions of higher learning. A key area to receive attention will be the specific barrier of lack of institutional capacity on the conjunctive management of surface and groundwater. This will include an analysis of institutional structures that may be best placed to take the lead in this area.

1.4.4 Barrier 3: Lack of sustainable financing mechanisms:

The overall cost of SAP implementation in the basin is estimated at 1.6 billion USD. The financing of activities to carry out at short-term (2013-2017) is estimated to be about 500,000,000 USD i.e. 35% of the total funding. Mobilization of funding remains a challenge for SAP implementation given the low levels of development of the basin countries and the poverty of the communities that depend on natural resources of the river.

A key goal of both Component 2 demonstration projects and Component 3 involvement of private sector industry in reducing pollution loads, is that the project objectives are achieved in a sustainable manner, one that generates a “win-win” situation, both for the beneficiaries and the environment.

1.4.5 Barrier 4: Poor management of natural resources:

Poverty, weak technical supervision and lack of adequate means, as well as unsustainable practices of exploitation and management of natural resources are still perpetuated. These include

poor agricultural practices including agricultural extension into protected and/or marginal areas, overgrazing, bush fires, clearing for firewood or construction, misuse of pesticides, etc. These practices, themselves usually driven by poverty, lack of knowledge and access to credit, are the main cause of land, water and ecosystem degradation. The situation is complicated by the region's vulnerability to climate change and variability, which have exacerbated these degradation phenomena due to the decrease in rainfall.

The main aim of Component 2 is to use livelihood-based approaches to promote the sustainable development and integrated management of water and associated natural resources. This approach recognises that the key to improved natural resources management is breaking the vicious cycle of poverty and natural resources degradation.

The central problem of shared aquifers of the West African sub-region is the management of transboundary groundwater hitherto operated in an uncoordinated manner. Although the countries aspire to achieve the Millennium Development Goals²⁵ and other similar initiatives, they recognize the urgent importance to combine their efforts to reduce or control these Transboundary risks, and revise their resource exploitation practices within their borders.

²⁵ MDGs are now replaced with Sustainable Development Objectives (SDOs)

2. Project Strategy

2.1. Main Objectives and Introduction to Project Components

2.1.1 Objectives

The objective of the project is to improve knowledge-based management, governance and resource conservation of the Niger River Basin and the Iullemeden-Taoudéni/Tanezrouft Aquifers (ITTAS), to support IWRM for the benefit of communities and the resilience of ecosystems.

This project will contribute to the attainment of a number SDGs²⁶ namely SDG 6 on clean water and sanitation and in particular target 6.5 related to integrated water resources management at all levels, including through transboundary cooperation (and the related indicators) as well as SDGs related to the improvement of the livelihoods of local communities that are targeted through the project activities.

2.1.2 Project Components

In line with the objectives above and the context provided in the previous chapter, the project has been divided into four (4) components

- **Component 1: Promoting conjunctive management of ground and surface waters.** As indicated earlier, the TDA is only partially complete for the ITTAS (currently covering the IAS only). The main aim of this component is to complete the TDA for the entire ITTAS and develop the ITTAS SAP and NAPs as well. This should be done early on so that the findings can be fully taken into account in other components of the project, in particular defining conjunctive management pilots under Component 2.
- **Component 2: Sharing responsibilities and benefits with local communities, civil society in conserving basin resources, including groundwater.** The purpose of this component is to implement a wide range of community-based projects aimed at addressing many of the key issues and challenges originally identified in the TDA/SAP/SDAP as well as those conjunctive management pilots anticipated to be identified in the Niger and ITTAS TDA/SAP under Component 1.
- **Component 3: Strengthening industries' environmental/social responsibility capacities.** Component 3 aims at encouraging industry to reduce pollution through the adoption of best practices and new technology. A win-win approach is a key driver of this approach with private companies encouraged to invest in environmentally responsible behaviour for and making savings over time, especially since policy and legal changes are expected to increasingly punish environmentally irresponsible behaviour.
- **Component 4: Capacity building and stakeholders involvement in Niger River ecosystem based management.** Component 4 is cross-cutting in nature and is aimed at supporting the required building of capacity to ensure that national policies and institutions are in place towards ecosystem-based management of the Niger River basin.

²⁶ <https://sustainabledevelopment.un.org/?menu=1300>

2.2. Building on Previous Work

2.2.1 Introduction

Understanding the proposed project strategy requires an appreciation of the work that has already taken place in support of Integrated Water Resources Management (IWRM) and/or ecosystem-based management in the Niger River Basin and ITTAS. The proposed project will build on this work. The following non-exhaustive summary sub-section summarises how progress has taken place since the first involvement of the GEF in 2000 leading up to the drafting of this project document.

2.2.2 SAP and SDAP Development for NBA

GEF involvement and a move towards an IWRM-based approach started with the preliminary phase (2000-2002) of the '*Reversing Land and Water degradation trends in the Niger River Basin*' study. The main outputs of this preparation phase project were a preliminary TDA and the identification of a number of pilot demonstration projects. The study covered only the five countries on the mainstream of the Niger River, although all 9 member countries were present at the final workshops in order to facilitate the planned completion of the TDA and SAP under the full-sized project which followed.

In 2002, NBA Member States decided to draft a *Shared Vision* which would consist of making the Niger River Basin '*an area of sustainable development with respect to the integrated management of water resources and related ecosystems so as to improve the quality of life and offer prosperity for the surrounding populations*'. The shared vision process encompasses several objectives. The first is political, to formulate a statement on sustainable development of the Niger Basin to be adopted by the Niger Basin heads of state. The second objective is operational, to prepare the Sustainable Development Action Plan (SDAP) for the Niger Basin. The SDAP is seen as an appropriate instrument to realise countries' commitment to address the challenges of the Basin. It includes an innovative planning and priority-setting approach to define the development opportunities in which member countries can jointly participate. The Shared Vision's third objective is financial, to mobilize resources from both member countries and international donor partners to implement the SDAP.

The next phase of the GEF supported '*Reversing Land and Water degradation trends in the Niger River Basin*' project was also executed by the UNOPS and the NBA and implemented through the World Bank and UNDP (2005 – 2012). It identified and analysed transboundary environmental issues in the Niger Basin through an in-depth Transboundary Diagnostic Analysis (TDA) and supported the NBA member states to collectively agree on a set of transboundary priorities for the environment of the Niger River basin. The set of priorities was published as the Strategic Action Program (SAP) and endorsed by the NBA Council of Ministers in 2010. The project also funded pilot programs that involved grass root communities and gave them the opportunity to develop multiple actions, through pilot demonstration projects and micro-grant funded projects, embedding the principles of bottom-up planning and communities driving the actions.

In parallel with the work on the TDA and SAP for the GEF '*Reversing Land and Water degradation trends in the Niger River Basin*' project, work started on the "Sustainable Development Action Plan" (SDAP) in 2005. The objective of the SDAP were:

- To formulate an action plan (diagnosis and master plan for the development and management of the basin) to support the sustainable development of the River Niger basin
- To give concrete content to the principles of the “Paris Declaration” taking especially into account the geopolitical aspect, the priorities of the member countries and the subsidiarity principle
- To translate the shared vision by 2025 in concrete actions so as to combat poverty, protect the environment of the Niger River basin and reinforce cooperation among the NBA countries
- To ensure a responsible and sustainable involvement of the civil society and the private actors in the NBA member countries in the implementation of the shared vision.

In April 2008, the SDAP was adopted by the Member States at the 8th Heads of State and Government Summit together with an Investment Programme (IP) for 2008-2027 and a Water Charter. The IP is spread out over several five-year plans: (i) the Five-year Priority Plan (FPP) for 2008-2012, (ii) the Second Five-year Plan for 2013-2017, (iii) the Third Five-year Plan for 2018-2022 and the Fourth Five-year Plan for 2023-2027.

In November 2012 the NBA incorporated the ‘*Reversing Land and Water degradation trends in the Niger River Basin*’ SAP actions into the original (2007) documents comprising the SDAP and IP, and the revised versions (2012) became the one and only reference establishing NBA policy and guiding the joint development process led by the Niger basin countries until 2027. At the same time, the NBA drafted a ten-year Strategic Plan (SP) for 2013-2022.

This Strategic Plan defined five strategic areas of action: (i) water as an economic development lever, (ii) the preservation of basin ecosystems, (iii) innovative and sustainable financing, (iv) co-operation with fellow Member States and partners and (v) organisational performance.

2.2.3 TDA and SAP Development for the Iullemeden and Taoudéni/Tanezrouft Aquifer Systems

Research on the Iullemeden Aquifer System (IAS) was initiated as a post Ph.D. project proposal. The scientific proposal was submitted to UNESCO and OSS in 1996 for financing. Following a regional seminar on the Iullemeden Aquifer System in 1999, the formulation of the GEF medium-sized project (MSP) was initiated in July 2001 with working meetings in the water ministries in Bamako, Niamey and Abuja and discussions with ECOWAS in Abuja. The initiative for joint management of transboundary risks in the shared Iullemeden Aquifer System with the priority focus on the recharge areas and humid zones and integrated land and water resources management was endorsed in a sub-regional technical consultation in UNESCO, Paris, in February 2002. The meeting included the participation of senior water officials and national experts from Mali, Niger and Nigeria together with international experts, including representatives of UNEP, OSS and ETH and the members of the scientific working group of the UNESCO/ISARM initiative.

A draft project brief for the MSP project “Managing Hydrogeological Risks in the Iullemeden Aquifer System (IAS)” was presented in the International Workshop on “Managing Shared Aquifers Resources in Africa”, in June 2002. The international workshop, in its recommendations to NEPAD, AMCOW, WSSD and the third World Water Forum, proposed the Iullemeden project as a first priority activity under an ISARM Strategic Action Plan for Africa.

Outputs include:

- A regional Database with more than 17000 boreholes,
- A Geographical Information System developed; several maps developed;
- Groundwater modelling : more than 125 million cubic metres/year of groundwater flowing from the aquifers towards the Niger, and 20 million cubic metres/year of water from river tributaries towards the aquifers
- A TDA developed: Three major transboundary risks identified with the countries; 1) reduction in the availability of water; 2) deterioration in water quality; 3) negative impacts resulting from climatic variability and climate change
- Products derived from the application of remote sensing to groundwater (TIGER initiative related to the AQUIFER project):

Topographical maps at a scale of 1:200 000

- Land use maps covering the pilot project sites of Banibangou in Niger, Birni n’Konni and Maradi on the Niger/Nigerian border based on Landsat and Alsat satellite images
- Map of surface water dynamics covering the pilot project sites of Banibangou in Niger, Birni n’Konni and Maradi using ERS/SAR et ENVISAT/ASAR radar images
- Digital terrain models, firstly for the Banibangou site and then at the scale of the IAS basin using ERS/SAR et ENVISAT/ASAR radar images
- Water balance map for the IAS (aquifer recharge) produced from the evapotranspiration map and that of precipitation on the IAS in 2005
- Piezometric maps of the Intercalary Continental and the Terminal Continental aquifers
- The MoU for the establishment of the Consultation mechanism for the three countries (Niger, Nigeria and Mali): Adoption of a protocol of agreement (articles), development of a roadmap for the setting up of a consultation mechanism (management framework) (Ministers meeting, Bamako, June 2009)

These results encouraged neighbouring countries (Algeria, Benin, Burkina Faso, Mauritania and Senegal) to agree to a second phase covering the Taoudéni/Tanezrouft aquifer basin based on the similarity of the challenges and issues, the agro-ecological environment, the continuity of the same aquifer geological formations in the Iullemeden and Taoudéni/Tanezrouft two basins and transboundary risks as identified in the TDA

This consideration of groundwater and conjunctive management and use of surface and groundwater was not given adequate prominence in either the 2007 version of the SDAP or the NBA SAP. Work in this respect with the support of GEF has been ongoing as follows:

- “Managing Hydrogeological Risks in the Iullemeden Aquifer System (IAS) (GICRESAIT)” has supported the establishment of a TDA to identify and diagnose transboundary risks in the IAS” This work was carried out from January 2004 through to June 2009. Work on the SAP was held back since it was agreed that the scope of work should be expanded to include the Taoudéni/Tanezrouft System. This would imply that a TDA for the Taoudéni/Tanezrouft System has to be completed and then a SAP and NAPs for the combined Iullemeden/Taoudéni/Tanezrouft Aquifer System (ITTAS) carried out.

After completion of the TDA for the IAS, work started in September 2009 on the development of the project document (ProDoc) for the integrated management of the water resources of the combined Iullemeden and Taoudéni/Tanezrouft aquifer systems and their interaction with the

Niger River. This document integrates both management tools (databases, GIS, remote sensing and modelling) and the drawing up of a TDA and SAP.

Three documents were drawn up:

- The prodoc for « the Integrated and Concerted Water Resource Management of the Aquifer Systems of Iullemeden, Taoudéni/ Tanezrouft and the Niger River (GICRESAIT)» was signed by OSS and the African Water Facility (AWF) on 2 July 2010
- A prodoc for financing the project entitled “« the Integrated and Concerted Water Resource Management of the Aquifer Systems of Iullemeden, Taoudeni/ Tanezrouft and the Niger River (GICRESAIT) » was signed between the OSS and the FGEF in November 2011.
- The Project Identification Form (PIF) was developed by UNEP and OSS to request financial support from GEF to implement the full-sized project « The Iullemeden Aquifer System: Strengthening Transboundary Groundwater management in the Niger River Basin and Enhancing Knowledge Management and Governance in the Associated Taoudéni/Tanezrouft Aquifer Systems (GEF ID 4941).

These three documents have all been endorsed by the different affected countries. Work on the AWF and FGEF financed GICRESAIT project has been ongoing since July 2010 and will end by March 2017. Highly relevant results and products have been generated.

- ITTAS, the second largest aquifer in Africa: 2.5 million km², smaller only than the Nubian Shale aquifer System (2.6 million km²)
- Around 30 million inhabitants (10% of the total CEDEAO population)
- Technical documents and regional summaries developed : Geohydrology, Hydroclimatology ; Socio-economics ; Climate Change ; Remote sensing ; databases, modelling
- Regional databases in ACCESS (>81,000 water points)
- Several maps developed : geology, hydrogeology, water points, aquifer geometry, land use, recharge (during dry and wet periods), vulnerability to climate change and anthropogenic actions
- Mapping of good quality water that is vulnerable to pollution (pollution risk map)
- A resource that is protected from climate change except in the areas where the groundwater table is close to the surface (map of vulnerability to climate change)
- Products derived from remote sensing used to improve the understanding of the groundwater of shared aquifers
- A corrected digital terrain model at 90m resolution, together with derived products (slope maps, drainage networks)
- Topographical maps
- Land use maps at a scale of 1 :200 000 covering a pilot zone defined by a north-south transect (2nd April 2011, 12th January 2011 and 25th September 2011)
- Mathematical models developed, evaluation of water resources
- Renewable water resources potential of 19 billion m³ per year
- Water abstractions (agricultural demands being covered by surface water) estimated at 350 million m³ per year (or less than 2% of the renewable potential)

- The Niger River contributes 1.5 billion m³/year to the Taoudéni/Tanezrouft basin upstream and receives more than double (3.3 billion m³/year) in the Iullemeden basin downstream. *Contributions to the Niger River flow by groundwater ensures its perennially.*
- More than 70 people trained and management tools (databases, GIS, remote sensing)
- « Abuja Declaration » and Agreement Protocol (54 articles), development of a roadmap for the setting up of a consultation mechanism, adopted by the countries (Abuja, 2014): A Consultation Mechanism (management framework) created.

This project builds on valuable collaboration between UNEP and OSS in building the knowledge base (TDA on IAS) for this innovative project.

2.2.4 Combined SAP and Project Document integrating the NBA Strategic Action Programme and improved Conjunctive Water Management of the Niger Basin and the ITTAS

Following completion of the TDA for the IAS, work started on the drafting of the Project Identification Form (PIF) for the SAP and SAP implementation for the ITTAS. However, in July/August 2012, work on this was halted when it was agreed that instead of developing two separate projects (one for the NBA SAP implementation ('Reversing Land and Water degradation trends in the Niger River Basin') and one for the ITTAS SAP development and implementation, it was more logical, indeed essential, to combine the two initiatives into a single project for, among other reasons, promoting the conjunctive management of surface and groundwater resources in the Niger Basin – ITT Aquifer Systems.

The development of this project document is aimed at the implementation of both the NBA supported SAP (as integrated into their **SDAP**) and the ITTAS SAP. However, it should be noted that for the ITTAS the TDA is only partially complete and the SAP still has to be developed. Completion of the TDA and the SAP for the ITTAS must therefore be included as one of the priority components of the proposed project.

2.3. Gender Issues and Mainstreaming

Understanding gender issues and ensuring that they are properly taken into account in the planning and design process is critical.

Although attention to gender has grown in natural resources management, vast social and economic inequalities still remain. Significant strides in international commitment have been made (gender equality, equity, women empowerment and participation), but little progress has been made on the ground. Within the project area there are significant challenges including unequal power relations, food insecurity and lack of access to productive resources etc.

Challenges are compounded by climate change. Because of their roles, unequal access to natural resources, limited decision making opportunities and deeply entrenched gender inequalities, the adaptive capacity of women is further compromised.

For the project water is the entry point for sustainable development, poverty eradication, human rights, reproductive and maternal health. Access to water has impact on health and productivity for women and children in schools.

The issue of poverty and land degradation and the challenge of sustainable development under such conditions has already been mentioned. Given that women in the basin are more vulnerable than men to chronic poverty, it is clear that empowering women should be an effective way to addressing many of the environmental challenges in the basin. This will be especially critical in Component 2. Some of the specific issue and challenges that will have to be taken into consideration in the design of demonstration projects under Component 2 should include:

- Women account for around 70% for household food production, managing land, water & livestock, yet they are often not considered as 'farmers'. It will be important to provide ways of empowering women farmers.
- Many women lack land rights leading to women lacking access to water supplies when land titles are required.
- Investments tended to focus on large scale projects benefiting rich farmers often at expense of small marginal farmers often evicted, displaced or their rights expropriated. These rich farmers are almost exclusively men.
- Sometimes irrigation can lead to food insecurity at the local level. A shift to cash crops can undermine indigenous knowledge food production systems. The participation of civil society, NGOs and the local community will ensure the stewardship of such indigenous knowledge is built upon and encouraged.
- Consideration of gender sensitive technology that factors in women's needs and capacities
- Membership of farmers and water management associations is sometimes restricted to land owners or household heads, thus excluding many women.

The project, at its inception phase, will invest in a Gender Assessment both at the national level as well as at the regional level to identify the baseline situation. Based on the Gender Assessment, a Gender Action Plan will be developed, which will propose a set of concrete interventions that the project can incorporate in order to enhance its contribution towards gender mainstreaming and women's empowerment with a corresponding set of indicators to be monitored throughout the project implementation period (especially for annual reporting through PIRs, at mid-term review, and at terminal evaluation) and propose the end-of-project targets related to gender mainstreaming and women's empowerment. Both the Gender Assessment and the Gender Action Plan will be presented to the PSC members for their review, comment and approval. The Gender Assessment and the Gender Action Plan will be completed prior to the submission of the first PIR for this project.

2.4. Project Components

These components, together with the expected outcomes and outputs and associated activities are presented in detail in the following paragraphs.

2.4.1 Component 1: Promoting conjunctive management of ground and surface waters

Outcome 1.1: IWRM supported by a sound understanding of ground water resources and their linkages with surface water systems

All outputs leading to Outcome 1.1 will be delivered by UNEP.

Component 1 is aimed at promoting the conjunctive management of the ground and surface water resources of the Niger River Basin. The integration of conjunctive management into IWRM processes has to be based on a sound understanding of ground water resources and their linkages with surface water systems within the study area. Work under Component 1 will therefore focus on closing gaps in scientific knowledge, transboundary diagnostics and strategic planning to ensure that the conjunctive management of ground and surface water resources can be properly integrated into IWRM to reduce pressures on certain water systems while simultaneously and primarily ensuring sufficient and easily accessible water supply for the well-being of the people within the ITTAS and Niger River basin.

The TDA for the Iullemeden Aquifer System has already been completed and will be extended to cover the entire ITTAS under this component of the project. A SAP and NAPs for the entire ITTAS will then be developed and, as was done with the Niger Basin SAP, used to update the NBA's SDAP as applicable.

The GEF increment in this component will be used to establish the necessary homogeneity of knowledge within the whole basin, with a priority on the filling of related data and knowledge gaps for the ITTAS basin until it reaches the same level achieved for the IAS basin.

Work on Component 1 should begin as a matter of urgency since work on some parts of Component 2 will be informed by the findings and in particular information required to further define the priority sites to be chosen for conjunctive management pilot projects.

Output 1.1.1: Hydrogeological functioning of/and linkages between the Iullemeden, Taoudéni-Tanezrouft Aquifers (ITTAS), other aquifers systems and the surface waters of Niger River Basin

This output will be the result of assessments and modelling aimed at understanding both the interlinkages between the main aquifers and the related surface water systems. This understanding will form the main technical point of departure for the TDA.

Work on the Transboundary Diagnostic Analysis of the Iullemeden Aquifer System under the *Managing Hydrogeological Risk in the Iullemeden Aquifer System Project* undertaken by OSS under the UNEP/GEF MSP was completed in 2007. In addition to setting up a model for the Iullemeden Aquifer System, this study also produced important results and products

such as regional and national summaries on geology, hydrogeology, hydroclimatology, climate change and socio-economics. It also includes a regional database with 45,000 water points identified using remote sensing within the IAS basin. Regional maps at a scale of 1:2,000,000 scale are also available for the whole Iullemeden-Taoudéni/Tanezrouft aquifer system and includes information on geology, hydrogeology, and a digital terrain model (DTM) and derived maps on slopes, drainage, land use etc). Additional inputs will be received from on-going studies under German Cooperation which are focused on the exchange of geological and hydro-geological data, capacity development in scanning and digitizing maps, management of problems related to groundwater in the Niger River. Additional ongoing field studies under the AWF and FGEF support will also be useful.

It is likely that a four dimensional model (3 spatial dimensions on a time scale) will be used. Setting up and running the model will require a range of input data covering the geology, climate and hydrogeology, geomorphology, piezometry, transmissivity and storage coefficients, historic and ongoing abstraction, as well as general environmental and socioeconomic conditions. In addition to taking into account current and historic climatic conditions, the modelling will make use of regionally downscaled climate data in order to take climate change into account. Major elements of the model will include:

- A general head boundary as a reference for the amount of flow through the boundary and the gradient across this boundary,
- The river system including all boundaries, which also requires a digital elevation model
- Water levels and discharge data at different points on the river system over time
- Riverbed hydraulic conductivity. The way in which the width of the river increases and decreases spatially and temporally is also important
- Recharge, as measured at different point, together with data on the parameters which influence recharge including rain, evaporation, leakage etc

The modelling work is clearly dependant on significant quantities of data. While it will be possible to collect much of the data as part of the project, it will be necessary to implement some data collection programmes over the longer term in order to improve the accuracy of the model put in place during this part of the study. Although the results of the modelling will be used to inform the TDA and SAP during year 2, an activity running through to the end of the project aimed at making use of data collected after completion of the TDA. This will allow the calibration and accuracy of the model to be improved.

The proposed activities are summarised under A to D as follows:

Proposed Activities

- **A: Develop methodology and define data requirements.**
 - i. Identify scope and boundaries of the model and critical locations for more detailed analysis.
 - ii. Identify data needs for the model with respect to hydrodynamic, hydrogeological and geochemical characteristics and methodology for data collection
- **B: Data collection**
 - i. Collect and consolidate existing data from all identified sources
 - ii. Conduct field surveys to collect required data

- iii. Collect complementary data (with respect to water quantity and quality, including local and traditional knowledge)
- **C: Establish mathematical hydrogeological model for combined ITTAS-Niger**
 - i. Build and calibrate model for TTAS
 - ii. Combine and integrate IAS and TTAS models to obtain combined ITTAS-Niger mathematical model including detailing of fluxes between groundwater and surface water
 - iii. Update calibration and results of the model based on new data collected during the course of the study
 - iv. Carry out modelling runs under anticipated future climate conditions, making use of regionally-downscaled data where available
- **D: Summarise findings and make recommendations**
 - i. Summarise findings and make recommendations for TDA
 - ii. Make recommendations for monitoring requirements for improvement of model calibration, accuracy and potential applications.

Output 1.1.2: Technically Cleared TDA and SAP for the ITTAS

The results of the modelling will provide a scientific basis for the TDA, although it is anticipated that initial work on development of the TDA can already start in parallel with the modelling work under Output 1.1.1.

The stages involved in the TDA development process can be summarised as follows:

- Preparation of the TDA;
- Analysis of the impacts and consequences of each Transboundary problem;
- Final prioritisation of the Transboundary problems;
- Analysis of cause and effect chains and analysis of governance;
- Production and submission of the complete draft TDA;
- The TDA is adopted by the Steering Committee.

The TDA process is well-tested. It is the analysis of cause and effect chains and the analysis of governance that provide the basis for the strategic action programme which effectively sets forth a programme of actions (governance reforms, investments) to tackle the key transboundary environmental issues identified in the TDA and to achieve the required Ecological Quality objectives (EcoQOs). The Strategic Action Programme (SAP) and the National Action Programmes (NAP) that go with it, will be the final deliverable of this Output. It should be stressed that an SAP has already been formulated for the Niger River basin according to its surface water hydrographic boundary and a stress on its surface water resources. This SAP has already been integrated into the NBA's SDAP for the Niger River Basin. The ITTAS SAP and NAPs that are produced as part of this output will be also be taken into account to update the SDAP, bearing in mind that the study area for ITTAS includes some areas that are not within the catchment limits of the Niger River Basin. The SAP will also inform the design of activities under Component 2, in particular Output 2.1.4.

The proposed activities are summarised under A to C as follows:

Proposed Activities

- **A: Planning of TDA/SAP**

- i. Setting up of committees and technical task team
- ii. Design work plan for the TDA/SAP
- iii. Detailed stakeholder analysis and involvement plan

- **B: Development of the TDA**

- i. Identification and initial prioritisation of transboundary problems and analysis of impacts/consequences of transboundary problems
- ii. Final prioritisation of transboundary problems
- iii. Causal chain analysis and governance analysis
- iv. Production and submission of complete draft TDA
- v. Adoption of TDA by steering committee

- **C: Formulation of the SAP**

- i. Merging the TDA and SAP, development of EcoQOs
- ii. Brainstorming ways to attain the EcoQOs
- iii. Consultation on alternative options
- iv. Development of targets and indicators and agreement on institutional framework
- v. Drafting of NAPs and SAP
- vi. Adoption of the SAP by steering committee
- vii. Endorsement of SAP (and NAPs at national levels) by designated ministers in each country

Output 1.1.3: Strengthened Capacity of National and Regional Water Managers

Capacities of national and regional water managers will be strengthened, through training on various aspects including how to undertake TDA/SAPs and specialized aspects of aquifer assessment, modelling, planning and management.

Training in the TDA and SAP process is fundamental to its success and applicability, especially if existing capacity and experience in the process is lacking. The identification of transboundary problems, carrying out the analysis of causal chains and the governance analysis is a stakeholder-driven process. The capacities of the stakeholders will be strengthened to develop the TDA/SAP using the GEF IW:LEARN vetted methodology. This ensures that the transboundary problems identified, together with the SAP that is developed are relevant and appropriate. Although the TDA is a technical document, it is important to stress that transboundary problems cannot be identified on the basis of scientific analysis alone. The knowledge and understanding of stakeholders is of critical importance.

The training will cover two main areas:

- Carrying out a TDA and the formulation of NAPs and the SAP
- Capacity building in a range of specialised technical areas linked to the scientific and technical work required to build the TDA. These would include specialized aspects of

aquifer assessment including data collection and monitoring, modelling, planning and management.

The training will be provided in a number of different ways including “on-the-job” training, formal training sessions and workshops. In order to carry out the on-the-job training, it will be necessary to identify a number of suitable candidates within the host countries to be co-opted into the technical team carrying out the modelling and compiling the TDA/SAP. These persons should generally have the appropriate technical background for the specific area of study. Most of the training on how to carry out the TDA, including aspects such as developing causal chains, can best be achieved through short courses and in the workshop environment.

The proposed activities are summarised under A to C as follows:

Proposed Activities

- **A: Identify training needs and draw up training plan**
 - i. Identify training needs in consultation with a wide group of stakeholders
 - ii. Draw up training plan
- **B: Training in TDA / SAP**
 - i. Provide short courses in TDA / SAP formulation and implementation
- **C: Specialised training in aquifer assessment, modelling, planning and management**
 - i. Provide on-the-job and adhoc (counterpart etc) training during modelling (see Output 1.1.1) work
 - ii. Provide specialised formal training sessions

2.4.2 Component 2: Sharing responsibilities and benefits with local communities, civil society in conserving basin resources, including groundwater.

The purpose of this component is to implement a wide range of community-based projects aimed at addressing many of the key issues and challenges as originally identified in the Niger River TDA/SAP/SDAP as well as those anticipated to be identified in the ITTAS TDA/SAP under Component 1.

Component 2 should be seen as the core component of the project. It is the component in which the proposals for sustainable water resources management as derived for example from the NBA SAP and SDAP will be implemented on the ground. Most importantly, the foci of the different interventions reflect some of the priorities of the NBA’s Strategic Plan in view of conjunctive management of ground and surface water resources.

The NBA SAP presented a set of long-term environmental quality objectives (LTEQOs) in their SAP (2012). They can be summarised as follows:

- LTEQO 1. The basin’s plant cover is restored and a system for the sustainable management of plant formations is set up
- LTEQO 2. Productivity of agricultural and pastoral systems improved and system for the sustainable management of soil resources set up

- LTEQO 3. Water needs of all users, including ecosystems, covered sustainably and system for the sustainable management of water resources set up
- LTEQO 4. Water resource quality at least equal to the WHO's "safe drinking water" standard
- LTEQO 5. Biodiversity, including genetic diversity, of land ecosystems restored and sustainable management system set up
- LTEQO 6. Biodiversity, including genetic diversity, of aquatic ecosystems restored and sustainable development mechanism established
- LTEQO 7. Reduction of infestation of aquatic plant species to a level that does not impact negatively on aquatic ecosystems and socio-economic activities on the river
- LTEQO 8. Reduction of basin vulnerability to the problems of climate variability and change
- LTEQO 9. Biodiversity of the wetlands of the Inner Delta, the Middle Niger and the Maritime Delta restored and system for their sustainable development set up
- LTEQO 10. Biodiversity of the protected areas of the Niger W, Chad and Northern Cameroon restored and system for their sustainable management set up
- LTEQO 11. Mountain forest ecosystems in Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin restored, and system for their sustainable development set up
- LTEQO 12. Stabilized catchment areas and riverbanks in the Inner Delta in Mali, the Niger Belt, the Middle Niger up to Kainjin in Nigeria, and the Chad portion of the Bénoué Basin

The proposed interventions under Component 2 will contribute in a major way to the realisation of many of these objectives and in a significant way to all of them, with the possible exception of LTEQO 12. While these are long-term objectives at the basinwide scale, it is reasonable to aim for major progress at the pilot demonstration project scale – what is long-term at the basinwide scale can be short-medium term but at a small-scale. The majority of the LTEQOs are focussed on tackling degradation of natural resources through i) restoration and ii) the setting of systems to support sustainable development.

To ensure that activities supported by the project, especially under Component 2, are designed to enhance gender equality and women's empowerment, the project, at its inception phase, will invest in a Gender Assessment both at the national level as well as at the regional level to identify the baseline situation. Based on the Gender Assessment, a Gender Action Plan will be developed, which will propose a set of concrete interventions that the project can incorporate in order to enhance its contribution towards gender mainstreaming and women's empowerment with a corresponding set of indicators to be monitored throughout the project implementation period (especially for annual reporting through PIRs, at mid-term review, and at terminal evaluation) and propose the end-of-project targets related to gender mainstreaming and women's empowerment. Both the Gender Assessment and the Gender Action Plan will be presented to the PSC members for their review, comment and approval. The Gender Assessment and the Gender Action Plan will be completed prior to the submission of the first PIR for this project.

To mitigate the degradation of the basin resources, the Executive Secretariat of the Niger Basin Authority (NBA) is implementing the Niger Basin Water Resources Development and Sustainable Ecosystem Management (WRDSEM) Programme financed by the World Bank (500 million USD for a duration of twelve years 2007-2019). The Programme has three components: (i) Strengthening of Institutions and capacity building of NBA; (ii) Rehabilitation, optimization and development of regional infrastructures; and (iii) **sustainable management of priority degraded**

ecosystems and rehabilitation of small hydraulic infrastructures. The first phase (2007-2012) targeted **five-member Niger River “mainstream”** countries of the NBA: Guinea, Mali, Niger, Benin and Nigeria. Under this first phase, the WRDSEM completed many studies on the rehabilitation of small dams combined with the identification of income generating activities, small irrigation schemes, environmental impact assessments, etc. Training and sensitization of stakeholders were undertaken on the management of biodiversity, land in support to the sustainable management of lands, etc. The total estimated amount of WB “baseline project” for Component 2”, is estimated to be \$50 million. Other projects of a similar nature include the Fight against Desertification Project and the Project aimed at reversing tendencies towards the degradation of the waters and lands of the Niger River Basin.

Outcome 2.1: Niger Basin Users Associations and National NGOs engaged in basin resources management and conservation for better control of flood/drought/pollution, reduction of pressure on land, forest and biodiversity while improving living conditions of households

There are a total of six outputs aimed at leading this Outcome. Outputs 2.1.1, 2.1.2, 2.1.3, 2.1.5 and 2.1.6 will be delivered by UNDP-NBA, while Output 2.1.4 will be delivered by UNEP.

Within the context of the main areas of concern with respect to the degradation of natural resources, three main areas of degradation have been selected for inclusion under Component 2:

- Aquatic habitats and threatened wetlands
- Protected areas
- Mountain forest ecosystems

These three areas are specifically singled out in the NBA SAP’s LTEQOs. In addition, in recognition of the recommendations that have come out of the IAS TDA, and recognising that similar recommendations can be expected from the ITTAS TDA/SAP being carried out under Component 1, a fourth action area has been identified as highly relevant:

- Groundwater Management and Integrated planning of surface and ground water resources.

Under Component 2, these four areas will be the focus of community-based projects aimed at improved and sustainable resources management and conservation for better control of flood/biodiversity/pollution, reduction of pressure on land, forest and biodiversity. At the same time, it is critical to understand that sustainability of these community-based actions is not possible if their implementation does not lead to benefits for the communities in terms of an improvement in livelihood and/or economic gains. The idea is to develop “win-win” pilot demonstration projects. Investments should be focussed on setting up the projects and getting them to the point of self-sustainability, not on subsidizing conservation activities over the medium or long term. Once the projects are in place there should be a clear realisation within the communities that maintaining the practices introduced is in their own interest. This will guarantee sustainability in the long-term. There are a number of project planning and design principles that should be borne in mind. The projects should be chosen and designed so that:

- They lead to the enhancement of livelihoods, thus encouraging community buy-in. Promote alternative livelihood generating activities, where possible.

- They involve stakeholders (specifically beneficiaries) in the planning and design process. The principles of design can be technical and top-down, but the detailed planning and design should be bottom up and achieved through careful consultation from the outset. This will include the representation of all rights holders, especially women and any marginalised groups. This representation will be made effective by a strong capacity-building programme.
- While beneficiaries should be key players in the planning and design process, it is essential to fully involve (and capacitate where necessary) the existing sectoral (line) institutions as they are represented at the local levels. This will include any existing extension services. Not only can these institutions bring experience and expertise to the demonstration projects, they can play a critical role in the process of replication and taking to scale which would be a challenge otherwise. If demonstration activities will be carried out within the ecosystem for which a coordination platform is established (under Outcome 4.1.5), then the platform may act as a forum where these relevant national institutions will be informed of the demonstration activities and provide advisory and coordination support as necessary.
- Local level administrations also have an important role to play and should be involved from the outset. In the first place they are playing a role in the overall management of the area and will have to buy into and support the projects. Secondly local-level administration are part of the overall administrative hierarchy and can therefore play a role in the replication and taking to scale process through their hierarchy. Extension services will be heavily involved in project design and implementation. This will support and facilitate the replication of projects and scaling up process. Details of the extension services to be involved are provided under Outputs 2.1.1 to 2.1.3.
- There should be a fair geographical spread of the various projects. This will be particularly important when it comes to experience-sharing, replication and taking to scale
- The different component outputs have specific foci, but this should not mean that activities are mutually exclusive. Output 2.1.6 is specifically aimed at taking this into account and providing integration across intervention areas when projects are taken to scale.
- Monitoring and evaluation should be scientifically-based and in terms of “success” indicators they should include both environmental and socio-economic indicators.
- In order to have useful and measurable environmental indicators, it will be necessary to select and establish environmental quality “reference” sites during project inception, which will become the baseline year. These sites can be small but should be representative of undisturbed conditions. During the inception Phase these reference sites will be surveyed for measurement of biodiversity and other indicators as appropriate to the focus of each pilot project.

Output 2.1.1: Protection of Aquatic Habitat and Biodiversity of Threatened Wetlands

This output is aimed at contributing towards three long-term environmental quality objectives for the Niger River basin:

- LTEQO 9, the restoration of the “biodiversity of the wetlands of the Inner Delta, the Middle Niger and the Maritime Delta” and the setting up of a “system for their sustainable development”,
- LTEQO 7, the reduction of infestation of aquatic plant species to a level that does not impact negatively on aquatic ecosystems and socio-economic activities on the river and

- LTEQO 6, the restoration of the biodiversity, including genetic diversity, of aquatic ecosystems and the setting up of a sustainable development mechanism

The work leading to this output concerns the wetlands of the Inner Delta and the Middle Niger Delta. The sensitivity of the wetlands is related to their dependence on the river hydraulic conditions (water depth, flow, duration and period of submersion) and also on the development of human economic and social activities, which if not managed properly, can have increasingly adverse impacts. Parts of these ecosystems are classified (Ramsar sites, national parks, transboundary parks, etc.) and conservation activities are underway at national level to improve their management. These are, however, frequently challenged by lack of coordination, shortage of capacity (human, technical and financial) and the challenge of anthropogenic pressures such as deforestation and poor management/inappropriate development practices.

The parallel needs for an improved standard of living for the areas' inhabitants and conservation are critical and this can best be achieved through a livelihood-based approach to ecosystem management, but this has to be based on a proper understanding of associated biodiversity at the site-specific level, ecosystem functioning, and ecosystem goods and services that it provides. An assessment component is therefore a vital part of each demonstration project. An integrated approach will be developed to restore the water and wetlands ecosystems services that directly sustain communities and contribute to the conservation of biodiversity. The planning and design of specific projects will be according to the priorities at the various agreed project sites but should be in line with the general planning and design criteria presented earlier

Projects will include community actions for the protection of aquatic habitat and wetlands' biodiversity threatened by overexploitation of their resources and by invasive aquatic plant species. The project will support the implementation of participative projects to restore and manage resources and biodiversity in the wetlands (for example in the Middle Niger). An integrated control programme of invasive aquatic plant species of infested sites in Mali, Niger, and Nigeria will be implemented through the organisation of workshops to train communities and share experience on preventing infestation by invasive aquatic plant species and the use of combine mechanical prevention (cleaning, weed cutting or hand cutting) and/or biological prevention methods. It will establish a monitoring mechanism and the tracking of lessons learnt for potential replication.

Existing extension services as well as various associations will play an important role in both the design and implementation of the programme. Those who should play a role are summarised in the following table::

Table 2-1: Extension services and associations to be involved in project design and implementation towards Output 2.1.1

Organisation Name	Type	Locations
Office of the Niger	Semi-autonomous government agency in charge of large irrigation scheme	Ségou Region, Mali
Rice Office of Mopti		Mopti Region, Mali

Extension services of the Ministry of Water and Forests	Extension services related to water resources	In Mopti and Ségou regions, Mali
Extension Services of the Ministry for Livestock and fisheries	Extension services providing support to fisherfolk	In Mopti and Ségou regions, Mali
Extension services under the Directorate of Fauna, Fisheries and Aquaculture	Extension services providing support to fisherfolk	Especially around landing sites on the Niger River, Diffa, Dosso, Tahoua, Tillabéri etc, Niger
Extension agencies under Fisheries and Aquaculture Department of Federal Ministry of Agriculture and Rural Development	Extension services to fisherfolk	State-based extension agencies (Kebi, Niger, Kwara and Kogi States)

The proposed activities are summarised under A to E as follows:

A: Identify, prioritise and select project sites

- i. Identify sites, (including reference site where weeds are under control) where the primary focus is on removal and control of aquatic weeds. The selected sites should be heavily infested and cover an area of around a square kilometre.
 - ii. Identify sites, (including reference site where fisheries management and fish yields are considered good and stable²⁷), where the primary focus is on sustainable management of fisheries. In terms of extent, it is proposed that the area should be that commanded by a typical landing site
- **B: Planning and design of individual projects in line with Component 2 design principles**
 - i. Set up and make operational project team, including stakeholder representation
 - ii. Detailed planning and design of individual projects
 - **C: Implement community pilot demonstration projects**
 - i. Implement all core activities of the pilot demonstration projects
 - ii. Conduct community training workshops in project management, ecosystem-based management and specific project-related aspects.
 - **D: Experience sharing and dissemination of results**
 - i. On-site experience sharing with other communities in support of project replication
 - ii. Organize regional and national workshops for sharing experiences in control of aquatic weeds and livelihood-based ecosystem-based management of wetlands

²⁷ Since it may not be possible to state what a "good" yield should be, the stability of yields, as reported by stakeholders during the Inception Phase will provide useful pointers.

- **E: Develop and implement monitoring and evaluation system**

- i. Establish a monitoring and evaluation system based on monitoring of ecosystem and social (livelihood) indicators. Environmental quality indicators and related targets will be derived on from the evaluation of the reference area during the Inception Phase.
- ii. Implement monitoring and evaluation system
- iii. Annual project review and revision of plan and activities work
- iv. Make recommendations for project improvement and taking to scale

Activities B and C directly concern the planning, design and implementation of each project. Each project will be different but there are number of actions/goals which should be common to all projects concerning the protection of aquatic habitats and the biodiversity of threatened wetlands. Each project should:

- Include the development and implementation of an assessment programme which will i) update knowledge of the biodiversity of each wetland, ii) conduct research on high-value endangered and extinct plant and animal species and iii) develop mitigation measures to counter the impacts of climate variability/change on each wetland and iv) create a system for the continuous monitoring of each wetland
- Have a clear focus on improving the productivity of wetlands by i) setting up organisations of fisherfolk, ii) carrying out extension work on the aquaculture of aquatic life and iii) developing the value of wetland product, including ecotourism

Output 2.1.2: Restoration and Improved Management of Protected Areas

The work leading to this output concerns protected areas in W Niger, Chad and North Cameroon. The focus is on protected areas and opportunities for the development of conservation-based ecotourism. This output is mainly aimed at contributing towards the following long term ecological quality objective:

- LTEQO10, the restoration of the “biodiversity of the protected areas of the Niger W, Chad and Northern Cameroon” and the setting up of a “system for their sustainable development”.

The output will also contribute to two other LTEQOs:

- LTEQO 5, the restoration of biodiversity, including genetic diversity, of land ecosystems and the setting up of sustainable management systems and
- LTEQO1, the restoration of the basin’s plant cover and the setting up of a system for the sustainable management of plant formations

The target areas for projects should include:

- The W Regional Park and the connected protected areas (Tamou and Giraffe Zone), which represent important ecosystem characteristics of the West African Woodlands/Savannah biogeographical zone. There is a development and management plan for the park and its buffer zones, but there are several threats including poaching, illegal grazing and the encroachment of agriculture.

- Protected areas in the upper Benué in Chad
- Although heavily populated in some locations, North Cameroon still has three large zones with international interest for the conservation of large wild animals. The Bénoué National Park occupies around 180,000 hectares and is one of the few sites in West Africa where packs of Painted Hunting Dogs (*Lycaon pictus*, EN) can be seen. This site is also designated as a World Heritage Biosphere Preserve. The Bouda Njida National Park also occurs in the headwaters portion of the Benue Basin within Cameroon.

In general, these protected areas are home to significant populations and there is hence both a need and an opportunity for livelihood-based conservation activities, especially around ecotourism. Local initiatives will be developed in these protected areas to reduce pressure on resources through participatory restoration and management of resources and biodiversity. This will create conditions enabling the generation of revenue through the promotion of ecotourism, the experimentation of breeding of wildlife species in peripheral zones, the promotion of community protected areas, etc.. The organisations responsible for the management of the various parks and protected areas will play an important role in both the design and implementation of the programme. Those who should play a role are summarised in the following table:

Table 2-2: Organisations in charge of Park management to be involved in project design and implementation towards
Output 2.1.2

Organisation Name	Type	Locations
CENEGRAF, National Centre for the Management of wildlife reserves	Ministry in charge of management of W National Park in Bénin	Bénin
Ministry of Water and Forests	Ministry in charge of management of W National Park in Burkina Faso	Burkina Faso
Ministry of Water and Forests	Ministry of joint charge of W National Park in Niger	Niger
Ministry for the Environment and sustainable development	Ministry of joint charge of W National Park in Niger	Niger
Ministry of Forestry and Wildlife	Ministry in charge of Bénoué National Park	Cameroon
Ministry for National parks, wildlife reserves and hunting (DPNRFC)	Ministry in charge of parks	Chad

The proposed activities are summarised under A to E as follows:

Proposed Activities

- **A: Identify, prioritise and select project sites in each targetted protected area**
 - i. Identify sites, including reference sites where part of protected area is in relatively undisturbed condition, where the proposed measures for conservation and revenue generation can be implemented and results demonstrated. The selected project sites should be accesible to tourist using the existing road network, include one accomodation site and a protected area of around 10,0000 hectares (10 x 10km),
 - ii. Identify areas for community-driven protection
- **B: Planning and design of individual projects in line with Component 2 design principles**
 - i. Set up the operational project team, including stakeholder representation
 - ii. Detailed planning and design of individual projects
- **C: Implement community pilot demonstration projects**
 - i. Implement all core activities of the pilot demonstration projects
 - ii. Conduct community training workshops in project management, ecosystem-based management and specific project-related aspects.
- **D: Experience sharing and dissemination of results**
 - i. On-site experience sharing with other communities in support of project replication
 - ii. Organize regional and national workshops for sharing experiences in community-based ecotourism, wildlife conservation and community-based protection
- **E: Develop and implement monitoring and evaluation system**
 - i. Establish a monitoring and evaluation system based on monitoring of ecosystem and social (livelihood) indicators
 - ii. Implement the monitoring and evaluation system. Environmental quality indicators and related targets will be derived on from the evaluation of the reference area during the Inception Phase.
 - iii. Annual project review and revision of plan and activities work
 - iv. Make recommendations for project improvement and taking to scale

Activities B and C directly concern the planning, design and implementation of each project. Each project will be different but there a number of actions/goals which should be common to all projects concerning the restoration and improved management of protected areas. Each project should:

- Include the development and implementation of an assessment programme which will i) update knowledge of the biodiversity of each protected area, ii) conduct research on high-value endangered and extinct plant and animal species and iii) develop mitigation measures tio counter the impacts of climate variability/change on each wetland and iv) create a system for the continuous monitoring of each demonstration site
- Have a clear focus on creating conditions that enable the protected areas of each site to generate revenue through i) the promotion of ecotourism, ii) the equitable sharing of resources generated with the local populations, iii) experimentation of wildlife species breeding in peripheral/buffer zones and iv) the creation of new protected areas for the benefit of local population.

Output 2.1.3: Restoration and Sustainable Management of Mountain Forest Ecosystems

The work leading to this output is aimed at contributing towards LTEQO11, the restoration of “mountain forest ecosystems in Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin” and the setting up of a “system for their sustainable development”.

The output will also contribute to two other LTEQOs:

- LTEQO 5, the restoration of biodiversity, including genetic diversity, of land ecosystems and the setting up of sustainable management systems and
- LTEQO1, the restoration of the basin’s plant cover and the setting up of a system for the sustainable management of plant formations

Efficient community restoration and sustainable management of these mountain forest ecosystems will help to reduce the degradation of forest cover caused by deforestation, land clearing, wood cutting, bush fires, overgrazing and poor practices of cutting vegetable portions reducing the floristic diversity and habitats. GEF resources will support the improvement of traditional activities like beekeeping, commercialisation of non-timber forest products (NTFP), the promotion of household sustainable energy, and help to design potential pilot projects on REDD+ scheme (Reducing Emissions for Degradation and Deforestation). It will promote the creation of community forests management for the sustainability of actions. Existing extension services as well as various associations will play an important role in both the design and implementation of the programme. Those who should play a role are summarised in the following table:

Table 2-3: Organisations in charge of extensions services to be involved in project design and implementation towards Output 2.1.3

Organisation Name	Type	Locations
Extension services in Ministry of Wildlife and Forestry	Extension services related to forest management	Adamaoua, Cameroon
Extension services of the Ministry of Water and Forestry	Extension services related to forest management	Balayan Souroumba, Sincy Oursa, Nyalama qnd Souti-Yanfou forest reserves, Guinea
Ministry for Forests and Natural Resources	Extension services related to forest management	Aliboro Region, Benin
Extension services of the Ministry of Water and Forestry	Extension services related to forest management	Sikasso Region and Koulikoro Region, Mail

The proposed activities are summarised under A to E as follows:

Proposed Activities

- **A: Identify, prioritise and select project sites in each targetted forest area**
 - i. Identify sites, including reference sites where mountain forest is in relatively undisturbed state, where the proposed measures for forest conservation and revenue generation can be implemented and results demonstrated. The selected project sites should be in a degraded state but still used by the local population as a source of fuelwood. The area of mountain forest should be around 400 (2 x 2 km) up to 1 600 ha (4 x 4km)
 - ii. Identify areas for community-driven protection. The selected areas must include communities currently using the forest resources for fuelwood.
- **B: Planning and design of individual projects in line with Component 2 design principles**
 - i. Set up and make operational project team, including stakeholder representation
 - ii. Detailed planning and design of individual projects
- **C: Implement community pilot demonstration projects**
 - i. Implement all core activities of the pilot demonstration projects
 - ii. Conduct community training workshops in livelihood-based sustainable forest mountain forest ecosystem management.
- **D: Experience sharing and dissemination of results**
 - i. On-site experience sharing with other communities in support of project replication
 - ii. Organize regional and national workshops for sharing experiences in livelihood-based sustainable forest ecosystem management.
- **E: Develop and implement monitoring and evaluation system**
 - i. Establish a monitoring and evaluation system based on monitoring of ecosystem and social (livelihood) indicators. Environmental quality indicators and related targets will be derived on from the evaluation of the reference area during the Inception Phase.
 - ii. Implement the monitoring and evaluation system
 - iii. Bi-annual project review and revision of plan and activities work
 - iv. Make recommendations for project improvement and taking to scale

Activities B and C directly concern the planning, design and implementation of each project. Each project will be different but there are a number of actions/goals which should be common to all projects concerning the restoration and improved management of the mountain forest ecosystems. Each project should:

- Include the development and implementation of an assessment programme which will i) update knowledge of the biodiversity of each mountain forest ecosystem, ii) conduct research on high-value endangered and extinct plant and animal species and iii) assess research the replenishment modes and evolution of springheads in each mountain forest ecosystem and iv) assess the impacts of actions to restore the biodiversity of mountain forest ecosystems

- Have a clear focus on the livelihood benefits that the participatory restoration and management of resources and biodiversity can bring to local communities in order to ensure that the measures introduced are sustainable.

Output 2.1.4: Demonstration of Best Practices in Groundwater Management and Integrated planning of Surface and Groundwater Resources

While the TDA will have to be carried out for the ITTAS before the various issues can be identified and prioritised, the TDA already carried out for the IAS already gives enough information for work to start towards this output, especially on areas within the IAS. In the IAS TDA, three major transboundary threats were highlighted as:

- Change in water availability
- Degradation of water quality
- Climate variability and/or change

A causal chain analysis was carried out on each of these risks and this led to the identification of a range of immediate causes, effectively the issues that will have to be addressed in the design of pilot demonstration projects so that the most relevant best practices can be adopted.

It is recommended that as a first step, demonstration sites within the IAS are selected and that sites within the greater ITTAS are added as initial findings towards the ITTAS TDA become available.

The choice of sites and the design of pilot demonstration projects should be aimed at implementing best practices which directly tackle the identified issues and causes of the priority transboundary threats. These best practices should be aimed at reducing stress through the implementation of practices that are socio-economically sustainable, that enhance the livelihoods of the affected stakeholders.

The target areas for the proposed pilot demonstration projects should generally be areas where:

- 1) Groundwater is an important source of water for one or more development purpose (water supply, irrigation, livestock watering etc) and there are issues around either the quantity or quality of the source due to poor management practices or/and
- 2) Surface water is an important but threatened/unreliable source of water and there are opportunities for the conjunctive use of the two sources

The aim with this type of project is to look at the available water resources in an area together with the various uses that are in place or planned, and to take an integrated approach in planning how best the demands can be met in a sustainable manner. Conjunctive use of surface and groundwater can provide opportunities to improve resilience against climate variability and efficiency can be enhanced by the application of best practices both in terms of water management and the use of water for development.

The proposed activities are summarised under A to E as follows:

Proposed Activities

- **A: Identify, prioritise and select project sites**
 - i. Identify sites where the proposed measures for shared management of groundwater resources can be implemented and results demonstrated
 - ii. Identify areas for community-driven best practices
- **B: Planning and design of individual projects in line with Component 2 design principles**
 - i. Set up the operational project team, including stakeholder representation
 - ii. Detailed planning and design of individual projects
- **C: Implement community pilot demonstration projects**
 - i. Implement all core activities of the pilot demonstration projects
 - ii. Conduct community training workshops in best practices in shared management of groundwater resources.
- **D: Experience sharing and dissemination of results**
 - i. On-site experience sharing with other communities in support of project replication
 - ii. Organize regional and national workshops for sharing experiences in best practices in shared management of groundwater resources.
- **E: Develop and implement monitoring and evaluation system**
 - i. Establish a monitoring and evaluation system that tracks characteristics of good groundwater conditions and the resilience of the communities
 - ii. Implement the monitoring and evaluation system
 - iii. Annual project review and revision of plan and activities work
 - iv. Make recommendations for project improvement and taking to scale

Output 2.1.5: Provision of Training to Basin Water User Associations

The provision of training will be a cross-cutting action to water user associations with the aim of supporting outputs 2.1.1 to 2.1.4. Water user associations will be critical players in the implementation of community-driven pilot demonstration projects. They will play important technical and management roles.

Training will be required in at least the following areas:

- The development, implementation, monitoring and evaluation of development programs and projects
- Mobilisation of financial resources, access to credit, etc.
- Best practices for the protection, preservation and restoration of wetlands and terrestrial ecosystems (mountain forest ecosystems, biodiversity conservation, agroforestry, etc.)
- Management of value chains, rural finance and organizational strategies
- The proposed activities are summarised under A to C as follows:

Proposed Activities

- **A: Identify target WUAs representing selected demonstration projects and training needs**
 - i. Identify Water User Associations (WUAs) and WUA representative for training
 - ii. Identify training needs and finalise training plan
- **B: Provide training in key areas to support sustainable implementation of demonstration projects**
 - i. Provide training in rational use of natural resources, wetland and ecosystem management
 - ii. Provide training in entrepreneurship, value chain management, agro-processing
 - iii. Provide training in rural finance and organization strategies
 - iv. Detailed planning and design of individual projects
- **C: Planning of training going forwards**
 - i. Hold national workshops to draw lessons learnt on training of WUAs and make recommendations
 - ii. Make conclusions for training and capacity building as part of taking to scale

Output 2.1.6: Strategy for linking up and integrating community-based interventions (Outputs 2.1.1 to 2.1.4) so that livelihood-based ecosystem management becomes the basis for the sustainable management of water resources basin-wide

For all four of the intervention areas under outputs 2.1.1 to 2.1.4, an integrated approach towards sustainable management is proposed. In terms of the issues that have to be tackled, there are many which are common to more than one of the intervention areas. This is also true of many of the livelihood opportunities. In consideration of these overlaps it is important to look at opportunities for taking advantage of synergies and complementarity across interventions when it comes to replication and taking to scale. Work leading to this output will be carried out in parallel with outputs 2.1.1 to 2.1.4, starting with a coordination role and finishing with work on a strategy for linking up and integrating community-based projects moving forward.

The proposed activities are summarised under A to B as follows:

Proposed Activities

- A: Coordinate (at the strategic level) pilot demonstration projects across 2.1.1 to 2.1.5) during planning, design and implementation**
 - i. Review progress and achievements of all projects through regular communication with projects teams
 - ii. Identify opportunities for synergies and complementarity across interventions
- B: Develop a strategy for linking up and integrating community-based projects**
 - i. Hold meetings and workshops to develop approaches for linking and integrating community-base projects with different main foci

- ii. Develop a strategy for linking and integrating community-base projects in preparation for replication of pilots and taking to scale
- iii. Develop policy recommendations to enhance the policy enabling environment to promote such community-based projects in the basin

2.4.3 Component 3: Strengthening industries' environmental/social responsibility capacities.

Component 3 has a specific focus and is aimed at encouraging industry to reduce pollution through the adoption of best practices and new technology.

The main objective of the component 3 of the NBA/OSS-ITTAS project is to reduce pollution load in the Niger River Basin water system in partnership with the private sector active in the basin. The integrated approach for the transfer of environmentally sound technology (TEST) developed by UNIDO and tested successfully elsewhere in the world including some African countries has been chosen as a methodology to be piloted in the basin. This methodology aims at ensuring increased productivity, environmental performance and social responsibilities of polluting enterprises in the basin

Two related outcomes are proposed under this component, the first to be executed by UNIDO, the second by NBA. The first part of the Component 3 work, leading to Outcome 3.1, is covered by a separate project document. Only the work leading to Outcome 3.2, is covered in detail in this project document.

Outcome 3.1 will be delivered by UNDP-UNIDO while Outcome 3.2 will be delivered by UNDP-NBA.

Outcome 3.1: Systematic and integrated approach of industrial competitiveness and environmental/social responsibility through Environmentally Sound Technology (TEST) to reduce wastewater discharges and pollution loads in the Niger River introduced and demonstrated

The main outcome will be an enhanced knowledge and capacity of pilot enterprises and increased industrial competitiveness and environmental/social responsibilities to implement TEST measures to reduce wastewater discharges and stress on the Niger River. Entrepreneurs' associations, civil society and the media will be invited to participate in the training workshops and they will be reached out to share lessons learned at pilot enterprises. Local industries and SMEs identified as pollution "hot-spots" and selected as pilots will develop TEST capacities necessary to prepare their investments in BAT/BEP and identify possible funding sources. The project will monitor the stress reduction and changes in SME profitability achieved at pilots.

Output 3.1.1: Niger Basin Authority's Waterbody data/inventorying processes updated; pollution control and regulatory framework improved. (Including the identification of causes and sources of

pollution)

The proposed activities are summarised under A to G as follows:

Proposed Activities

- A: Review and evaluate NBA's existing water body data and inventorying processes vis-à-vis member countries
- B: Carry out the identification and verification of member states hot-spots priorities relating to their individual river basin management and pollution control/prevention plans
- C: Identify areas for modification and proper coordination of the NBA's basin-wide water body data and inventorying processes and goal(s)
- D: Carry out an in-depth basin-wide analysis of regulations/standards needed to control/manage pollution discharge to water bodies and conservation of aquatic biodiversity
- E: Define and set basin-wide parameters and mitigation standards for contaminants discharges from potential polluting industries.
- F: Design holistic monitoring and enforcement strategies of pollution control/mechanisms for NBA and member countries
- G: Compile and evaluate exiting (industrial) pollution hot-spot baseline data

Output 3.1.2: Pollution hot-spots identified and customized to suit current needs; basin-wide assessment and selection processes of pilot enterprises improved and mainstreamed

Pilot enterprises to be short listed for TEST implementation will be based on several criteria including:

- Geopolitical considerations: due to the size of the basin and the variety of stakeholders concerned and the available budget, pilot enterprises could be limited to one enterprise per country.
- Diversity of the activity sector: pilot enterprises must include both industrial and mining sectors as well as industrial enterprises with different activities (e.g. tannery and pulp & paper factory). This will demonstrate the versatility of the TEST approach to reduce pollution across a large spectrum of polluting activities;
- Listed enterprises must have been in business for at least 5 years and not present any foreseeable indication of going out of business;
- Selected enterprises must be willing to adopt TEST implementation.

The proposed activities are summarised under A to I as follows:

Proposed Activities

- A: Define and set criteria for selection of pilot industries/enterprises
- B: Carry out the identification, and selection of pilot enterprises in line with project goal(s)

- C: Conduct on-site visits to selected pilot enterprises & undertake a cleaner production assessment (CPA) to determine their potentials/readiness in line with project goal(s)
- D. Compile a preliminary technical assessment (diagnostic) report of pilot enterprises facilities and highlight best sites and conditions for pollution hot-spots monitoring
- E. Design customized and or sector-specific pollution control and mitigation measures for pilot enterprises.
- F. Organize stakeholders' workshops/seminars and deliver presentations of the TEST methodology
- G. Presentation of diagnostic reports to selected enterprises
- H. Seek and confirm voluntary commitments (agreements) from pilot enterprises to the proposed environmental management system
- I. Nominate demo site coordinators and prepare inception training materials for pollution control/ mitigation measures based on the enterprise needs and sector.

Output 3.1.3: Transfer of Environmentally Sound Technology (TEST) approach at the enterprise level efficiently introduced

The Transfer of Environmentally Sound Technology methodology (TEST) is developed with an overriding aim to improving the environmental management and competitiveness of businesses in developing countries and transition economies. It is a Best Available Practice (BAP) that has been implemented in many several regions worldwide (e.g. Danube River Basin), within industrial hot spots areas, contributing to prevent discharge of industrial effluents into international waters (rivers, lakes, wetlands and coastal areas) and thereby protecting water resources for future generations. Since its development, the TEST methodology has contributed to yielding very positive economic and environmental results as an Environmental Management Systems process. It also has the added benefit of being applicable to all types of businesses from micro, small and medium enterprises, to big companies in both industry and service sectors.

The proposed activities are summarised under A to L as follows:

Proposed Activities

- **A:** In collaboration with Niger Basin Authority, set up a Regional Project Advisory Board (consisting of all relevant stakeholders) to ensure that national priorities/plans are effectively implemented in this phase
- B. Organize and conduct preparatory training sessions (for demo site coordinators) towards the implementation of the TEST Approach
- C. Phase I: Design customized tools and plan the introduction and integration of 3 different "soft" complementary environmental management tools into pilot enterprises daily operations: Cleaner Production Assessment (CPA); -Environmental Management System (EMS) and Environmental Management Accounting (EMA)
- D. Evaluate options and coordinate the introducing/implementation of the 3 soft tools either simultaneously or step-by-step manner (Depending on the enterprise specific situations).

- E. Conduct a rapid assessment of Phase I, evaluate and benchmark achieved milestones necessary for next phase.
- F. Phase II: Identify requirements for investments in environmental sound technologies (EST).
- G. Carry out environmental sound technology assessments and end-of-pipe solutions in pilot enterprises
- H. Based on sufficient financial investment, plan the introduction of Technology Change at enterprise level
- I. Phase III: draft sustainable enterprise strategies to ensure continued use of TEST Approach.
- J. Plan the integration of TEST Approach into pilot enterprises business and functional strategies.
- K. Establish a virtual/physical **network** to communicate the performances & results of pilot enterprises.
- L. Design customized tools for pilot enterprise and co-ordinate the introduction and integration of: Corporate Social Responsibility (CSR) which complements EMS

Output 3.1.4: TEST programme results and experiences disseminated

The proposed activities are summarised under A to G as follows:

Proposed Activities

- A: Carry out the preparation of a publication on the applications of the TEST approach in the Niger River basin for public access.
- B: Organize National/Regional public and stakeholders seminars to highlight the potential benefits of applying the integrated TEST approach at various industrial levels.
- C: Create an online real time project website for virtual information sharing :
- D: Initiation of networking activities on TEST between the NBA and other TEST project partners (e.g. Med Test, Danube River Basin Test project)
- E: Collaborate with Regional Project Advisory Board to coordinate the proper dissemination of results and experiences among NBA member states and key manufacturing industries
- F: Engage Stakeholders for TEST scaling up in consultation with NBA and other relevant institutional stakeholders in member countries
- G: Highlight and promote Corporate Social Responsibilities (CSR) and voluntary environmental reporting at enterprises level

Outcome 3.2: Industrial Competitiveness and Environmental/Social Responsibility for reduced wastewater discharges reinforced by legal and policy frameworks

While the goal of introducing a systematic and integrated approach of industrial competitiveness and environmental/social responsibility through Environmentally Sound Technology can result in

sustainable savings for the participating enterprises, it is clear that success will be challenged by the lack of an appropriate enabling environment. Policy and laws on wastewater discharge and pollution control either are absent or hardly enforced. The situation varies from country to country but is generally very weak. The NBA has made attempts to start the process of promoting the principle of polluter-payer so that the member countries adopt it and concretise it in both policy and law. Also, that the approach is consistent across the basin. If successfully introduced and enforced, the incentive for industry and other sectors such as agriculture and mining to participate in self-regulation will be greatly increased.

The principle of “polluter pays” is increasingly accepted as a part of IWRM. It is also a goal for the basin states and is entrenched in the Niger Basin Water Charter. Article 9 of the Charter is expressed as follows:

“Article 9. Polluter-pays principle

The use of Niger Basin water shall take into account the polluter-pays principle, applied to both legal persons and individuals, and under which the costs of prevention, control and pollution reduction are borne by the polluter. The Member States undertake to set up tax incentives to help economic operators who implement procedures to use water resources in a manner which respects the environment.”

The TEST programme will provide the basin States with tool to encourage adoption of the polluter pays principle. By showing that there are real financial benefits in adopting new cleaner technologies and processes, the adoption of the polluter pays principles into the legal and policy framework can be achieved with reduced resistance from the affected parties.

Output 3.2.1: Development of Proposals for Policy Mainstreaming to address Pollution Reduction in Partnership with the Private Sector

The proposed activities are summarised under A to B as follows:

Proposed Activities

- **A: Develop proposals for policy mainstreaming**
 - i. NBA makes proposals on how private sector-driven implementation of best practices (of pollution load reduction) can be supported by policy changes (polluter-payer principle, etc.) at the regional level
 - ii. NBA organises and hosts a regional level workshop to discuss and agree on principles for policy mainstreaming and harmonization basinwide
- **B: Endorsement of recommendation for policy and legal changes for transboundary harmonisation**
 - i. Develop guidelines and recommendations for endorsement by Council of Ministers
 - ii. Endorsement of guidelines and recommendations by Council of Ministers
 - iii. Support national institutions to develop strategies for harmonization to domesticate the endorsed guidelines and recommendations

Output 3.2.2: Implementation of Harmonised Policies and Laws to address Pollution Reduction

Proposed Activities

- **A: Support implementation of policy mainstreaming**
 - i. Provide technical support to national institutions responsible for making policy and laws related to water pollution
 - ii. Develop and introduce monitoring and evaluation programme for both rate of implementation and impacts on water resources quality

2.4.4 Component 4: Capacity building and stakeholders involvement in Niger River ecosystem based management.

Outcome 4.1: National Policies and Institutions, Civil Society Platforms support Niger River Ecosystem based management

There are a total of seven outputs aimed at leading this Outcome. Outputs 4.1.1, 4.1.2, 4.1.3, and 4.1.6 will be delivered by OSS (under UNEP) with significant inputs and close consultation with NBA. Outputs 4.1.4, and 4.1.5 will be delivered by UNDP with significant inputs from UNEP-OSS activities. Output 4.1.7 will be delivered by both GEF Agencies. For the project to deliver this Outcome successfully, a close collaboration and coordination between the OSS, the technical advisory body which has been supporting the countries that share the ITTAS to develop appropriate governance option(s), and the NBA, the long-standing intergovernmental body with mandates to sustainably manage the water resources in the Niger River Basin on behalf of, and for the best mutual transboundary interests of, the Niger River basin states, with support from UNDP and UNEP as GEF Agencies.

A number of focus areas will contribute to this outcome: These can be categorised as follows:

- Improving the integrated management of surface and ground water resources (through better/more appropriate governance, integration of planning and strategies etc)
- Improving support to the implementation of the NBA's Investment Plan
- Capacity building

These are covered by the different proposed outputs.

The most challenging of these areas concerns improving the integrated management of surface and ground water resources. In the Niger River Basin, like many other transboundary river basins in Africa and around the world, the management and development of water resources at the transboundary level has been mainly focussed on surface water in the past. In many cases, river basin organisations have been set up in the first place with this as their primary purpose. Given the magnitude of transboundary impacts of large dams and major abstractions of surface water, and the need to plan for these across borders, compared to localised abstraction of groundwater, this is perhaps not surprising. However, there is increased recognition of the facts (and their importance) that

- surface and groundwater systems are interconnected and interdependent
- the same issues are relevant for surface water and ground water (deforestation, land degradation, pollution etc)
- many people are dependent on groundwater across the whole basin. They may not be large individual consumers but are in the majority in many areas.
- In many areas, groundwater abstraction has become significant, sometimes exceeding levels of sustainability

While there is an **absolute need** for conjunctive integrated management, one of the challenges is that the transboundary basin boundaries of shared surface and groundwater systems are not necessarily coincident. In the case of the ITTAS, for example, the ITTAS shares both the Niger River Basin and the Senegal River Basin. This clearly raises challenges in terms of governance

and conjunctive use management. Outputs 4.1.1 to 4.1.3 are aimed at addressing these challenges.

Output 4.1.1: Assessment of current national and regional actors in ground and surface water management and Analysis of options for integrating surface and groundwater governance mechanisms

In line with the Niger Basin Water Charter, the NBA is mandated by its member states to plan the transboundary management of the water resources of the Niger Basin. In Article 1.2 of the Charter, “hydrographic catchment area” is clearly stated as including groundwater and surface waters flowing to a common terminus, and a watercourse (Art 1.6) as “a system of surface waters and ground waters which by virtue of their physical relationship constitute a unitary whole and normally flow to a common terminus”. However, while the sustainable and integrated management of the surface and ground waters of the Niger River Basin is clearly at the heart of the NBA’s mandate, there are some challenges in how this mandate should be applied in the case of the ITTAS. These can be summarised as follows:

- Although Article 1.2 of the Charter states that the hydrographic catchment area is defined as including groundwater and surface water flowing to a common terminus, the catchment boundary which is conventionally (officially?) used to define the limits of the Niger Basin is (largely/entirely) defined by the limits of the surface water system and does not include the large majority of the ITTAS.
- The ITTAS underlies two large transboundary river basins, the Niger River Basin and the Senegal River Basin. An important question to answer is whether the ITTAS system has linkages with both of these systems and whether there is therefore a related terminus in both river basins.
- Assuming the definition of hydrographic catchment area as including both the existing area of the Niger Basin and the ITTAS, it is clear that countries (Algeria and Mauritania) which have not ratified the Charter nor been part of the process to build the SDAP are now concerned.

While dealing with these challenges is at the heart of integrating the governance of surface and ground water resources, it is unrealistic to think that this is not something that can be achieved in the short-term. The NBA’s SDAP and Investment Plan have been drawn up with the aim of concretising the “Shared Vision”, which was adopted by Council of Niger Basin Authority Ministers in May 2005. It consists of making “the Niger Basin a common area of sustainable development by the integrated management of the water resources and associated ecosystems for the improvement of living conditions and the prosperity of the populations.” Moving from the Vision to a concrete Investment Plan has understandably taken several years and this plan cannot be extended to include additional countries, actors and additional areas within a short space of time. It is proposed that a stepwise approach towards the final long-term goal of an official endorsed integrated transboundary governance mechanism for the surface and ground waters of the ITTAS/Niger River Basin is taken. The proposed steps are as follows:

- Develop, agree on and implement governance options for application during the immediate future to facilitate implementation of the project. This should be a specific task

of the project coordination unit working closely with the project coordination team. The success of the project depends on a mechanism being in place and so this should be addressed during the first six months of the project. The focus should be on finding a practical solution that ensures that the project proceeds on a technically sound basis and that no stakeholders are marginalised.

- Develop a strategy and roadmap towards endorsement of a long-term and sustainable governance mechanism and the implementation of transitional arrangements. Bearing in mind that a final governance mechanism that is sustainable and accepted by all parties may take some time to achieve, it is proposed that work towards this goal starts early on in the project with the development of a clear strategy and associated implementation roadmap. The idea would be that the parties can agree on the roadmap and transitional arrangements to allow the governance mechanism to move forwards.
- Endorsement of long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin. This should be achieved by the end of the five year project.

It is worth noting that progress has already been made towards the goal of a suitable governance mechanism. This includes:

- A letter of endorsement from the GEF focal point in Algeria expressing the Algerian Government's support for the ITTAs project
- The presence of the OMVS at steering committee meetings during development of the GICRESAIT project and
- A letter from The Ministry of Water Resources in Senegal letter in which the specific request to take into account the need to complete and improve the information systems on this sedimentary basin and on the relationships between the Senegal River Basin and the TTAS basin is expressed.

As a result of earlier GEF support, which highlighted the transboundary and common problems of the IAS, in 2009 Mali, Niger and Nigeria adopted a regional governance mechanism, the "Consultation Mechanism" for the shared management of the IAS. The preparation of the ITTAS SAP (Component 1) and other project activities will lay the groundwork to further strengthen and empower policies on conjunctive management of Transboundary ground and surface waters. Building on this, countries will further strengthen the holistic management of Transboundary ground and surface waters by: assessing the current national and regional actors in ground and surface water management and developing options for integrating surface and groundwater governance mechanisms. It should be pointed out that an agreement to move from IAS to ITTAS Consultation Mechanism was adopted by the 7 ITTAS countries in March 2015 in Abuja

In order to achieve this output, i) the regional players in the management and development of water resources, including the NBA, the IAS/ITTAS Consultation Mechanism, together with national actors, will be assessed in terms of their mandates, legal status, capacities, and priorities and ii) different options for the integrated management of surface and ground water in the immediate, short and long-term will be tabled and assessed. "Immediate" refers to the initial years of this study, for the compilation of the TDA and SAP for the ITTAS, bearing in mind that this is already an integrated study (not just for the aquifer), and then for implementation of the rest of the project, in particular Component 2, which includes a project

specifically focused on groundwater and the conjunctive management of surface and ground water.

Proposed Activities

- **A: Assessment of current regional institutional frameworks for ground and surface water management**
 - i. Assessment of NBA, IAS Consultative Mechanism, OMVS and other regional actors in terms of mandates, legal status, capacities, priorities, plans and strategies with respect to integrated management of transboundary surface and groundwater resources
 - ii. Assessment of national actors in ITTAS/NBA basin states in terms of mandates, legal status, capacities, priorities, plans and strategies with respect to integrated management of surface and groundwater resources
- **B: Development of governance options integrating surface and groundwater resources**
 - i. Develop and agree on governance options for application during the immediate future to facilitate implementation of the project
 - ii. Develop a strategy and roadmap towards endorsement of a long-term and sustainable governance mechanism and agree on transitional arrangements towards long-term governance arrangements

Output 4.1.2: Selection and Implementation of agreed Options for Integrated Governance to strengthen Conjunctive Management

By the end of the project the aim is to have a long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin endorsed and ready for implementation. Realizing this governance reform which support the conjunctive management of surface and ground waters in the existing institutional setup is quite complicated and challenging and could be highly politicized; hence, might not realistically be agreed and endorsed for utilization during the project timeline. The phased approach as described below is therefore proposed for the project to support the governments to make tangible progress on the governance reform during the project implementation. The idea is that a workable, temporary governance option can be agreed rapidly so that work on the project is not delayed (see A below). In parallel with the implementation of this temporary option, a roadmap towards agreement and endorsement of the sustainable “long-term” governance option will be developed (see B below). This will include the development and discussion of potential solutions and will culminate (no later than end of Year 4 of the project) in the finalisation of a proposal ready for high-level endorsement (see C below).

The proposed activities are summarised under A to C as follows:

Proposed Activities

- **A: Selection and implementation of agreed temporary governance options integrating surface and groundwater for immediate and short-term future**
 - i. Select preferred temporary option
 - ii. Hold regional workshop to agree and finalise details

- iii. Implement agreed temporary option for the duration of the project (or, until the more long-term sustainable governance mechanism is agreed and endorsed by all countries, whichever comes first.)
- **B: Implementation of roadmap towards endorsement of a long-term and sustainable governance mechanism and the implementation of transitional arrangements.**
 - i. Set up a technical committee/task force with representation of key stakeholders
 - ii. Monitoring and evaluation of governance mechanisms as implemented during the course of the project (agreed option for immediate and short-term future)
 - iii. Draw up detailed governance proposal and implementation plan for presentation to regional workshop of key stakeholders
 - iv. Finalise proposal for formal endorsement by representatives of concerned countries.
- **C: Endorsement of long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin**
 - i. Regional workshop to discuss long-term and sustainable governance mechanism
 - ii. Official endorsement of governance mechanism and implementation plan.

If the governance mechanism and the implementation plan are endorsed during the project implementation timeframe, then the project would support its implementation.

Output 4.1.3: Policy actions recommended at regional and national levels to further integrate conjunctive management of transboundary ground and surface waters into the SDAP, National plans and strategies, leading to mainstreaming and implementation of policy reforms

In view of the fact that strategies and plans at both regional and national levels must be aligned with policy, in fact designed to enact policy, it is important to look at what actions are required to reform these policies to reflect the new thinking in the integrated and conjunctive management of surface and ground water resources.

Many existing policies, strategies and plans relating to the management and development of water resources do not properly take into account the need to integrate across both surface and groundwater resources. This is true at both the transboundary and national levels.

Effective improvement of cooperation for the management of transboundary groundwater and surface water requires a better understanding of the main international water law instruments – 1997 UN Watercourses and 1992 UNECE Water Conventions, the Draft Articles on the Law of Transboundary Aquifers (UNGA Resolution 63/124) and of the conditions to apply them on the ground. Key principles, and elements for conventions adoption and implementation as well as needs for data collection, monitoring and reporting need to be highlighted.

A review of the main characteristics of, and interface between, domestic, regional, and international water regulatory frameworks is particularly useful in this context, to highlight practical aspects of the conjunctive use of groundwater and surface water.

For the planning of water resources management and development at the regional level, the SDAP and the associated Investment and Strategic Plans are the key documents, but as already been pointed out they do not adequately take into account the need to manage surface and ground water resources in an integrated manner. One of the important outputs of the overall project will be to integrate the results, conclusions and recommendations of the ITTAS TDA and SAP into the overall SDAP. However, in view of the fact that the ITTAS basin limits and implicated countries are not the same as the Niger Basin limits and riparian countries, it is clear that this integration will not be straightforward, especially in the absence of formalised and final governance arrangements. In view of the fact that these arrangements will only be finalised some time after the end of the project, it is important that a pragmatic approach be adopted, making use of the short-term governance arrangements to support the most effective and useful update of the SDAP and Investment Plan based on the ITTAS SAP.

The proposed activities are summarised under A to D as follows:

Proposed Activities

- **A: Assessment of policy and related institutional arrangements related to management and development of surface and ground water at the regional and national levels**
 - i. Carry out assessments at the national levels
 - ii. Carry out assessment at the regional level
- **B: Definition of target situation**
 - i. Based on best practices and ITTAS TDA and SAP define target policy at the national levels
 - ii. Based on best practices and ITTAS TDA and SAP define target policy at the regional level
- **C: Gap analysis between the current and target situation**
 - i. Carry out gap analyses at the national levels
 - ii. Carry out gap analyses at the regional level
- **D: Draw conclusions and make recommendations for policy actions to support the further integration of conjunctive management of transboundary ground and surface waters into SDAP, national plans and strategies etc**
 - i. Make recommendations at the national levels, particularly in support of the ITTAS NAPs, SAP and NBA SDAP
 - ii. Draw conclusions and make recommendations at the regional level, particularly in support of the ITTAS SAP and NBA SDAP
- **E: Review and update the Strategic Action Programme for the Niger River Basin and its associated National Action Plans**
 - i. Building on newly accumulated knowledge on the NB-ITTAS basin through activities under other Components as well as results from the governance and institutional assessment conducted under Comp 4, review the NB-SAP and

accompanied NAPs, taking fully into account the context and their linkages to SDAP, national plans and strategies.

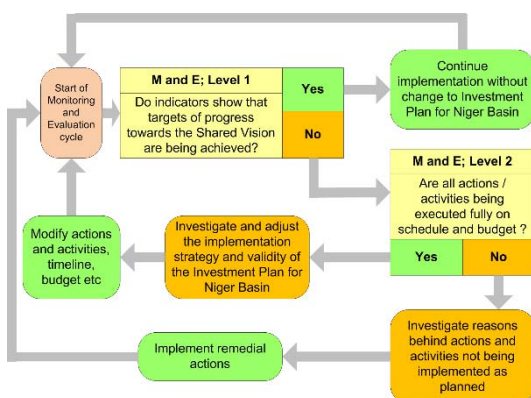
- ii. Update SAP and NAPs.

Output 4.1.4: Formalisation of National level Support to Implementation of the Investments Plan and Development and Implementation of Dedicated Monitoring and Evaluation Tools

As indicated earlier in this document, in July 2007 the Summit of Heads of State and Government approved the Sustainable Development Action Plan (SDAP) for the Niger Basin and the SDAP's associated Investment Program (IP 2008- 2027). The Summit agreed also on the creation of a donors' meeting for the implementation of the 2008-2012 priority five-year plan. Following the incorporation of the SAP actions into the SDAP and IP, the revised versions of these two documents became the guiding documents for the management and sustainable development of the water resources of the Niger Basin through to 2027.

Under the UNDP/Shared Water Partnership Programme, the NBA engaged in a consultation process with Parliamentarian and Ministries of Finances of the nine countries to support the implementation of the Investment Plan. GEF resources will reinforce this consultation process by developing/implementing dedicated monitoring and evaluation tools (Work Plan, Aide Memoire, etc.) and facilitating linkages with the existing mechanism for Donor Coordination.

Implementation of the Plan and ensuring that this implementation leads to the desired results in terms of progress towards the Shared Vision must be seen as the top priority of the NBA and its member states. The aim of this output is to support the achievement of this priority. One of the important tools to be developed and implemented will be a monitoring and evaluation tool aimed at both i) monitoring the planned implementation of the plan in terms of schedule and budgeting and ii) in terms of progress towards the objectives of the plan. The second of these is the most important since it is the realisation of these objectives that results in progress towards the shared vision. This monitoring and evaluation cycle at these two levels is illustrated in Figure 2-1. It is proposed that a high-level implementation committee be set up and that this committee meets once a year. A smaller working group should also be put in place to work closely with the Coordinator of Component 4 and to ensure that the work leading to this output is conducted satisfactorily. The working group would also report to the Implementation Committee on a regular basis.



Monitoring of progress will require a high level of stakeholder participation with regular stakeholder feedback providing important information for the evaluation of indicators. Making provision for the stakeholder participation will be part of the design of the monitoring and evaluation plan.

Figure 2-1 Monitoring and Evaluation Framework:

These stakeholders may also need to be trained on a result-based management approach to establish a common framework for monitoring and evaluation as a robust foundation to measure and compare progress on national and regional levels

Proposed Activities

- **A: Setting up of Implementation Committee and Working group**
 - i. Develop terms of reference for the implementation committee and working group
 - ii. Put implementation Committee in place, hold first meeting/workshop and appoint working group
 - iii. Working group meets on a regular basis
 - iv. Implementation Committee meets annually prior to NBA Council of Ministers meeting
- **B: Discussion and preparation for implementation of the Investment Plan**
 - i. Detailed discussion of planned activities for the next 2 years
 - ii. Takes actions to ensure that resources are in place or planned for implementation of the Plan over the next two years
- **C: Monitoring and Evaluation of implementation of the Investment Plan**
 - i. Review existing monitoring and evaluation plan for implementation of the SDAP and Investment Plan.
 - ii. Propose a revised monitoring and evaluation framework and plan with indicators of progress toward realisation of the Shared Vision
 - iii. Approve and implement revised monitoring and evaluation framework and plan
 - iv. Prepare quarterly and annual monitoring and evaluation reports with clear recommendations for remedial action where required.
 - v. Updating and revision of monitoring and evaluation framework and plan
- **D: Training on Monitoring and Evaluation and results-based approach**
 - i. Draw up training materials and agree implementation plan
 - ii. Provide training at national and regional workshops

Output 4.1.5: National institutions contributing to the management of transboundary terrestrial ecosystems and wetlands provided with platforms for cooperative actions and capacity building to address current emerging challenges and promote collaborative monitoring mechanisms

There are clearly many institutions and organisations involved in some aspects of the management of transboundary terrestrial ecosystems and wetlands. By their very nature, transboundary systems require the cooperation of these national level institutions across national borders. Further, to realize the ecosystem-based approach and practice IWRM, inter/intra-sectoral coordination of various institutions are required. With support from GEF resources, Niger Basin Member States will establish platforms for cooperative actions and

capacity building in **managing** transboundary terrestrial ecosystems and wetlands to address current emerging challenges and promote collaborative monitoring mechanisms²⁸.

A platform will be established for a selected, targeted ecosystem. For which ecosystem a platform will be established will be decided during the priority exercise under Activity A below. The site identification of the demonstration activities implemented under Component 2 will also influence the site selection for the platform establishment.

Once a platform is established, it will be fully utilized in the process of strengthening joint monitoring mechanism for that particular ecosystem for which the platform is established, implementation of joint monitoring activities, realizing collaborations required to pilot innovative/green technologies in that targeted ecosystem. Collaborative platforms will play the pivotal role in the planning and implementation of all the proposed activities under 4.1.5 to ensure participatory and multi-sectoral aspects of the IWRM implementation in the basin, and equally importantly to ensure women empowerment and inclusiveness in the implementation of all proposed activities.

Where community-based demonstration activities supported by Component 2 are planned within the target ecosystem for a given platform, the platform will act as a critical forum to inform relevant national institutions about the progress made by the community-based demonstration activities. Through the platform, relevant national institutions may also provide advisory and coordination support to the demonstration activities in return.

The project team supporting the Component 4 will provide necessary support to the platforms so that it will optimally function and efficiently support the basin-wide efforts towards the sustainable management of transboundary terrestrial and wetland ecosystems led by NBA until such time that the sustainability plan is developed and implemented, which ensures the sustainability of the platform(s) without the project support beyond the lifetime of the project.

The overall objective of a platform may be clearly defined as *“to promote and realize ecosystem-based approach and practice IWRM through improved inter/intra-sectoral coordination as well as coordination among national/sub-national/local institutions, programmes, projects for the sustainable management of the targeted ecosystem.”* The platform is essentially a mechanism to fill in the coordination gaps currently exist and to ensure participation of local institutions and communities in the management decisions and implementation actions for the conservation and sustainable utilization of the targeted ecosystem. Yet, the details of the initial TOR, including roles and responsibilities and membership of a platform, must be developed with fully taking into account the existing and current capacity and constraints in place for each ecosystem for which a platform will be established. No one-size-fits-all approach should be applied here for the platform to function. It should start relatively small where capacity is limited and grow slowly. Who will convene a platform meeting and how often it will meet will also depend on what is currently practiced on the ground in terms of inter/intra sectoral coordination for a targeted ecosystem

²⁸ A new IUCN initiative is under development for the identification, establishment and support of a basin network of important inland waters, including Ramsar sites and other protected areas, as a functionally connected and more effectively managed portfolio of priority locations for securing freshwater ecological integrity, assets and service. The project will take into account these emerging efforts and other relevant efforts that promote cooperative actions and capacity building when supporting the countries to establish the platforms.

as well as the resources availability to support such coordination efforts (by the project and others).

A platform will facilitate a process for relevant national institutions participating in the platform to develop and agree on a joint monitoring mechanism for its target ecosystem in order to monitor priority environmental and socioeconomic status indicators as well as the effectiveness of stress reduction measures implemented by the project (through demonstration activities in Component 2 and/or through innovative/green technology pilot activities). It will address a series of large-scale management priorities including an assessment of habitat connectivity, water resources vulnerability and the status of threatened species, as well as the response of these factors to major ecosystem drivers such as climate change, human development, the spread of invasive species and natural disturbance.

A platform will also facilitate collaboration among national institutions participating in the platform to jointly agree and pilot suitable innovative/green technologies in sustainable management of natural resource, development of Payment for Ecosystems Services (e.g. carbon credit, ecotourism), etc., **in the target ecosystem.**

Capacity needs assessment and gap analysis will be conducted for the relevant national institutions to effectively participate in the platform discussions, joint monitoring activities, and to collectively contribute to the ecosystem-based management in the target ecosystem. Based on the results of the capacity needs assessment and gap analysis, a capacity development programme will be developed and implemented for each platform.

The proposed activities are summarised under A to D as follows:

Proposed Activities

- **A: Set up platforms for cooperation and collaborative action**

- i. Identification of critical (transboundary) terrestrial ecosystems and/or wetlands for which platforms should be created with support by the project. (ie. target ecosystems)
- ii. Identification of relevant national institutions involved in the management of each of the target ecosystems identified and representatives
- iii. Hold an inception workshop with the identified relevant national institutions, NBA representatives AND wider stakeholders, including experts and civil society representatives, to identify and prioritise emerging challenges for the target ecosystem, set up a platform and agree modus operandi and TOR for the platform.
- iv. Operationalise the platform(s)

- **B: Design and implement capacity building programme**

- i. Assess needs and existing capacity and carry out a gap analysis
- ii. Design capacity building programme for each platform.
- iii. Implement capacity building programme

- **C: Design and implement Joint Monitoring System**

- i. Design a joint monitoring system for each target ecosystem for which a platform was established. Develop an implementation plan for relevant national institutions participating in the platform to actively participate in the joint monitoring exercise.
 - ii. Implement joint monitoring system according to the implementation plan
 - iii. Draw up quarterly monitoring assessments and annual reports with conclusions and recommendations for submission to NBA and the relevant national institutions.
- **D: Pilot introduction of innovative/green technologies**
 - i. Identify and agree on which innovative/green technologies supporting sustainable management of natural resources are to be piloted and where, for each target ecosystem, in consultation with the platform. If community-based demonstration activities supported by Component 2 are planned within the same ecosystem, then it would be highly desirable to ensure the innovative/green technology activities to be piloted and the demonstration activities are complimentary.
 - ii. Draw up site-specific concept notes for each pilot project
 - iii. Set up the operational project team, including stakeholder representation
 - iv. Detailed planning and design of individual projects
 - v. Implement all core activities of the pilot projects
 - vi. Conduct training workshops in project management and specific project-related aspects, as necessary.
 - vii. On-site experience sharing with other platforms in support of learning and future replication and upscaling
 - viii. Organize regional and national workshops for sharing experiences in piloted innovative/green technologies

Output 4.1.6: Capacities of academic and research institutions strengthened with tools and training to provide relevant knowledge and information guiding the management of basin resources

The World Bank Water Resources Development and Sustainable Ecosystem Management (WRDSEM) Programme is providing 'horizontal' support across the region to help the NBA to consolidate its institutional and legal frameworks and 'vertical' support to countries to improve water resources development and management activities at local and national levels. Under Component 1, means and training are provided on project management to NBA, National Focal Structures and other institutions participating in the development of the ITTAS TDA and SAP. The CIDA supported Programme on Niger Basin Authority Capacity-Building is making NBA an institution with a legal and institutional framework, an organization that can truly operate and perform on a long-term basis, focusing on the basin's sustainable development for the well-being of communities on the Niger River. However, support to NBA on ecosystem management from academic and research institutes is still insufficient and lacking. Under GEF support, tools and training will be provided to academic and research institutions to provide relevant knowledge and information guiding the management of basin resources.

Achievement of this output will ensure that academic and research institutions within the region are in a position to provide the necessary support to the NBA on ecosystem management. This could be through specific relevant and targeted research programmes, provision of training courses, and provision of technical and scientific expertise. Subject areas could be wide-ranging but could include conjunctive water resources management, genetic resources, climate vulnerability and risks etc.

It is proposed that the UNDP/ CAPNET Programme is involved in the process to give substantial support on the training. Linkages will be made with GEF Nagoya Protocol Implementation Fund in supporting scientist in the area of genetic resources. However, it should be noted that within the framework of the UNDP/CAPNET programme, the Regional Coordination of Users of the Natural Resources of the Niger Basin (RCUNB) have already organised four training sessions on groundwater with CAPNET and in collaboration with AIH since 2012.

Proposed Activities

- **A: Analyse priority areas and potential source for support for human resources and equipment)**
 - i. Analyse priority areas for human resources training and equipment needs
 - ii. Source potential providers of capacity building (eg UNDP/ CAPNET Programme and GEF Nagoya Protocol Implementation Fund) in supporting scientists in the area of genetic resources
 - iii. Source potential providers of equipment and associated budgetary support
- **B: Identification of suitable and interested academic and training institutions**
 - i. Discussions with academic and training institutions to ascertain interest and capability
 - ii. Develop proposal for the provision of training aimed at capacitating interested academic and training institutions (intensive onsite, masters and doctorates)
 - iii. Development of training courses for water practitioners
- **C: Implementation of training programmes**
 - i. Finalise implementation plan
 - ii. Implement training programmes
- **D: Acquirement of specialist equipment**
 - i. Definition of equipment requirements
 - ii. Acquirement of equipment

Output 4.1.7: Transboundary Learning mechanisms established at community and Inter States levels; and experiences shared through website, IWLEARN, technical papers, video, technical forums, GEF IW Biennial Conference, WWF, AMCOW and other relevant forums

The achievement of this output will see transboundary learning mechanisms established at different levels. It is important that these actions are well-coordinated and purposeful. To that end the first step should be to develop a communication strategy which i) clearly defines the potential target audiences, their needs, concerns and interests, ii) looks at available

communication and information dissemination mechanisms and iii) presents options for the most effective dissemination of information.

Available communication and dissemination options include the NBA and OSS websites and other communication tools. IWLEARN, the GEF international water biennial conference, the WWF and AMCOW all offer additional options. In particular, in view of the fact that all participating countries are members of AMCOW, which promotes IWRM including the integration of surface and ground water management, opportunities for cooperation with ANBO, the technical arm of AMCOW, will be maximised.

The importance of this output should not be underestimated. Just as the importance of stakeholder participation has consistently been underlined as part of project design and implementation, it is clear that capacitation of stakeholders is equally important and which will in fact contribute to better project design and implementation. This output aims at achieving the widest possible range of stakeholder capacity-building through experience-sharing and the dissemination of a wide range of learning materials.

In terms of experience, sharing the outputs achieved under Component 2 and Component 3, will be particularly relevant and this output will support efforts aimed at replication and taking to scale. The position of the Component 4 project coordinator as also being in charge of the PCU will facilitate this task since he/she will have a good overall knowledge of progress with the other components.

The following activities are proposed:

Proposed Activities

- **A: Development of Communication Strategy and Plan**
 - i. Carry out stakeholder analysis
 - ii. Draw up communication strategy and implementation plan
- **B: Implementation of Communication Plan**
 - i. Appoint transboundary implementation support committee and champions
 - ii. Implementation of Communication strategy

2.5. Alignment with regional and country priorities

2.5.1 Introduction

It is important to stress that the proposed programme has been built on a long consultative process, not only directly as part of this project preparation but also under other initiatives such as the NBA Strategic Development Action Plan and the associated Investment Plan. The SDAP was developed on the premise of using country-identified interventions as the point of departure and then focussing on potential transboundary incompatibilities, social and environmental impacts and the maximisation of opportunities. The NBA Investment Plan, into which the NBA SAP is fully integrated, can be seen as entirely aligned with the region and country priorities.

2.5.2 Policy Conformity and Country ownership

This GEF project is in conformity with several international and national policies. These include international binding, non-binding and national policy instruments.

International binding instruments include the Ramsar Convention and the Convention on the Law of Non-Navigational Uses of International Watercourses.

The Ramsar Convention, an international treaty for the conservation and sustainable management of wetlands recognizing their fundamental ecological functions and their economic, cultural, scientific, and recreational value, has been ratified by all NBA member States. International organization partners of the Ramsar Convention, such as the International Union for Conservation of Nature (IUCN), the International Water Management Institute (IWMI), and Wetlands International have been providing expert technical advice and financial support to NBA and OSS for the sustainable management of wetlands across the Niger Basin and the ITTAS. This partnership will sustain through some interventions under this GEF project.

The Convention on the Law of Non-Navigational Uses of International Watercourses imposes upon member Parties an obligation to consider the impact of their actions on other States with an interest in a water resource and to equitably share the resource. It also requires states to take reasonable steps to control damage, such as caused by pollution to the watercourse, and imposes an obligation on states that damage a shared water resource to take steps to remedy the damage or to compensate sharing states for the loss. While only Burkina Faso, Cameroon and Ivory Coast voted favourably to this Convention, the revised NBA Convention stipulates in Article 3 that “the aim of the Authority is to promote cooperation among the member countries and ensure an integrated development of the Niger Basin in all the fields of energy, water resources, agriculture, livestock, fishing and fish-farming, forestry and forestry exploitation, transport and communications and industry”. Article 4 stipulates that the mandate of the NBA is among others “to harmonise and co-ordinate national water resources development policies of the Niger Basin”. As it emerges from the revised Convention, cooperation and integrated water resources management should inform any activities around the Niger Basin.

Non-binding instruments include the Rio Declaration on Environment and Development, Agenda 21, Millennial Development Goals, and the NEPAD’s Water Vision for Africa, the United Nations Resolution A 63/124 on law of transboundary aquifer, the United Nations’ Declaration on the Human Environment

The Rio Declaration consists of 27 Principles, which intend to guide future sustainable development around the world. The most relevant Principles to this GEF project are: Principle 7 on “State Cooperation to Protect Ecosystem” stipulating that States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem; Principle 9 on “Capacity Building for Sustainable Development”, which indicates that States should cooperate to strengthen endogenous capacity-building for sustainable development. This need is reflected into this GEF project under Component 4 on building capacity for stakeholder involvement in Niger Basin ecosystem-based management; Principle 10 on “Public participation” stresses that Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. This concern is addressed under the Component 2, which expected Outcome is “Local communities and Niger Basin civil society platforms are engaged on basin resources management and conservation.

Agenda 21 of the Earth Summit (Rio de Janeiro, 1992) is an action agenda for the UN, other multilateral organizations, and individual governments around the world that can be executed at local, national, and global levels. On Chapter 18, it emphasizes the need for integrated management and sustainable development of coastal and marine areas. This is consistent with Component 1 on the “Conjunctive management of surface water and underground water”.

NEPAD's water programme was developed to address the many challenges on the continent in managing water resources. The programme has a Short Term Action Plan (STAP), which is part of the African Water Vision framework and maps strategies through to 2025. The main emphasis of this programme is the development of national integrated water resources management policies and strategies, and the management of trans-boundary water resources to become a basis for national and regional cooperation and development. This aligns in all with the objective of this GEF project.

At the national level, the most appealing issues to this GEF project relate to the inclusion of issues related to international cooperation for transboundary water management, mainstreaming of groundwater and conjunctive management, and protection of water from pollution into national legislation.

2.5.3 International cooperation for transboundary water management

The need for international cooperation for transboundary water management is yet to be articulated in the national legislation of most of the countries within the Niger Basin and ITTAS. Only five (5) countries (Benin, Mauritania, Niger, Nigeria and Guinea) out of eleven (11) clearly include international cooperation for water management. For the other six (6) countries (Algeria, Chad, Cameroon, Mali and Ivory Coast) this issue is either not taken into consideration or clearly specified.

- For Benin, Article 15 of Law n° 2010-44 of November 24, 2010 on water management stipulates that “the Republic of Benin cooperates with other States for the implementation of international agreement ratified, especially those related to the prevention and elimination of marine pollution, for the use and function of water of transboundary nature”.
- Article 13 of Water Code n° 2005-030 of February 2nd, 2005 of Mauritania stipulates that “the Minister in charge of water represents the Islamic Republic of Mauritania to intergovernmental organizations of international or regional nature, specialized in issues related to water, and promotes international and regional cooperation. It ensures the implementation of agreements, conventions and international or regional treaties on water, to which the Islamic Republic of Mauritania is a Party ”.
- In Niger, Article 172 of the Constitution of November 25th, 2010 stipulates that “the Republic of Niger may conclude agreements of cooperation and of association with other States on the basis of reciprocal rights and advantages. It accepts to create with these States intergovernmental organs of common administration, of coordination and of free cooperation. These organs may have as their objective, notably cooperation in the matters of the administration of the hydraulic resources”. This is further reinforced by Article 14 of the Water Code n° 2010/09 of April 1st, 2010, which stresses that “The Republic of Niger cooperates with other states and is committed to implement treaties,

international conventions and agreements relating to knowledge, governance, preservation, protection, mobilization and use of transboundary water resources”.

- The Constitution of the Federal Republic of Nigeria of 1999 in 251 (1) (g) stipulates that “Notwithstanding anything to the contained in this Constitution and in addition to such other jurisdiction as may be conferred upon it by an Act of the National Assembly, the Federal High Court shall have and exercise jurisdiction to the exclusion of any other court in civil causes and matters - any admiralty jurisdiction, including shipping and navigation on the River Niger or River Benue and their affluents and on such other inland waterway as may be designated by any enactment to be an international waterway, all Federal ports, (including the constitution and powers of the ports authorities for Federal ports) and carriage by sea”.
- In Guinea, Article 55 of the Water Code n°L/94/ 005/CTRN of February 15th, 1994 stipulates that “In its relations with countries it shares water resources with, the Republic of Guinea applies within its territory the principles and standards generally accepted by the international community in the field of shared water in particular the provisions of conventions to which it has subscribed”. Burkina Faso exemplifies countries, where the legislation addresses transboundary water management within the scope of broader environmental issue. For example, Article 145 of the Code of Environment n°006-2013/AN stipulates that “the management of transboundary environmental issues is done in consultation with the State(s) concerned, in accordance with international standards”

2.5.4 Solidarity with conventions on desertification, climate change and biological diversity

Seven of the participating countries (all those within the ITTAS area) have elaborated National Action Plans (NAPs) in support of the following Rio conventions:

- United Nations Convention to Combat Desertification (UNCCD)
- United Nations Framework Convention on Climate Change (UNCCC)
- United Nations Convention on Biological Diversity (UNCBD)

The national action plans identify key priorities and report on the status and progress with these processes. With respect to climate variability and land degradation issues, which are important considerations in this project, the NAPs highlight the importance of better managing and mobilizing water resources (surface and ground water) in order to strengthen the agriculture sector and manage lands in a sustainable way for the benefit of populations. They thus share a consistent regional response which requires national and especially, the sort of local-level actions that are included in this project.

2.5.5 Mainstreaming of IWRM

The project is consistent with global, regional and national conventions, strategies and policies related to Integrated Water Resources Management (IWRM). For example, the West African countries adopted in 1998 the «Ouagadougou Declaration» related to implementing IWRM principles with a view towards moving from sector-based and fragmented water management approaches to integrated, holistic and participatory approaches. This framework of concerted

action includes the ITTAS/NBA countries. It also represents an opportunity to develop and strengthen technical and institutional cooperation with the Permanent Coordination and Monitoring Framework (CPCS) of ECOWAS, whose coordination unit (WRCC/ECOWAS), has been set up within the IWRM implementation framework in partnership with the African Ministerial Conference on Water (AMCOW).

All participating countries are members of AMCOW, which promotes IWRM including the integration of surface and ground water management (AMCOW, 6th Conference, Brazzaville, 2007). A specific commission of AMCOW for groundwater was recently created. The outcomes of the First African Water Week (AWW-1), convened in March 2008 under the theme of “Accelerating Water Security for the Social and Economic Development of Africa” made the following recommendations related to groundwater: i) Harness local groundwater resources to improve livelihoods and manage risks associated with climate change, ii) Institutionalize dialogue on groundwater management in Africa, and iii) implement the Roadmap for the African Groundwater Commission under AMCOW. The proposed project will advance all of these thematic priorities, which are both regionally and nationally agreed.

In order to promote socio-economic development and preserve the balance of the water resources of the basin, the Niger Basin Authority (NBA) member countries are engaged in a “Shared Vision” process for the sustainable development of the Niger River basin. This strategic initiative, as well as several other development efforts, could be jeopardised without a better knowledge of the water resources potential and of the dynamics of exchange between the Niger surface waters and the ITTAS groundwater. The adoption in April 2008 by the nine Niger River riparian countries of the Niger River Water Charter highlighted the importance of integrating groundwater in management processes in the basin. The Strategic Action Program (SAP) for the Environment of the River Niger Basin 2011-2027 adopted in November 2011 includes amongst its priority actions ‘an improved understanding of the relationship between surface and ground waters’. In this way, the proposed project contributes to the implementation of the River Niger Basin SAP.

2.5.6 Mainstreaming groundwater and conjunctive management in national legislation

the issue of conjunctive management is yet to emerge for most of the member states. However for Benin and Burkina-Faso significant progress has been made. In Benin, the Law n°2010-44 organizing water management stipulates in Article 9 that “Sustainable management of water refers to careful and rational utilization of water based on scientific data, solidarities characterizing surface and underground waters, as well as respect to international commitments and general principles for the protection of the environment in the Republic of Benin”. Article 18 indicates that “Water public domain includes surface water and ground water, as well as their dependencies and public infrastructure allocated or needed for their management”. In Burkina Faso, Law n° 002/2001/AN related to water management in Article 3 stipulates that “water management should take into consideration, in their globality and reciprocal relationship, scientific data and solidarities of all nature that characterize hydrographic basins”. Article 6 stresses that “water public domain includes water in different physical states and geomorphological situations, as well as public infrastructure allocated or needed for its management. It includes among others watercourse and ground water”. Other countries, such as Algeria and Ivory Coast rather put forward the principle of integrated management which specifically mention both surface and ground water. The Water Code n°L/94/ 005/CTRN of February 15th, 1994 of the Republic of Guinea indicates in Article 2 that

“the basic management unit of water resources is the watershed or a group of watershed, meaning the geographical area in which all surface and ground waters are drained to a common outlet”. In Nigeria, Water Resources Decree no 101 of August 23rd, 1993 vests in the Federal Government the right to the use and control of all surface and groundwater, and of all water in any water-course affecting more than one State. According to the schedule, waters-sources declared as affecting more than one State referred to all water, whether surface or underground, from time to time, contained within or flowing or percolating through such sources and the tributaries and catchment areas. The Niger Basin is specifically cited as one of them. In Mali, Articles 18 and Articles 19 to 23 of the Water Code n°02- 006/ of January 31st, 2002 referred respectively to surface and underground waters..

2.5.7 Protection of water from pollution and protection of aquatic systems

Across the Niger Basin and ITTAS, the protection of water resources from pollution proceeds from various approaches including environmental impact assessment of projects, regulation of specific pollutants and water withdrawal, protection of wetlands, delimitation of water public domain, etc. In Algeria, Article 30 of the Law n°05-12 of August 4th, 2005 stipulates that “Protection and preservation of water resources are ensured by: quantitative protection area; plans to combat hydrological erosion; qualitative protection area; protection and prevention measures against pollutions; and flooding risks prevention measures”. Several other legal instruments have been put in place to regulate the protection of water resources. In Benin, the protection of water resources is regulated under Chapters IV, VIII and IX of the Law n°2010-44 of November 24th, 2010 on water management. Under Chapter IV, Article 28 indicates that “The implementation of the policy for the conservation of water resources requires the definition of objectives of quality for surface and underground water bodies”. Decree n° 2011-671 of October 5th, 2011 defines procedures for the delimitation of protection perimeters. A similar approach of water protection through protection perimeters is applied in Burkina Faso. Article 33 of the Law n°002-2001 of February 8th, 2001 stipulates that “In order to ensure the protection of water quality, the authorization of works, installations, and structures realized for the withdrawal of surface water and underground water for human consumption or the authorization of the withdrawal itself delineates around the point of withdrawal a perimeter of immediate protection, a perimeter of close protection, and if necessary a perimeter of distant protection”. In Niger, Article 44 of Ordinance n°2010-09 of April 1st, 2010 on Water Code suggests that water projects, and in general facilities, structures, works and activities associated with the withdrawal of surface or underground waters, modification of the level or water flow modes, spills, runoff, discharge or deposit are subject to authorization, declaration or concession for water use, based on their nature, location, and the importance of their effects on water resources and aquatic ecosystems. In Nigeria, Decree n°101 of August 23rd, 2013 in Article 1 stipulates that the right to the use and control of all surface and groundwater and of all water in any water-course affecting more than one State is vested in the Government of the Federation for the purpose of ensuring the application of appropriate standards and techniques for the investigation, use, control, protection, management and administration of water resources. In Cameroon, water protection is regulated by Title II of the Law n°98/005 of April 14th, 1998 on the Water Regime. Article 4 prohibits spills, runoff, streams, seepage, landfill, spraying, direct or indirect deposits in the waters of any solid, liquid or gas, in particular, industrial, agricultural and atomic wastes likely to: (a) alter the quality of surface water or groundwater, or the sea within the territorial limits; (b) undermine the public health and wildlife and aquatic flora or underwater; and (c) question the economic and touristic development of regions. However, the Minister in charge of Water, after investigation and consultation with other Administrations

concerned, can authorize and regulate discharges referred to above, where they guarantee the safety and the absence of nuisances given the characteristics of the effluent and the receiving environment. Article 6 stipulates that any physical or legal person, owner of a facility susceptible to pollute water must take all necessary measures to limit or eliminate its effects. Any person who produces or holds waste must ensure himself the disposal or recycling, or have them eliminated or recycled in facilities approved by the Administration in charge of classified establishments after binding opinion of the Authority in charge of the Environment. Further prohibited is the cleaning and maintenance of motor vehicles, internal combustion engines and other similar devices near water. For Chad, Article 20 of the Water Code n°016/PR/99 establishes protection perimeters intended to safeguard the quality and quantity of surface and underground water aquifers from pollution risks that may be discharged from facilities or other management nearby. In addition to protection perimeter, Law n°L/94/005/CTRN of February 15th, 1994 on Water Code in Guinea only addresses the issue of the protection of the water quality. Article 31 stipulates that the evacuation and dumping into the waters, at the soil surface, at depth, of any matter susceptible to cause pollution are subject to authorization from the Ministry in charge of environment after consultation with the Ministry in charge of hydraulic. Article 27 prohibits spills, discharges, releases, direct and indirect deposits of any nature that may cause or increase the pollution of Guinean inland waters. Article 33 also prohibits the discharge, dumping and incineration in maritime waters under the Guinean jurisdiction substances of any kind that could: (a) undermine the health of human and marine resources; (b) harm marine activities, including boating and fishing; (c) degrade amenity values and tourism potential of the sea and coastline.

2.5.8 National strategies and plans under NPFE

With the exception of Cote d'Ivoire and Algeria, all of the NBA/ITTAS countries have carried out National Portfolio Formulation Exercises (NPFE), between 2011 and 2013. These will serve as a priority setting tool for countries and as a guide for GEF Agencies as they assist recipient countries. Most of the core actions proposed in Components 1 to 4 and especially Component 2 reflect the project ideas included in the national portfolios. For example, in the NPFD for Guinea, project ideas to be included in the national portfolio are included under three areas, climate change, biodiversity and land degradation.

2.5.9 Mainstreaming of information and participation of water users

The issue of information and participation of water users is addressed in various ways in the national legislation within the NBA and ITTAS countries. In some countries, such as Benin, Ivory Coast and Guinea, this issue is given a prominent importance. In Benin, Law n°2010-44 of November 24, 2010 on water management indicates in Article 10 that "Decisions about water management are made, depending on the case, by the competent authority at the national, departmental and council levels in consultation with basin institutions and users organized into interest groups at the condition that no condition of general interest or efficacy is opposed to". Later, Article 11 stipulates that "The ministry ensures that the public, including users and the populations affected by a water development, a measure or a water management plan, participate in decision-making and receive the appropriate information from authorities. In Ivory Coast, Article 6 of the Law n°98-755 of December 23rd, 1998 indicates that the Water Code adheres to the principles recognized in the integrated management of water resources including participation.

Furthermore, Article 9 stipulates that “The management and development of water resources, facilities and water works must involve at all levels: (a) planners, policy makers and experts in the field; (b) operators and (c) users. In Guinea, the scope of participation of users is extended to all matters related to water management, as indicated by Article 3 of the Law n°L/94/005/CTRN of February 15th, 1994, which stipulates that “In each watershed or group of watersheds, a watershed committee can be created at the initiative of the National Directorate of Water and that this will be composed of representatives of Territorial Administration and representatives of users. This body may be consulted on all matters related to this Code”. In other countries, such as Burkina Faso, Niger and Algeria, the issue is also addressed though with less a little less emphasis. In Burkina Faso, Article 15 of the Law n°002-2001/AN of February 8th, 2001 on Water Management stipulates that “The Ministry in charge of water ensures that populations concerned by water development or a measure of water management receive appropriate information. It organizes and defined modalities for consultation leading to the improvement of water management in local communities and villages”. In Niger, the Ordinance no2010-09 of April 1st, 2010 on Water Code indicates in Article 9 that water management is guided by the need to engage users, planners and decision makers at all levels of management and development of water resources. Article 68 of the Law n°05-12 of August 4th, 2005 of Algeria stipulates that the Administration in charge of water resources provides to anyone who wants to undertake an authorized project aiming to withdraw water from a natural hydraulic public property for public or private use, any available information of hydrological and hydrogeological orders, as well as all information relating to qualitative and/or quantitative prescription protections.

2.6. Coherence with ongoing initiatives

2.6.1 Introduction

As indicated in Section 2.2 the project follows on from a number of previous projects. However, there a number of other recently completed, ongoing and planned initiatives which add value or to which the envisaged project will add value. It is important to take these initiatives into account in order to maximise opportunities for synergies and minimise duplication. The projects cited are those executed by the NBA. The NBA is therefore well-placed to ensure that all initiatives are well linked and coordinated. There are also other projects executed at the national and regional levels within the basin. The NBA focal points in each country are involved in these, or at least aware of them, which ensures that they are properly taken into account.

2.6.2 Water Resources development / infrastructure

- The *Water Resources Development and Sustainable Ecosystem Management Project* (WRDSEM) will improve the regional coordination and the development and sustainability of water resources management in the Niger Basin, as well as providing funding for the rehabilitation of large dams in the Basin. The first phase (186 million USD from 2007-2014) targeted the main stem countries Guinea, Mali, Niger, Benin and Nigeria, and completed many studies on the rehabilitation of small dams combined with the identification of income generating activities, small irrigation schemes, environmental impacts assessments, etc., including training and sensitization activities with respect to biodiversity and in support to the sustainable management of lands, etc. Under its Adaptable Programme Loan (APL)-II phase

(250 million USD), the World Bank, along with AfDB, IDB and cooperating partners, are funding more than 850 million USD for the Kandadji Program (for hydro-power and irrigation development, RAP and LDP). A further loan is also planned, which would expand in-country investments to all nine riparian countries

- The KFW has been supporting the NBA since 2007, financing the *River Niger Protection Project*, and the “Rehabilitation of public irrigation schemes in the Republic of Niger” project. Total support amounts to 21 million euros.

2.6.3 Institutional capacity building and stakeholder participation

- Under APL-II phase of the WRDSEM, a 3 million USD grant is included for institutional strengthening of NBA to (i) provide support to project management and supervision by NBA, (ii) update the 2004 institutional and organizational audit of the NBA, and (iii) support the implementation of the Niger Basin’s Water Charter
- The GIZ supported NBA for the development of the Water Charter through the “Support to NBA” project, which was endorsed by all the member states and came into force in July 2010. The NBA also had the Annex I of the Charter adopted by the member states in October 2014. . This annex concerns protection of the environment. Annex III, concerning notification procedures for projects with a cross-border impact was adopted in December 2014.
- The Canadian International Development Agency (CIDA) has been funding the “*Capacity Building Program of NBA*” for an amount of 7.75 million CAD during the period 2009-2014 with the objective to improve NBA’s administrative and financial systems and human resources management, and strengthen NBA’s information and communication system, public participation, its technical expertise, its intervention and M&E capacity, and its focal structures in the member countries. The Program also aimed to establish a suitable legal framework for NBA’s role in the development of the Basin’s shared water resources.
- The EU has supported NBA in i) setting-up legal frameworks and stakeholder consultations for its investment programs, ii) environmental impact assessments for the Fomi dam in Guinea (under the Water Charter), and iii) hydrological forecasts based on earth observation.
- The UNDP/Cap-Net Program supports the NBA by building the capacity of national stakeholders on the IWRM planning and implementation through the development and roll-out of various trainings related to IWRM, including the implementation of ecosystem restoration actions, setting up funding mobilization mechanisms, poverty reduction actions and promoting the participation of the stakeholders as well as strengthening of national capacities on climate changes risks and vulnerability management (e.g. BCPR Niger, PAGEDD Mali)

2.6.4 Knowledge base

- AFD (Agence Française de Développement) and the African Water Facility (AWF) established the ongoing *Niger-HYCOS Project* in 2006. The project enables the NBA and the National Hydrological Services (NHS) of the member states to operate appropriate and sustainable hydrological information services, thus contributing to knowledge-based water management. In its second phase, HYCOS-2 is establishing an internet-based comprehensive water resources information system at Basin scale, including both historic and up-to-date hydro-meteorological data of good quality, which will be easily accessible to all types of users. The Niger-HYCOS is part of the world-wide WHYCOS of WMO. Before that, also the HYCOS project Niger provided an Information System for Water Resources Assessment and Management of the Niger Basin, through support to the Niger river basin hydrological

observing system, which included the establishment of 65 data collection **nodes**, an operational hydrology data bank and the establishment of flood prediction models, including information and products on water resources management, environmental protection and protection of life and property against water-related risks (floods and drought).

- German Economic and Development Cooperation through BMZ is engaged through BGR in sustainable development issues related to groundwater through the “*Support to ground water management in the Niger basin*” project. GIZ focuses mainly on capacity building in NBA regarding the shared management of surface and groundwater resources. It will be important during project inception to get a precise understanding of expected outcomes and capacity building activities and how they may link into conjunctive management.
- The NBA’s capacities were strengthened through the funding of the project “*Support for the creation of an Environmental Observatory for the River Niger Basin*” with the financial backing of the French Global Environmental Facility (F-GEF or FFEM in French)

These projects established the major knowledge base used by NBA. This has led in summary to a good understanding of groundwater-surface water interactions on water balance and water quality and transboundary territories, and an understanding how flows are supported by groundwater, but there is a gap in quantification of the exchange between surface and groundwater, while the location of infiltration zones or entry points into the Niger river are more or less known

2.6.5 Transboundary Issues+

- “Support to Ground Water” project by BGR will implement activities on sustainable management of transboundary aquifers in collaboration with NBA and National Focal Structures

The GEF *TWAP Full Size Project* (FSP): The objective of the FSP will be to identify and improve the understanding of key environmental, legal and institutional transboundary concerns inherent to the management of transboundary waters through the conduct of systematic and indicator based system assessments for transboundary aquifers, lake/reservoir basins, river basins, LMEs, and open ocean areas around the globe so as to allow the GEF to target its investments into priority transboundary water systems and to develop a sustainable process for periodic global assessment of transboundary waters through formalization of partnerships and institutional arrangements. The initiative supports transboundary conjunctive water management through supporting modelling, data bases and assessments about the linkages between the groundwater systems, the lake into which rivers flow and the LMEs into which they empty etc. and will provide guidance for the conduct of similar actions by regional institutions, national governments, and local organizations, which also the ITTAS project will substantially benefit from with respect to transboundary and conjunctive management. The TWAP assessment is the first global assessment that uses quantified and directional indicators of system states, pressures and impacts under three broad risk themes: biophysical, socioeconomic, and governance. As such, TWAP is poised to help identify core indicators to support national monitoring and reporting of targets required to realize the Sustainable Development Goals (SDGs) for the period 2015 – 2030. TWAP freshwater indicators map to SDG 6 on Clean Water and Sanitation, notably Target 6.6 (protection and restoration of mountains, forests, wetlands, rivers, aquifers and lakes).

- The Global Water Partnership (2000) emphasizes that effective governance based on principles of equity, efficiency, and diverse knowledge integration is as important for dealing with water resource management problems as technical solutions. Recent literature and

evidence-based analysis on water governance also shows that technical, institutional, and financial solutions to the so-called “water crisis” often may be known. The implementation and adaptation of these solutions on the ground to develop place-based policy responses remains challenging (OECD, 2011). Also, recent activities in West Africa were done or are ongoing:

- **2005-2006: West African Water Governance Program** (Benin, Burkina Faso, Ghana, Niger).
- **2004-2008: Program for Water Development in Africa - PAWD 1** (Canada): end 2004 - 2008: and concerned 5 (five) African countries including two (2) in West Africa (Mali and Senegal). Up to now, the document of National Plan of IWRM of Mali has been elaborated, validated and adopted in Council of Ministers since April 2008.
- **2005 - 2008: Program for Water Development in Africa - PAWD 2** (The Netherlands): six (6) African countries including two in West Africa (Benin, Cape Verde), with the result of the elaboration of the IWRM Action Plan document for each country
- **2012-2016: "Water, Climate and Development WACDEP"** Program in Burkina Faso. The project will revolve around: (i) support for integrating water security and climate resilience into development planning and decision-making. (ii) support for the development of tools and the "no-regret" options of investment and financing. (iii) the selection and financing of pilot demonstration projects. (iv) awareness and training of stakeholders on assessment, monitoring, protection of the resource with a focus on good water management. (v) strengthening of the Burkina Faso National Water Partnership network

2.6.6 Environmental aspects

- The African Development Bank (AfDB) funded the “Silt control in the Niger River Basin” program (PLCE), with the objective to contribute to safeguarding water and land resources of the Basin on a participatory and sustainable basis, and to arrest silt erosion in the Niger River considered to be detrimental to agricultural production and hydraulic infrastructure (2005 – 2011). The project supported NBA in elaborating a Master Plan for Silt Control in the Niger Basin, provided capacity building to NBA structures at regional and national levels, and implemented urgent measures to control erosion and siltation in three riparian countries (Mali, Burkina and Niger). AfDB is presently preparing the IPDACC follow-up project.
- The IUCN Initiative “*Integrated Management of the Niger River Basin*”. is under development for the identification, establishment and support of a basin network of important inland waters, including RAMSAR sites and other protected areas, as a functionally connected and more effectively managed portfolio of priority locations for securing freshwater ecological integrity, assets and service .

2.6.7 Climate change, resilience, adaptation,

- The emerging UNDP-GEF project: “*Rural Climate Resilience in the Niger Basin*” (a national project in Benin) addresses climate adaptation through resilient management of land and water ecosystems and in this way complements activities within the ITTAS through a focus on climate adaptation
- As indicated earlier, The UNDP/Cap-Net Program provides capacity building support to mainly national stakeholders through various IWRM-related trainings. Their training courses include mainstreaming climate change considerations and adaptation measures into the IWRM.

2.6.8 Master plan for shared ground water resources allocation of the Iullemeden-Taoudeni/Tanezrouft Aquifer System: Fulfilling the needs of populations, agriculture and industry

The water resources of the Iullemeden and Taoudeni/Tanezrouft aquifer system are not fully exploited while the populations suffer both food and water insecurity.

In fact, the basins' considerable water resources are not accessible to countries as they need: (1) adequate means to access these water resources; (2) means to transfer these resources to the parts in the most need of water; (3) an incentive water resources management plan on the medium and long terms (15 years, 30 years) to encourage investments in animal and agricultural production which takes into account small farmers/ producers who are often neglected. In fact, most of the prospects related to the water sector, elaborated more than a decade ago, are restricted to the attainment of the Millennium Development Goals (MDGs) by 2015, and rarely, by 2025.

In order to reverse this paradox, the seven countries concerned, committed to achieve the Sustainable Development Goals (SDGs), intend to conduct in the next few decades a number of socio-economic development actions identified by studies (between 2004 and 2016) and retained by the countries.

The project will contribute to SDG 6, in particular the targets 6.3, 6.4, 6.5, and 6.6. The project's M&E framework, which will be reviewed and refined during the inception phase, will include relevant indicators that will track the progress towards these targets. SDG 6 Targets include:

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

The implementation of the present project will create favorable conditions for:

- Water supply through the transfer of water from zones with high potential to the populations and areas where water needs are most felt; analysis of withdrawals costs and selection;
- The creation of job opportunities and the improvement of farmers' revenues (in particular) through the valorization of water resources and agricultural lands.
- A better participation of women in productive social and economic activities and children education especially girls.
- Strengthen the role and action of the consultation mechanism

The overall objective of the present project is to fulfill the needs of urban and rural populations for water, to promote sustainable agricultural development, to develop industrial and mining activities for better livelihoods, to combat poverty, ensure food security and reduce migratory flows.

The project specific objectives are:

- To identify the populations' needs for water by 2040;
- To identify the potentials of sustainable agricultural, mining and industrial development per country;
- To elaborate a master plan for water transfer from zones with high water potential and a road map for its implementation by 2030 and 2040
- Plan for multi-phased investments
- Strengthen countries / region capacities in terms of integrated and concerted management of shared water resources
- Strengthen the role and action of the consultation mechanism.

3. Project Results Framework

This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: Not Applicable
Country Programme Outcome Indicators: Not Applicable
Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 2.5. Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use, and access and benefit sharing of natural resources, biodiversity and ecosystems, in line with international conventions and national legislation 1.3. Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste
Applicable GEF Strategic Objective and Program: GEF 5 IW A): Catalyse multi-state cooperation to balance conflicting water uses in trans-boundary surface and groundwater basins while considering climatic variability and change GEF 5 IW C): Support foundational capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of trans-boundary water systems
Applicable GEF Expected Outcomes: Outcome 1.3: Innovative solutions implemented for reduced pollution, improved water use efficiency, sustainable fisheries with rights-based management, IWRM, water supply protection in SIDS, and aquifer and catchment protection Outcome 3.3: IW portfolio capacity and performance enhanced from active learning/KM/experience sharing
Applicable GEF Outcome Indicators: Indicator 1.3: Measurable water- related results from local demonstrations Indicator 3.3: GEF 5 performance improved over GEF 4 per data from IW Tracking Tool; capacity survey The project will contribute to SDG 6, in particular the targets 6.3, 6.4, 6.5, and 6.6. and the project's M&E framework which will be reviewed and refined during the inception phase, will include relevant indicators that will track the progress towards these targets, including SDG indicators: 6.3.1 Percentage of wastewater safely treated, 6.3.2 Percentage of bodies of water with good ambient water quality, 6.4.1 Percentage change in water use efficiency over time, 6.4.2 Percentage of total available water resources used, taking environmental water requirements into account (level of water stress), 6.5.1 Degree of integrated water resources management implementation (0-100), 6.6.1 Percentage of change in the extent of water-related ecosystems over time

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
Project Objective: The objective of the project is to improve knowledge-based management, governance and resource conservation of the Niger River Basin and the Iullemeden-Taoudéni/Tanezrouft Aquifers (ITTAS), to support IWRM for the benefit of communities and the resilience of ecosystems	<ul style="list-style-type: none"> Water balance within NB/ITTAS compared to 1970 level with sub-indicators as appropriate²⁹. State of development of common monitoring system measured through parameters and methods monitored Number of demonstration projects yielding positive outcomes (use of sub-indicators) Degree to which ecosystem-based and integrated SW/GW management approach is integrated into the NBA SDAP and IP Degree to which principles of User-Payer and especially Polluter-Payer have been developed and harmonized across all NBA/ITTAS member states. Level of governance of the integrated SW/GW resource at the national and regional levels 	<ul style="list-style-type: none"> Water balance for Niger defined at a number of critical points and IAS at CT³⁰ (3.3 m³/s) and for CI³¹ (1,61m³/s) based on 1970 Referential time. Global Water balance ITTAS established in 2013. Fragmented and insufficient monitoring, with differences among countries Niger Basin water charter basis for common legislation, but not implemented or enforced on country levels Although mandated, NBA attention to groundwater is significantly lower than for surface water. User-Payer principles are generally not implemented in any of the countries In most countries level of SW/GW conjunctive management is minimal No training or sensitization activities 	<ul style="list-style-type: none"> 15% reduction of Gini³² coefficient (as related to per capita water consumption) across all NBA/ITTAS countries Common harmonized monitoring system for key environmental variables in place and operational Transboundary Conjunctive Water management based on scientific modelling and Transboundary mechanisms for International Water management have increased Water balance within the NB/ITTAS higher than 1970 (pre-drought) levels. . Water balance for ITTAS at CT and Ci well established. Mechanism for long-term and sustainable governance of the surface and ground waters of the ITTAS and Niger Basin is ready for phased roll out At least 25 women in the basin trained to become outreach agents At least 100 women in each basin country sensitized about the key messages from the project 	<ul style="list-style-type: none"> Research Results Interviews with OSS, NBA, member country representatives, project reports Status reports (with numbers of sites, samples collected etc) for transboundary and national monitoring systems, access to databases Number of sub-basins for which management is scientifically-based (using models etc) can be verified through NBA and member countries The models set up and calibrated as part of this project will be used to evaluate water balance trends through the course of the project and beyond Interviews with OSS, NBA, member country representatives, project reports Reports on training and sensitization will be gender-disaggregated 	<ul style="list-style-type: none"> countries have an interest to implement monitoring of water systems and pollution in a harmonized way on transboundary levels and are endowed with similar equipment and use similar methods which are feasible countries have an interest to implement monitoring of water systems and pollution in a harmonized way on transboundary levels countries have an interest to implement improved and harmonized legislation with respect to conjunctive water management and pollution control on transboundary levels and have the capacities to enforce it.

²⁹ Water Balance was established from groundwater modelling with PMODFLOW. The referential year/period is 1970. The oldest piezometric map & water level is given from 1970 based on several studies in the area. Year 1970 was the period where huge campaign for drilling boreholes was launched after the extreme 1968-1970 drought.

³⁰ CT is the "Continental Terminal" aquifer

³¹ CI is the "Continental Intercalaire" aquifer

³² Gini coefficient The Gini Coefficient is one of the most commonly used indicators for measuring distribution. It is traditionally applied to the measurement of income inequality, but has also been applied to measure land inequality. The closer that the Gini coefficient is to 0, the more equal the distribution.

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<ul style="list-style-type: none"> Number of women sensitized, through outreach activities, with the key messages that the project promote regarding IWRM and Water Use Efficiency and improved water resources management in the NB-ITTAS. 	organized by NBA or OSS targeting women.			
Outcome 1.1.1: IWRM supported by a sound understanding of ground water resources and their linkages with surface water systems	<ul style="list-style-type: none"> % of TTAS system modelled and understood to same level as IAS TDA for ITTAS completed and endorsed SAP for ITTAS completed and endorsed # of water balance and allocation modelling that incorporates both GW and SW % of Community-level IWRM initiatives taking integrated GW/SW planning and utilization approach 	<ul style="list-style-type: none"> IAS part has been modelled and understood with acceptable level of confidence. Global ITTAS model done (OSS, 2013). No TDA or similar analysis for ITTAS No SAP for either IAS or TTAS Water balance and water allocation models for SW and GW are largely separate Most water resource development and planning initiatives carried out separately for SW and GW Major gaps in capacity (HR and technical equipment) to accomplish research and political actions 	<ul style="list-style-type: none"> Ground and surface water interaction modelled and quantified for entire ITTAS to same level as currently for IAS NBA SDAP and IP has fully incorporated applicable parts of ITTAS SAP NBA and other institutions' water balance and allocation models fully include conjunctive use approach TDA completed and signed off at the technical level by each country SAP (and NAPs at national levels) completed and endorsed by designated ministers in each country. All water resource development and planning initiatives adopt an integrated SW/GW approach Adequate HR and equipment in place for monitoring and other actions 	<ul style="list-style-type: none"> TDA/SAP completed and endorsed Updated NBA SDAP and IP reflecting the fully integrated inclusion of the ITTAS SAP Configuration of water balance and allocation models IWRM Planning reports and designs Consultation with stakeholders HR and equipment audits research reports, interviews with OSS and independent scientists, visits to OSS and NBA 	<p>Risks</p> <ul style="list-style-type: none"> Accessibility to all necessary parts of the ITTAS for field work may be a challenge Lack of adequate data for accurate modelling political resistance towards Transboundary Water Management and SAP implementation <p>Assumptions</p> <ul style="list-style-type: none"> Despite the fact that the IAS modelling was done +/- 7 years ago, it will still be possible to integrate both components of the ITTAS aquifer Unhindered implementation of research activities, sufficient capacities developed, all required equipment procured
Output 1.1.1: Hydrogeological functioning of/and linkages between the Iullemeden, Taoudéni-Tanezrouft Aquifers (ITTAS), other aquifers systems and the surface waters of Niger River Basin	<ul style="list-style-type: none"> % of TTAS system modelled and understood to same level as IAS Functioning of Models for total ITTAS area with respect to the production of information relevant to 	<ul style="list-style-type: none"> Hydrological models available only for IAS in a simplified form reduced to CI and CT with low resolution. Full research chain exists for IAS 	<ul style="list-style-type: none"> A full research chain including data collection, modelling and mapping exists for TTAS in the same way as currently for IAS Detailed functioning models deliver all necessary parameters on available for total ITTAS in higher resolution 	<ul style="list-style-type: none"> TDA/SAP completed and endorsed Updated NBA SDAP and IP reflecting the fully integrated inclusion of the ITTAS NBA SAP Configuration of water balance and allocation models 	<p>Risks</p> <ul style="list-style-type: none"> Accessibility to all necessary parts of the ITTAS for field work may be a challenge Lack of adequate data for accurate modelling <p>Assumptions</p>

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<p>CWM (distances between recovery and recharge areas, the permeability and storage capacities of the aquifer system, the time lag between extraction of water from one resource and its impact on the other, transmissivity etc.</p> <ul style="list-style-type: none"> Model results under conditions of climate change generated 	<ul style="list-style-type: none"> Global model in place (OSS, 2013)³³ covering the overall ITTAS 	<ul style="list-style-type: none"> Functionning models which have been run under condition of climate change 	<ul style="list-style-type: none"> IWRM Planning reports and designs Consultation with stakeholders 	<ul style="list-style-type: none"> Despite the fact that the IAS modelling was done +/- 7 years ago, it will still be possible to integrate both components of the ITTAS aquifer
Output 1.1.2: Technically Cleared TDA and SAP for the ITTAS	<ul style="list-style-type: none"> TDA and SAP for ITTAS completed and endorsed Availability of TDA/SAP for TTAS, measured by list of SAP-SDAP parameters based upon SAP IAS according to Scorecard 	<ul style="list-style-type: none"> No TDA or similar analysis for TTAS No SAP (only TDA) for IAS 	<ul style="list-style-type: none"> NBA SDAP and IP has fully incorporated applicable parts of ITTAS SAP TDA completed and signed off at the technical level by each country SAP (and NAPs at national levels) completed and endorsed by designated ministers in each country. 	<ul style="list-style-type: none"> TDA/SAP completed and endorsed Updated NBA SDAP and IP reflecting inclusion of the NBA SAP. NBA's SDAP updated by ITTAS SAP 	<p>Risks</p> <ul style="list-style-type: none"> Difficulties associated to differences between NBA and ITTAS geographical areas Need to involve other institutions (e.g. OMVS as GICRESAIT Steering Committee member)(who have not been sufficiently part of process. Challenges associated with integration into already completed SDAP and IP. <p>Assumptions</p>
Output 1.1.3: Strengthened Capacity of National and Regional Water Managers	<ul style="list-style-type: none"> Number of persons in specific institutions (NBA, OSS and others) with full working knowledge of TDA/SAP process Number of persons in specific institutions (NBA, OSS and others) able to run and update 	<ul style="list-style-type: none"> Very limited capacity within NBA and regional institutions in groundwater modelling Some capacity and experience within NBA, OSS, regional and national institutions in TDA/SAP process and work 	<ul style="list-style-type: none"> Capacity gaps of establishing TDA/SAP are reduced according to Score Card which will be established during inception phase All water resource development and planning initiatives within OSS, NBA and others adopt an integrated SW/GW approach 	<ul style="list-style-type: none"> Configuration of water balance and allocation models IWRM Planning reports and designs Consultation with stakeholders 	<p>Risks</p> <ul style="list-style-type: none"> Loss of capacity from staff turnover, braindrain <p>Assumptions</p> <ul style="list-style-type: none"> Water management institutions have adequate manpower and low staff turnover

³³ OSS, 2013. Modélisation et vulnérabilité. 121 pages, 97 figures, 17 tableaux. 26.6 Mo

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	ITTAS groundwater models. Number of persons within specific institutions with experience in GW/SW (Sex-disaggregated data will be collected.)	<ul style="list-style-type: none"> • Very limited capacity and experience in the setting up and operation of integrated SW/GW balance and allocation models 	<ul style="list-style-type: none"> • OSS, NBA and other institutions' water balance and allocation models fully include conjunctive use 		
Outcome 2.1: Niger Basin Users Associations and National NGOs engaged in basin resources management and conservation for better control of flood/drought/pollution, reduction of pressure on land, forest and biodiversity while improving living conditions of households	<ul style="list-style-type: none"> • a) Area of Infestation by aquatic weeds at selected project sites • b) % of total area of all wetland demonstration sites in which biodiversity has been restored to > 50% of status of reference site. • c) % of total area of all protected area demonstration sites in which biodiversity has been restored to > 50% of status of reference site. • d) % of total area of all mountain forest ecosystem demonstration sites in which biodiversity has been restored to > 50% of status of reference site. • e) Average change in sediment transport in selected streams exiting protected are and mountain forest ecosystem demonstration sites • f) % of groundwater and conjunctive use demonstration sites where issues of water quality or quantity 	<ul style="list-style-type: none"> • a) High infestation rates particularly in Nigeria are impeding navigation, fishing etc • b-d) "original" state biodiversity to be defined during inception and the area under this condition. Good condition reference sites to be surveyed for definition of targets (for each ecosystem type) • e) sediment load monitoring programme to be setup during Inception Phase and continued through duration of project. • f) To be established during Inception Phase • g) SPI and flood index to be measured during Inception Phase and throughout project life • h) to be established during Inception Phase • i) To be established through survey of income and livelihoods during Inception • j) To be established during project inception 	<ul style="list-style-type: none"> • a) River users (navigation and fisheries) not significantly impeded by aquatic weeds • b) Biodiversity of aquatic ecosystems restored to 50% of status of reference sites • c) Biodiversity of wetlands at demonstration sites restored to 50% of that of reference sites • d) Biodiversity of protected areas of Niger W, Chad and Northern Cameroon at demonstration sites restored to 50% of that of reference sites • e) Mountain forest ecosystems in Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin effectively restored at demonstration sites to 50% of condition of reference sites • f) 25% reduction in sediment load • g) Values for dissolved oxygen, pH, EC, NO3-N , Total coliform to be better than WHO standards • h) 10% increase in baseflow 10% decrease in flood index • i) 25 % increase in combined use • i-k) 50% increase in all three areas • j) Gender Action Plan implemented 	<ul style="list-style-type: none"> • a) Volume of traffic, tonnes catch and questionnaires completed by users • b-d) biodiversity and condition of relatively undisturbed reference sites to established for each ecosystem • e) gauging station to be set up and rated for water/level discharge and for sediment sampling • f) stakeholder consultation and observation • g) Field measurements • h) stakeholder consultation and observation • i) Socio-economic surveys • j) stakeholder consultation and observation 	Assumptions <ul style="list-style-type: none"> • a) Equipment and land management skills sufficient • b – e) adequate resources for surveys, cooperation of research institutions (universities, etc.) • f) adequate resources for operation and maintenance of gauging station • g) Possible to detect trends

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<p>identified at inception have improved</p> <ul style="list-style-type: none"> g) % of demonstration sites where drought and flood impacts have decreased (baseflow and flood index) h) Extent of combined use of surface and groundwater resources i) Average per capita income of populations at demonstration project areas (sex-disaggregated data will be collected.) j) Number of Equitable benefit-sharing regimes established among communities (sex-disaggregated data will be collected.) Participation of women in all demonstration activities tracked in numbers. Gender Assessment both at the national and regional level produced. Gender Action Plan, based on the Gender Assessment, developed by end Year 1. 		<ul style="list-style-type: none"> k) Sex-disaggregated data tracked by the project show improvement in gender mainstreaming and women empowerment compared to the baseline. 		
Output 2.1.1: Protection of Aquatic Habitat and Biodiversity of Threatened Wetlands	<ul style="list-style-type: none"> % of the area of the wetlands of the Inner Delta, the Middle Niger and the Maritime Delta for which biodiversity restored % demonstration sites at which invasive aquatic plants have been effectively controlled % demonstration sites at which the biodiversity of 	<ul style="list-style-type: none"> Baseline description of biodiversity exists for the Inner Delta, the Middle Niger and the Maritime Delta Baseline description of level of infestation of invasive aquatic plants exists but may have to be improved and updated on a regular basis. 	<ul style="list-style-type: none"> Biodiversity of wetlands at demonstration sites restored to 50% of that of reference sites The most effective methods to control invasives and the financial sustainability plan to maintain them established at each demonstration site. Biodiversity of aquatic ecosystems at demonstration sites restored to 50% of that of reference sites 	<ul style="list-style-type: none"> Biodiversity surveys and snapshots at demonstration sites (before and after) 	<p>Risks</p> <ul style="list-style-type: none"> Current security situation in targeted areas may complicate implementation of demonstration projects in these areas.

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	aquatic ecosystems has been effectively restored.	<ul style="list-style-type: none"> Baseline description of biodiversity of aquatic systems exists but may have to be improved 	<ul style="list-style-type: none"> Recommendations and implementation plan for replication and taking to scale in place 		
Output 2.1.2: Restoration and Improved Management of Protected Areas	<ul style="list-style-type: none"> % of demonstration sites in W Niger for which the biodiversity of the protected areas has been restored % of demonstration sites in Chad for which the biodiversity of the protected areas has been restored % of demonstration sites in Northern Cameroon for which the biodiversity of the protected areas has been restored. 	<ul style="list-style-type: none"> # demonstration projects already implemented under previous projects in each of the 3 targeted protected areas. Baseline description of biodiversity exists for the protected areas of W Niger, Chad and Northern Cameroon but may require updating and improvement 	<ul style="list-style-type: none"> Biodiversity of protected areas of Niger W, Chad and Northern Cameroon restored at demonstration sites to 50% of that of reference sites Recommendations and implementation plan for replication and taking to scale in place 	<ul style="list-style-type: none"> Surveys of condition of protected areas and snapshots at demonstration sites (before and after) Feedback from stakeholders aimed at assessing management levels 	Risks <ul style="list-style-type: none"> Current security situation in targeted areas in Chad and Northern Cameroon may complicate implementation of demonstration projects in these areas.
Output 2.1.3: Restoration and Sustainable Management of Mountain Forest Ecosystems	<ul style="list-style-type: none"> % of demonstration sites in Upper Guinea for which mountain forest ecosystems have been restored. % of demonstration sites in the Sikasso Region, Mali for which mountain forest ecosystems have been restored % of demonstration sites in Bani Basin, Mali for which mountain forest ecosystems have been restored % of demonstration sites in the Adamaoua, Cameroon, Benin for which mountain forest ecosystems have been restored 	<ul style="list-style-type: none"> # demonstration projects already implemented under previous projects in each of the 4 targeted protected areas. Baseline description of status of mountain forest ecosystems in Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin exists but may require updating and improvement 	<ul style="list-style-type: none"> Mountain forest ecosystems in Upper Guinea, the Sikasso region and the Bani Basin in Mali, Adamaoua in Cameroon and Northern Benin at demonstration sites restored >50% of that of reference sites. Recommendations and implementation plan for replication and taking to scale in place 	<ul style="list-style-type: none"> Surveys of mountain forest ecosystems and snapshots at demonstration sites (before and after) 	Risks <ul style="list-style-type: none"> Current security situation in targeted areas may complicate implementation of demonstration projects in these areas.
Output 2.1.4: Demonstration of Best Practices in Groundwater Management and Integrated	<ul style="list-style-type: none"> Number of demonstration projects chosen and successfully implemented 	<ul style="list-style-type: none"> Status of water quality and quantity issues as defined at each 	<ul style="list-style-type: none"> Issues of water quality or quantity as identified at inception have been resolved at each demonstration site 	<ul style="list-style-type: none"> Surveys and snapshots at demonstration sites (before and after) 	Risks <ul style="list-style-type: none"> Current security situation in targeted areas may complicate implementation

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
planning of Surface and Groundwater Resources	<ul style="list-style-type: none"> % of demonstration sites where issues of water quality or quantity identified at inception have improved Whether or not recommendations and implementation plan for taking to scale are in place 	<p>demonstration project Inception.</p> <ul style="list-style-type: none"> Degree of conjunctive water management as defined at each demonstration project Inception 	<ul style="list-style-type: none"> Results disseminated and experience shared Plan for replication and taking to scale agreed and endorsed at national and NBA/ITTAS levels. 	<ul style="list-style-type: none"> Feedback from stakeholders 	<p>of demonstration projects in these areas.</p>
Output 2.1.5: Provision of Training to Basin Water User Associations	<ul style="list-style-type: none"> # of basin water user associations capacitated to an agreed standard. (sex-disaggregated data will be collected.) 	<ul style="list-style-type: none"> Level of capacity in each project area to be assessed during Inception Phase for each demonstration project 	<ul style="list-style-type: none"> Water user associations and other related stakeholder organizations in each demonstration project area all fully capacitated and independent 	<ul style="list-style-type: none"> As part of monitoring and evaluation program 	<ul style="list-style-type: none">
Output 2.1.6: Strategy for linking up and integrating community-based interventions (Outputs 2.1.1 to 2.1.5) so that livelihood-based ecosystem management becomes the basis for the sustainable management of water resources basin-wide	<ul style="list-style-type: none"> Existence or not of national and NBA/ITTAS level endorsement of strategy for linking and integrating community-based projects in preparation for replication of pilots and taking to scale Existence or not of policy recommendations supporting this at the national levels 	<ul style="list-style-type: none"> No coherent strategies in place No policy recommendations in place. 	<ul style="list-style-type: none"> Clear policies and guidelines in place for the linking and integrating of community-based projects in preparation for replication of pilots and taking to scale 	<ul style="list-style-type: none"> Reports and documentation 	<ul style="list-style-type: none">
Outcome 3.1 Introduce systematic and integrated approach of industrial competitiveness and environmental/social responsibility to reduce wastewater discharges and pollution loads in the Niger River.	<ul style="list-style-type: none"> Over 50% of the TEST innovative approaches implemented at the pilot enterprise levels % decrease of concentration and/or volume discharges of the selected enterprises' recorded % Financial return on environmental 	<ul style="list-style-type: none"> Balance between industrial competitiveness and environmental/social responsibility were not a concern or a business as usual at polluting enterprises level 	<ul style="list-style-type: none"> More than half of the participating pilot enterprises have taken on board the proposed systematic and integrated approach of industrial competitiveness and environmental/social responsibility (based on baseline parameters), at least 10% ³⁴ decrease in the volume of a 	<ul style="list-style-type: none"> Project evaluation survey/report Laboratory results. Outcomes of interviews with enterprise' representatives. Voluntary disclosure of enterprises' financial reports. 	<p>Risks:</p> <p>1. Political Risks: Insufficient/lack of political will from NBA member countries and industries to "jointly" combat pollution and hazardous chemical discharges in the Niger River Basin.</p> <p>2. Economical Risk: Economic factors (jobs,</p>

³⁴ the proposed targets will be reviewed and verified once the baseline assessment is done and the participating private sectors (those who are willing to invest) are identified [at the inception phase]"

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<p>investments and application of the TEST approach witnessed.</p> <ul style="list-style-type: none"> • % success rate after the introduction and implementation TEST Approach recorded in most pilot enterprises. • Positive impacts on women from reduced pollution loads and discharges to the water system will be tracked (through interviews, etc.). 		<p>target pollutant in discharges from the selected enterprises' recorded</p> <ul style="list-style-type: none"> • Energy efficiency gain in operations at the participating enterprises, resulting from the application of the TEST approach • At least 15 % financial return on environmental investments and application of the TEST approach witnessed at >2/3 of the sites TEST is piloted. • Positive impacts on women recorded and the info shared widely. 		<p>incomes, corporate earnings) might outweigh environmental consideration and resource conservation</p> <p>3. Ownership Risks: Top management and shareholders of selected enterprises don't support the implementation of TEST approach midway through the project</p> <p>Assumptions:</p> <ul style="list-style-type: none"> • Pollution and contaminant discharges prevention and enforcement mechanism established, • Manufacturing, mining and services related industries supported pollution control and prevention measures • Industry decision makers are willing to create funds for introducing and integrating the TEST approach within their business operations
<p>Output 3.1.1</p> <p>Niger Basin Authority's Waterbody data/inventorying processes updated; pollution control and regulatory framework improved.</p> <p>(including the identification of causes and sources of pollution)</p>	<ul style="list-style-type: none"> • Degree of redefinition of regulatory standards, specifically in areas such as: <ul style="list-style-type: none"> - Point sources of contamination; - Non-point sources of contamination; - Ecologically sensitive areas; - Areas with human health risks; - Areas with environmental degradation. • 60-80% of previous scoring/grading 	<ul style="list-style-type: none"> • Absence of precise regulation and standards for discharging pollutants • Insufficient/lack of political will to combat pollution; • Inadequate enforcement of existing regulatory instruments to reprimand pollution (penalties, taxes, etc.). 	<ul style="list-style-type: none"> • Water pollution database fully accessible to all interested parties • Report (printout and online) of water quality standards and regulations 	<ul style="list-style-type: none"> • Reviewed and updated Inventorying processes report, • NBA member state approval and adoption of updated inventory process report(s). • Mechanisms for policy implementation clearly defined and accepted by NBA member countries. 	<p>Risks:</p> <ol style="list-style-type: none"> 1. Absence of defined basin-wide regulatory standards for discharging pollutants. 2. Insufficient legal/monitory instruments to reprimand pollution (penalties, taxes, etc). 3. Insufficient financial resources for a basin-wide surface and groundwater quality monitoring at point source and non-point sources of contamination <p>Risk level: High to Medium</p> <p>Assumptions:</p>

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<p>standards for pollution hotspots reviewed and or revised as deemed necessary.</p> <ul style="list-style-type: none"> • New standards for pollution hotspots officially introduced. • Regulatory Policy reviewed, updated to current needs and good for implementation. 				<ul style="list-style-type: none"> • NBA member countries place high priorities on the protection and conservation of natural resources and habitats. • Pilot enterprises are willing to cooperate with the new inventorying process. • Piloting enterprises see the need for such exercise and the potential economic benefits to their business operations.
<p>Output 3.1.2.</p> <p>Pollution hot spots identified and customized to suit current needs; basin-wide assessment and select ion processes of pilot enterprises improved and mainstreamed.</p>	<ul style="list-style-type: none"> • Technical agreement reached/signed on NBA's member countries on their individual environmental priorities. • Number of basin-wide diagnostic pollution hotspot survey carried out in participating NBA countries. • Number of willing (in terms of social responsibility and voluntary reporting) enterprises selected and diagnostic pollution hotspot survey customized to suit their business models and physical operations. • Correlation of chosen Enterprises with level of their contaminant discharges 	<ul style="list-style-type: none"> • Insufficient financial resources for monitoring water quality • Insufficient competent personnel for the monitoring of pollution often due to the reconversion skilled workers to other higher paying jobs. 	<ul style="list-style-type: none"> • List of enterprises prioritized on the basis of their contaminant discharges available • 9 basin-wide diagnostic pollution hotspot survey carried out in participating NBA countries. • 11 enterprises selected and diagnostic pollution hotspot survey customized to suit their business models and physical operations 	<ul style="list-style-type: none"> • Signed agreements by representatives of NBA member countries. • Basin-wide diagnostic pollution hotspot reports. • Voluntary commitment letters from selected enterprises signed and received by Project coordinating team and Counterparts. • Progress project reporting. 	<p>Risks:</p> <p>1. Lack of comprehensive basin-wide environmental pollution/contamination data. Level of risk: Medium</p> <p>Assumptions:</p> <ul style="list-style-type: none"> • Pollution diagnostic pollution hotspots reports. • Project monitoring and evaluation reports.
<p>Output 3.1.3.</p> <p>Transfer of Environmentally Sound Technology (TEST) approach at the enterprise level efficiently introduced.</p>	<ul style="list-style-type: none"> • number of customized EMS and EMA training and pollution monitoring modules for selected enterprises developed. 	<ul style="list-style-type: none"> • Lack of knowledge and expertise about the clean technologies within NBA and ITTAS countries. 	<ul style="list-style-type: none"> • # of low cost CP modifications performed • 1 customized EMS and 1 customized EMA training and pollution monitoring modules 	<ul style="list-style-type: none"> • TEST assessment reports. • Training attendance sheets. • Project evaluation reports. 	<p>Risks:</p> <p>1. Insufficient competent personnel at enterprises level for the monitoring of pollution Level of risk: Medium – Low</p>

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<ul style="list-style-type: none"> Number of employees per demo site/ pilot enterprises are trained. Number of persons within the region trained so as to build reserved pools of private/external experts for future needs. Amount for potential investment in TEST approach earmarked at selected enterprises. Number of low cost RECP modifications at selected enterprises performed. 		<p>for each of the selected enterprises developed</p> <ul style="list-style-type: none"> At least 2 employees per demo site/ pilot enterprises are trained. 15 persons within the region trained so as to build reserved pools of private/external experts for future needs. At least \$100,000 for potential investment in TEST approach earmarked at selected enterprises At least 9 low cost RECP modifications at selected enterprises performed . 		<p>Assumptions:</p> <ul style="list-style-type: none"> Enterprises are willing to apply TEST methodological approach. Enterprises are willing to invest efforts in training employees for the introduction and or integration of the TEST approach.
Output 3.1.4: TEST programme results and experiences disseminated	<ul style="list-style-type: none"> TEST website for the region created and functional. Regional seminars to share TEST project results/lessons held. TEST project evaluation report submitted/presented to Regional Project Advisory Board and approved. 	<ul style="list-style-type: none"> TEST programs and experiences were unknown in the basin, at least at enterprises level 	<ul style="list-style-type: none"> Final workshop disseminates the lessons learned and final report is made available 	<ul style="list-style-type: none"> Minutes of seminars held. Content and virtual activities/usage of the TEST website. 	<p>Risks:</p> <ol style="list-style-type: none"> TEST results might have socio-economic and political implications. Civil communities might use TEST results to justify legal actions against participating enterprises <p>Level of risk: Medium- Low</p> <p>Assumptions:</p> <ul style="list-style-type: none"> Project stakeholders are in full agreement of project outcomes irrespective of the nature of lessons learned.
Outcome 3.2: Industrial Competitiveness and Environmental/Social Responsibility for reduced wastewater discharges reinforced by legal and policy frameworks	<ul style="list-style-type: none"> NBA polluter-payer guidelines agreed aimed at supporting development of harmonized laws/ policies Number of NBA countries to have passed appropriate polluter-payer legislation 	<ul style="list-style-type: none"> Polluter-payer principle acknowledged by most countries but legal basis is lacking Polluter-payer policies are weak or absent 	<ul style="list-style-type: none"> Appropriate and effective harmonized polluter-payer laws in place across all basin states Appropriate and effective harmonized polluter-payer policies in place across all basin states Polluter-payer policies implemented and mechanisms to enforce laws in place across the basin 	<ul style="list-style-type: none"> Laws on statute books Policies published Cases of enforcement recorded 	<ul style="list-style-type: none">

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<ul style="list-style-type: none"> Number of NBA countries to have developed effective polluter-payer policies 				
<p>Output 3.2.1:</p> <p>Development of Proposals for Policy Mainstreaming to address Pollution Reduction in Partnership with the Private Sector</p>	<ul style="list-style-type: none"> Best proposal agreed by basin states after stakeholder discussions (NBA) Recommendations made by responsible national institutions to national level law-makers Policies developed and published by responsible national level institutions 	<ul style="list-style-type: none"> NBA had begun work on this initiative but progress has stalled in early stages No recommendations developed as yet 	<ul style="list-style-type: none"> Proposals for Policy Mainstreaming to address Pollution Reduction in Partnership with the developed and the preferred option agreed and endorsed by at least two thirds (6 of the 9) Niger River Basin states 	<ul style="list-style-type: none"> Endorsed agreement 	<p>Risks</p> <ul style="list-style-type: none"> Important economic stakeholders at country level may resist change and complicate the task of policy-makers.
<p>Output 3.2.2:</p> <p>Implementation of Harmonised Policies and Laws to address Pollution Reduction</p>	<ul style="list-style-type: none"> Number of NBA countries to have passed appropriate polluter-payer legislation Number of NBA countries to have developed effective polluter-payer policies 	<ul style="list-style-type: none"> Polluter-payer principle acknowledged by most countries but legal basis is lacking Polluter-payer policies are weak or absent 	<ul style="list-style-type: none"> Appropriate and effective harmonized polluter-payer laws in place across all basin states Appropriate and effective harmonized polluter-payer policies in place across all basin states Polluter-payer policies implemented and mechanisms to enforce laws in place across the basin 	<ul style="list-style-type: none"> Laws on statute books Policies published Cases of enforcement recorded 	<p>Risks</p> <ul style="list-style-type: none"> Important economic stakeholders at country level may resist change and complicate the task of policy-makers.
<p>Outcome 4.1:</p> <p>National Policies and Institutions, Civil Society Platforms support Niger River Ecosystem based management</p>	<ul style="list-style-type: none"> Short-term (provisional) governance mechanism for the surface and ground waters of the ITTAS and Niger Basin in place for project duration Long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin endorsed by NBA/ITTAS countries 	<ul style="list-style-type: none"> Currently institutional separation of groundwater and surface water management in most countries Although mandated, NBA experience and capacity in transboundary groundwater management and conjunctive GW/SW management is limited. Currently Research institutions not utilized 	<ul style="list-style-type: none"> long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and Niger Basin ready for implementation Academic and research institutions are providing training on the management of basin resources Research at NBA/ITTAS national academic institutions is taking place on an ongoing basis Communities capacitated in transboundary basin management issues 	<ul style="list-style-type: none"> Draft of Short-term option of governance mechanism (conjunctive management) for the surface and groundwater provided and suggested to the countries for validation; Draft of Long-term option of governance mechanism (conjunctive management) for the surface and groundwater & Road Map provided and suggested to the countries to validate; 	<p>Assumptions</p> <ul style="list-style-type: none"> Political willingness in all countries existent to link groundwater management with surface water management on transboundary levels Research institutions interested to collaborate Countries interested into harmonized monitoring scheme Conjunctive management receives sufficient attention by media

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	<ul style="list-style-type: none"> Platform for cooperation and collaborative action operational # of academic and research institutions capacitated to provide required training courses \$ usefully spent on acquirement of specialist equipment for research and analysis Community and inter-state level transboundary learning mechanisms are in place Harmonized monitoring mechanisms in place Number of communication media, which report about conjunctive water management as well as positive impacts on women, number of media accessed 	<p>as important source for scientific input or provision of training in basin management</p> <ul style="list-style-type: none"> Insufficient and fragmented monitoring throughout the ITTAS and the Niger Basin No media reports on CWM No targeted communication efforts to disseminate positive impacts of improved water resources management on women, or women's contribution to improved water resources and catchment management in the basin 	<ul style="list-style-type: none"> GW/SW experience sharing and communications active at all levels Additional research projects on combined NBA/ITTAS Harmonized monitoring programme in place and exists for at least 5 agreed indicators. At least the IWLEARN website plus three additional media acknowledge and report Conjunctive Water Management within the ITTAS and Niger Basin At least five media stories featuring women's positive contribution or positive impacts of improved water resources management practices in the basin on women disseminated through IW:LEARN, websites of NBA, OSS, or UNDP, and other channels. 	<ul style="list-style-type: none"> Documents describing the functions, activities and achievements of platforms as an evidence for institutional/ governance reforms realized at an ecosystem level within the basin to practice IWRM. Records of training workshops on the transboundary (conjunctive) management of basin resources; Review of media products in particular IWLEARN website, interview with media people NBA-ITTAS Website 	
Output 4.1.1: Assessment of current national and regional actors in ground and surface water management and Analysis of options for integrating surface and groundwater governance mechanisms	<ul style="list-style-type: none"> Existence or not of endorsed report (at national, NBA/ITTAS levels on the Analysis of options for integrating surface and groundwater governance mechanisms 	<ul style="list-style-type: none"> There is an absence of agreed understanding on what options for integrated transboundary management of SW and GW 	<ul style="list-style-type: none"> Agreement on analysis of current situation and recommendations going forward 	<ul style="list-style-type: none"> Reports and documentation 	Risks <ul style="list-style-type: none"> Vested interests of existing institutions
Output 4.1.2: Selection and Implementation of agreed Options for Integrated Governance to strengthen Conjunctive Management	<ul style="list-style-type: none"> Regional workshop to agree and finalize details held long-term and sustainable governance mechanism for the surface and ground waters of the ITTAS and 	<ul style="list-style-type: none"> No governance mechanism in place for the joint management of linked transboundary GW and SW resources 	<ul style="list-style-type: none"> Mechanism for long-term and sustainable governance of the surface and ground waters of the ITTAS and Niger Basin in ready for phased roll out. 	<ul style="list-style-type: none"> Reports (on Options) and documentation 	Risks <ul style="list-style-type: none"> Vested interests of existing institutions

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
	Niger Basin endorsed by NBA/ITTAS countries				
Output 4.1.3: Policy actions at regional and national levels to further integrate conjunctive management of transboundary ground and surface waters into SDAP, National plans and strategies leading to mainstreaming and implementation of policy reforms	<ul style="list-style-type: none"> Completed assessment of policy and related institutional arrangements related to management of SW and GW. Recommendations for policy actions at national and regional levels Updated SAP for the Niger River Basin and accompanying NAPs Gender mainstreaming efforts in SAP and NAPs 	<ul style="list-style-type: none"> Existing policy on integrated conjunctive management of SW and GW is weak or non-existent SAP and NAPs exist but little consideration on groundwater or conjunctive management No gender mainstreaming efforts in SAP or NAP 	<ul style="list-style-type: none"> Recommendations for institutional arrangements to support integrated conjunctive SW/GW management agreed at national and regional levels Recommendations for policy actions to support integrated conjunctive SW/GW management agreed at national and regional levels Updated SAP (and NAPs at national levels) completed and endorsed by designated ministers in each country Updated SAP and NAPs fully including gender considerations 	<ul style="list-style-type: none"> Reports and documentation 	Risks <ul style="list-style-type: none"> Vested interests of existing institutions
Output 4.1.4: Formalisation of National level Support to Implementation of the Investments Plan and Development and Implementation of Dedicated Monitoring and Evaluation Tools	<ul style="list-style-type: none"> Whether or not implementation committee and working group in place Whether or not revised monitoring and evaluation framework and plan for SDAP is in place # of persons at national and regional levels who have been trained on monitoring and evaluation framework. 	<ul style="list-style-type: none"> Monitoring and evaluation plan exists for the SDAP and Investment Plan but requires updating, especially to take into account work done under this project. Little coordination between the NBA and relevant national institutions in the M&E activities in the basin. 	<ul style="list-style-type: none"> Agreed revised monitoring and evaluation plan is in place for the revised SDAP and revised IP covering NBA and ITTAS. Agreed M&E Framework, which describes who monitors what, where, when, how often, etc. to implement the revised M&E Plan, with concrete and tangible involvement of national institutions in the M&E activities. 	<ul style="list-style-type: none"> Reports and documentation 	<ul style="list-style-type: none">
Output 4.1.5: National institutions contributing to the management of transboundary terrestrial ecosystems and wetlands provided with platforms for cooperative actions and capacity building to address current emerging	<ul style="list-style-type: none"> # of platforms for cooperation and collaborative action in place # % of capacity building plan implemented # of green/innovative technologies piloted 	<ul style="list-style-type: none"> Cooperation and collaboration among relevant national institutions necessary to realize the ecosystem-based approach is limited. Existing capacity levels and experience at national and 	<ul style="list-style-type: none"> Members of the platform for cooperation and collaborative action fully capacitated in dealing with respect to addressing current emerging challenges and promotion of collaboration Joint monitoring system in place and implemented for 	<ul style="list-style-type: none"> Stakeholder feedback Minutes from the platform meetings. Joint Monitoring System Records from the joint monitoring exercise. Reports from the capacity development activities, with the sex- 	<ul style="list-style-type: none">

Project Delivery	Indicators	Baseline	Targets End of Project	Source/Mean of Verification	Risks and Assumptions
challenges and promote collaborative monitoring mechanisms		transboundary levels is limited <ul style="list-style-type: none"> Few examples of green/innovative technologies in place 	each target ecosystem for which a platform is established. <ul style="list-style-type: none"> Capacity development programme developed and implemented for each platform. Quantifiable results monitored and available from green/innovative technology pilots, which support policy discussions for replication and taking to scale. 	disaggregated data on beneficiaries. <ul style="list-style-type: none"> Reports from the innovative/green technology pilots. 	
Output 4.1.6: Capacities of academic and research institutions strengthened with tools and training to provide relevant knowledge and information guiding the management of basin resources	<ul style="list-style-type: none"> Suitable and interested academic and training institutions identified and agreements in place % of training programmes implemented % of specialist equipment acquired 	<ul style="list-style-type: none"> Availability of appropriate training on the management of basin resources is limited 	<ul style="list-style-type: none"> Academic and research institutions are providing training on the management of basin resources Research at NBA/ITTAS national academic institutions is taking place on an ongoing basis 	<ul style="list-style-type: none"> Documentation of training courses. Publication of research papers 	<ul style="list-style-type: none">
Output 4.1.7: Transboundary Learning mechanisms established at community and Inter State levels; and experiences shared through website, IWLEARN, technical papers, video, technical forums, GEF IW Biennale Conference, WWF, AMCOW and other relevant forums	<ul style="list-style-type: none"> Whether or not community and inter-state level transboundary learning mechanisms are in place Time to make the website for experience sharing operational and level of interest # of technical papers published Level of presence at range of forums # of stories published promoting gender empowerment results achieved by the project 	<ul style="list-style-type: none"> Very few learning mechanisms in place Presence at relevant conferences and forums limited No targeted outreach efforts promoting gender empowerment efforts/results. 	<ul style="list-style-type: none"> Dynamic, interactive, widely (by all countries) and regularly (annually increasing number of hits for web-based programmes) utilized learning mechanisms in place at community and inter-state levels. Website in place within 3 years for experience sharing, and regularly updated Quarterly increase (trend) in number of hits Key stakeholders are regular participants and contributors at various forums. At least 5 stories promoting gender empowerment efforts/results from the project activities 	<ul style="list-style-type: none"> Most indicators can be directly measured 	<ul style="list-style-type: none">

4. Total Budget and Work plan

4.1. Overall

The overall GEF funding for the project is governed by three different project documents. There are two project documents for the work to be delivered by UNDP, one with the NBA as implementing partner (shown as UNDP-NBA in the table below), and one with UNIDO as implementing partner (UNDP-UNIDO in the table below). The third project document covers the work to be delivered by UNIDO, working with OSS and UNESCO. While overall management of each of the components is clearly demarcated between the implementing Partners, some of the work leading to the outcomes is shared. As shown in the table below, Component 1 will be entirely delivered by UNEP-OSS but Component 2 will be jointly delivered by UNDP-NBA and UNEP-OSS, with UNDP-NBA having overall responsibility. Component 3 will be delivered mainly through UNDP-UNIDO, with a small part by UNDP-NBA. Component 4 will be led and mainly delivered by UNDP-NBA with the support of UNEP-OSS-UNESCO. The overall budget implications are summarised in the table below.

Table 4-1: Division of proposed budgets (GEF finance) by Implementing Partner and Component

Implementing Partner (Executing Agency)	Component 1	Component 2	Component 3	Component 4	Project Management	Total
UNDP-NBA		2,917,678	200,000	2,593,036	414,286	6,125,000
UNDP-UNIDO			2,800,000			2,800,000
UNEP-OSS & UNESCO	2,300,000	1,700,000		275,000	225,000	4,500,000
	2,300,000	4,617,678	3,000,000	2,868,036	639,286	13,425,000

4.2. UNDP-NBA budget

Award ID:	00096687	Project ID(s):	00100628
Award Title:	Niger_ Improving knowledge-based management and governance of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (ITTAS)		
Business Unit:	Ner10		
Project Title:	Improving knowledge-based management and governance of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (ITTAS)		
PIMS no. _____	4798		
Implementing Partner (Executing Agency)	Niger Basin Authority (NBA)		

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Total (USD)	See Budget Note:
COMPONENT 2; OUTCOME 2.1: Niger Basin Users Associations and National NGOs engaged in basin resources management and conservation for better control of flood/drought/pollution, reduction of pressure on land, forest and biodiversity while improving living conditions of households	NBA	62000	GEF	71200	International Consultants	73,250	121,500	111,500	116,500	116,500	73,250	612,500	2A
				71300	Local Consultants	55,000	110,000	110,000	110,000	110,000	55,000	550,000	2B
				71400	Contractual Services - Individ	9,000	18,000	18,000	18,000	18,000	9,000	90,000	2C
				71600	Travel	33,000	66,300	66,300	66,300	66,300	37,500	335,700	2D
				72100	Contractual Services- Companies	0	0	0	0	6,000	0	6,000	2E
				72200	Equipment and Furniture	45,500	23,250	23,200	23,200	23,100	8,000	146,250	2F
				72300	Materials & Goods	7,500	15,250	15,250	15,250	15,250	7,750	76,250	2G
				72400	Communic & Audio Visual Equip	12,500	0	0	0	0	0	12,500	2H
				72600	Grants	60,000	150,000	180,000	150,000	150,000	45,000	735,000	2I
				72800	Information Technology Equipmt	7,000	7,000	7,000	7,000	4,000	3,500	35,500	2J
				74500	Miscellaneous Expenses	3,414	4,400	4,400	4,400	4,400	1,000	22,014	2K
				75700	Training, Workshops and Confer	45,000	55,964	69,000	24,000	81,000	21,000	295,964	2L
					Total Outcome 2.1	351,164	571,664	604,650	534,650	594,550	261,000	2,917,678	

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Total (USD)	See Budget Note:
COMPONENT 3; OUTCOME 3.2: Industrial Competiveness and Environmental/Social Responsibility for reduced wastewater discharges reinforced by legal and policy frameworks	NBA	62000	GEF	71200	International Consultants	10,000	15,000	15,000	15,000	15,000	5,000	75,000	3A
				71300	Local Consultants	5,000	7,500	7,500	7,500	7,500	10,000	45,000	3B
				71600	Travel	3,000	7,500	7,500	7,500	7,500	4,500	37,500	3C
				74500	Miscellaneous Expenses	250	500	500	500	500	250	2,500	3D
				75700	Training, Workshops and Confer	0	0	5,000	0	30,000	5,000	40,000	3E
					Total Outcome 3	18,250	30,500	35,500	30,500	60,500	24,750	200,000	

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Total (USD)	See Budget Note :
COMPONENT 4; OUTCOME 4.1: National Policies and Institutions, Civil Society Platforms support Niger River Ecosystem based management	NBA	62000	GEF	71200	International Consultants	85,000	175,000	210,000	185,000	180,000	125,000	960,000	4A
				71300	Local Consultants	38,000	81,000	123,500	133,500	123,500	53,000	552,500	4B
				71600	Travel	47,750	81,000	86,500	86,500	86,500	80,380	468,630	4C
				72200	Equipment and Furniture	2,500	4,000	4,000	4,000	4,000	2,500	21,000	4D
				72300	Materials & Goods	1,000	2,000	2,000	2,000	2,000	1,000	10,000	4E
				72600	Grants	0	40,000	40,000	40,000	40,000	5,786	165,786	4F
				72400	Communication & Audio Visual Equip	2,000	1,000	1,000	1,000	1,000	1,000	7,000	4G
				72800	Information Technology Equipment	0	0	5,000	5,000	5,000	2,500	17,500	4H
				74300	Contributions	0	0	0	0	0	0	0	-
				74500	Miscellaneous Expenses	1,500	2,000	5,000	5,000	5,000	4,620	23,120	4J
				75700	Training, Workshops and Confer	0	85,000	70,000	60,000	85,000	67,500	367,500	4K
					Total Outcome 4	177,750	471,000	547,000	522,000	532,000	343,286	2,593,036	

GEF Outcome/Atlas Activity				Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Total (USD)	See Budget Note:
PROJECT MANAGEMENT				71200	International Consultants	15,000	30,000	35,000	35,000	30,000	15,000	160,000	PM1
				71300	Local Consultants	7,500	15,000	15,000	15,000	15,000	10,000	77,500	PM2
				71600	Travel	22,000	22,000	22,000	22,000	22,000	22,000	132,000	PM3
				72500	Office Supplies	2,500	2,500	2,500	2,500	2,500	2,500	15,000	PM4
				74500	Miscellaneous Expenses	5,000	4,786	5,000	5,000	5,000	5,000	29,786	PM5
	Sub-Total Project Management (GEF)					52,000	74,286	79,500	79,500	74,500	54,500	414,286	
		04000	UNDP	74500	Miscellaneous Expenses (including DPC)	20,000	20,000	20,000	20,000	20,000	20,000	120,000	
	Sub-Total Project Management (UNDP)					20,000	20,000	20,000	20,000	20,000	20,000	120,000	
	TOTAL Project Management					72,000	94,286	99,500	99,500	94,500	74,500	534,286	
TOTAL GEF					599,164	1,147,450	1,266,650	1,166,650	1,261,550	683,536	6,125,000		
TOTAL UNDP					20,000	20,000	20,000	20,000	20,000	20,000	120,000		
GRAND TOTAL					619,164	1,167,450	1,286,650	1,186,650	1,281,550	703,536	6,245,000		

Summary of Funds: ³⁵

Funding Sources	Amount Yr 1	Amount Yr 2	Amount Yr 3	Amount Yr 4	Amount Yr 5	Amount Yr 6	Total
GEF	599,164	1,147,450	1,266,650	1,166,650	1,261,550	683,536	6,125,000
UNDP (both in TBWP & parallel)	2,332,068	2,312,070	2,312,070	2,312,070	2,312,070	2,312,070	13,892,418
Participating Govts, NBA & OSS	149,313,282	149,313,285	149,313,285	149,313,285	149,313,285	149,313,285	895,879,707
TOTAL	152,244,514	152,772,805	152,892,005	152,792,005	152,886,905	152,308,891	915,897,125

³⁵ Summary table should include all financing of all kinds: GEF financing, cofinancing, cash, in-kind, etc. (In the present case, UNIDO will present a co-finance calculation for a 5 year implementation period and 1 year for project preparation in 2015).

Budget Notes:

NOTE	BUDGET ALLOCATIONS	ATLAS	DESCRIPTION
Component 2: Outcome 2.1			
2A	<ul style="list-style-type: none"> 45 PM @ 8500 USD/m of international consultant covered by Outputs 2.1.1 to 2.1.3 for position of Component 2 Coordinator. Corresponds to 75% of full-time position 23 PM of specialist international consultants covering aquatic environments, wetlands, fisheries, forestry, watershed management etc for Outputs 2.1 to 2.3 to work with local consultants 	71200	International Consultants
2B	<ul style="list-style-type: none"> 30 PM of local consultants covering full range of expertise for each of Outputs 2.1.1 to 2.1.3 (total 90PM). To work closely with international team. Main effort to be focussed during Years 2 and 3. 	71300	Local Consultants
2C	<ul style="list-style-type: none"> Limited allowance has been made for the contracting out of services to individuals at the demonstration site areas. 	71400	Contractual Services Individual
2D	<ul style="list-style-type: none"> Travel is a significant component of cost and has to cover flights for international staff and internal travel to and around demonstration sites. Travel costs includes flights, DSA, vehicle hire and fuel. NB, under 72200, one 4 x 4 vehicle is to be purchased to support Outputs 2.1.1 to 2.1.3. 	71600	Travel
2E	<ul style="list-style-type: none"> Allowance for 6000 USD for Output 2.1.5 to assist with training of Water User Associations 	72100	Contractual Services Companies
2F	<ul style="list-style-type: none"> Equipment includes 1 x 4 x 4 (30,000 USD) vehicle to be used under Outputs 2.1.1 to 2.1.3. Other equipment costs are for purchase of equipment to be used in implementation of demonstration projects 	72200	Equipment and Furniture
2G	<ul style="list-style-type: none"> Allowance has been made for purchase of materials and goods to be used at the demonstration sites. These will be limited to ensure sustainability 	72300	Materials & Goods
2H	<ul style="list-style-type: none"> The purchase of communication and audio visual equipment is required mainly for supporting capacity building at the demonstration project sites. 	72400	Communication & Audio Visual Equipment
2I	<ul style="list-style-type: none"> A large part of the budget for Outputs 2.1.1 to 2.1.3 is in the form of grants which will be used to allow the community-based demonstration projects to be set up and made operational. 	72600	Grants
2J	<ul style="list-style-type: none"> Allowance is made for the purchase of laptops and tablets to support technologically appropriate demonstration project design and implementation 	72800	Information Technology Equipment
2K	<ul style="list-style-type: none"> A very limited allowance has been made for miscellaneous expenses 	74500	Miscellaneous Expenses
2L	<ul style="list-style-type: none"> Workshops at the local and national levels will be used primarily for training and experience sharing. Workshops at the local level will be an essential tool for promoting replication of demonstration projects 	75700	Training, Workshops and Confer

Component 3: Outcome 3.2			
3A	<ul style="list-style-type: none"> 7.5 PM of international consultant input for this outcome which is largely concerned with consultation and analysis and spread through most of the overall projects duration. 	71200	International Consultants
3B	<ul style="list-style-type: none"> 9 PM of local consultants input for this outcome which is largely concerned with consultation and analysis at the country levels. 	71300	Local Consultants
3C	<ul style="list-style-type: none"> Travel is a significant component of cost and has to cover flights for international staff and regional travel between countries. Travel costs included flights and DSA. 	71600	Travel
3D	<ul style="list-style-type: none"> A very limited allowance has been made for miscellaneous expenses 	74500	Miscellaneous Expenses
3E	<ul style="list-style-type: none"> Some allowance has been made for a regional workshop towards the end of the project. 	75700	Training, Workshops and Confer
Component 4: Outcome 4.1			
4A	<ul style="list-style-type: none"> The costs associated with the Overall PCU Coordinator/ Component 4 Task Leader will be covered by the Component 4 International Consultants budget line. 600,000 for the Project Coordinator Mid-term reviews and end of project review for all components are to be covered by the Component 4 International Consultants budget line 30 further PM of international consultant input for Outputs 4.1.4, 4.1.5 and 4.1.7 covering a wide range of expertise. 	71200	International Consultants
4B	<ul style="list-style-type: none"> 110 PM of local consultants covering a wide range of expertise has been allowed for across Outputs 4.1.4, 4.1.5 and 4.1.7 has been allowed. 	71300	Local Consultants
4C	<ul style="list-style-type: none"> Travel is a major component significant component of cost and has to cover flights for international staff and regional travel between countries. Travel costs included flights and DSA. 	71600	Travel
4D	<ul style="list-style-type: none"> Some limited equipment purchases have been allowed for in order to support especially Output 4.1.5. 	72200	Equipment and Furniture
4E	<ul style="list-style-type: none"> Allowance has been made for specialised materials and goods in support of equipment purchases. 	72300	Materials & Goods
4F	<ul style="list-style-type: none"> Under Output 4.1.5 innovative/green technologies supporting sustainable management of natural resources are to be piloted. This will require the making available of some small grants to support the proposed community-based initiatives 	72600	Grants
4G	<ul style="list-style-type: none"> The purchase of communication and audio visual equipment is required mainly for supporting capacity building. 	72400	Communic & Audio Visual Equip
4H	<ul style="list-style-type: none"> Allowance is made for the purchase of laptops and tablets to support capacity building an as related to the purchase of specialised equipment. 	72800	Information Technology Equipment
4J	<ul style="list-style-type: none"> A very limited allowance has been made for miscellaneous expenses 	74500	Miscellaneous Expenses

4K	<ul style="list-style-type: none"> Some allowance has been made for training workshops. 	75700	Training, Workshops and Confer
PM1	<ul style="list-style-type: none"> To cover inputs for international consultants responsible for project management, monitoring and evaluation etc 	71200	International Consultants
PM2	<ul style="list-style-type: none"> To cover inputs for regionally based consultants responsible for project management, monitoring and evaluation etc 	71300	Local/regional Consultants
PM3	<ul style="list-style-type: none"> Travel is a significant component of cost and has to cover travel requirements for international and national/regional consultants. The budgetary allowance includes air travel, car and DSA 	71600	Travel
PM4	<ul style="list-style-type: none"> Office supplies required for project management 	72500	Office Supplies
PM5	<ul style="list-style-type: none"> Limited Miscellaneous budget included under the Project Management 	74500	Miscellaneous Expenses

5. Management Arrangements

5.1. Introduction

GEF support will be implemented through two implementing agencies, UNDP and UNEP, with 9.0 million USD budget through the UNDP and 4.5 million through UNEP. Executing agencies for the UNDP part will be the NBA and UNIDO, while the UNEP part will be executed by OSS and UNESCO.

Although there are two implementing agencies and several executing agencies with quite different inputs, one overall project coordination unit is proposed. In fact, it will be important to have a strong coordination unit to ensure that the different executing agencies work together closely.

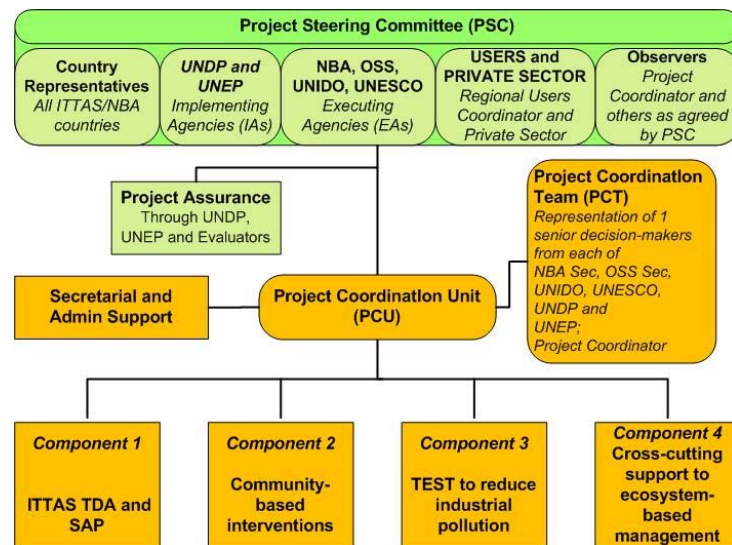


Figure 5-1: Overall Project Management

The terms of reference for the Project Steering Committee and Projects Coordination Team are provided in Annex 2. An overview of the roles of these bodies are provided in Section 5.2. These will be reviewed and recommended for approval during the PAC meeting.

Section 5.3 provides details of the Project Coordination Unit.

5.2. Overall Project Steering and Coordination

5.2.1 Project Steering Committee (PSC)

The project Steering Committee (PSC) will be the highest decision-making body for the overall project. It should comprise membership from:

- NBA and ITTAS countries, i.e. Algeria, Bénin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Mauritania, Niger and Nigeria,
- Implementing agencies, i.e. UNDP and UNEP
- GEF Executing agencies, i.e. NBA, OSS, UNIDO and UNESCO
- Regional Coordination of users and the private sector
- Project Coordination Unit represented by the Project Coordinator

The size of the PSC and the nature of its representation means that it can only meet annually. It is proposed that the meeting should take place immediately prior to the annual NBA steering committee meeting which take place in preparation for the NBA Council of Ministers Meeting. This would allow for the NBA, as the most prominent stakeholder in the project, to report directly to its own steering committee.

The PSC is responsible for making management decisions for a project in particular when guidance is required by the Project Coordinator. The PSC plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the responsibilities of the Project Coordinator through the approval of his/her ToR and any delegation of its Project Assurance responsibilities. The PSC is the highest executive body for the project, provides strategic and policy guidance to the project implementation, and approves Annual Work Plans.

In order to ensure UNDP's ultimate accountability for the project results, PSC decisions will be made in accordance to standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the PSC, the final decision shall rest with the Resident Representative of UNDP Niger Office as the Principle Project Resident Representative of the project.

5.2.2. Project Coordination Team (PCT)

In view of the relatively complex implementation arrangements with different implementing agencies and several executing agencies, it is clear that it will sometimes be difficult for the Project coordinator and the Project Coordination Unit to take some decisions involving the different partners. The relative infrequency of the meetings of the PSC means that it would be very useful to have an intermediary body with representation of senior decision-makers across both implementation agencies (2), all four executing agencies (4) and the PCU (1). This team would meet twice a year with one of the meetings to prepare the annual PSC meeting. Some allowance for adhoc meetings should also be made in order to avoid any potential delays.

5.3. Project Coordination Unit

The project Coordination Unit (PCU) will be put in place to manage the project as a whole, even if different executing agencies will have the main responsibilities for the various projects components. In fact, this unit is essential to ensure that the work on the four components is carried out in as integrated way as possible. It is only really Component 3, which is largely self-standing. Work on Component 1, which will produce a TDA and SAP for the ITTAS will have implications for both Component 2 and Component 4.

The PCU will be headed up by a Project Coordinator, working out of the NBA Secretariat in Niamey with administrative support. This Project Coordinator will also take charge of Component 4 which is executed by three different executing agencies. The post of Project Coordinator cum Task Leader for Component 4 will be a full-time post. This is a critical position and it is important that person filling this position has a continuous global view of the overall project. Component 4 is cross-cutting and deals with issues of governance and capacity that are relevant to the whole project. The proposed structure of the PCU is shown in Figure 2.

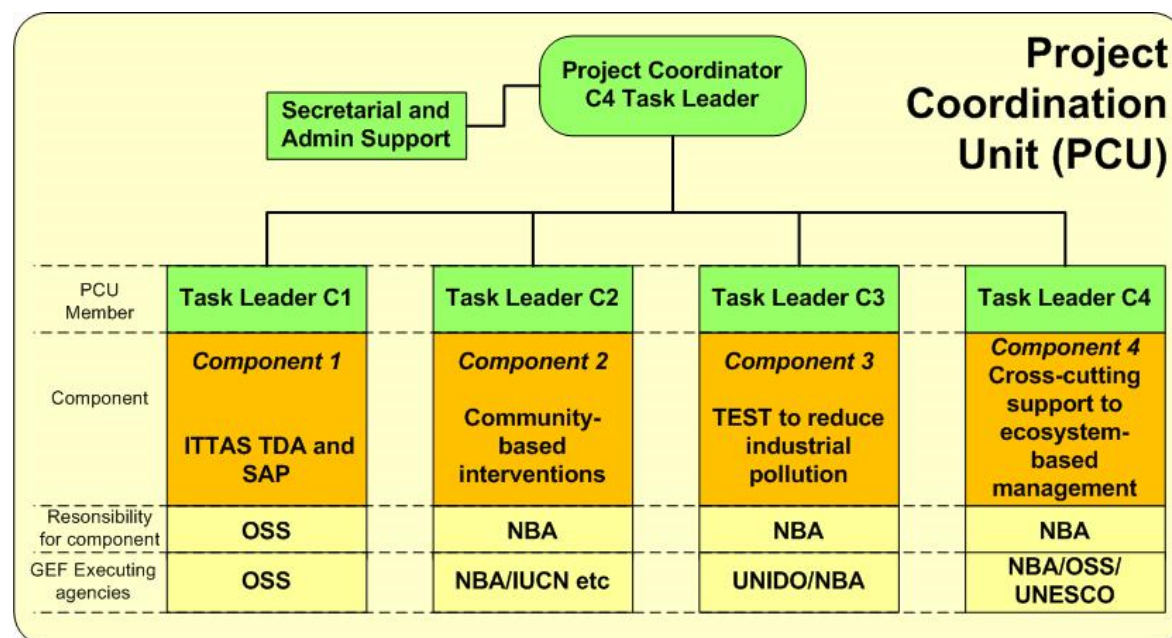


Figure 5-2: Structure of project Coordination Unit

The Task Leader for Component 1 will be **full-time** and is the main groundwater/conjunctive management expert. The ground water expert in OSS will be working together closely with the task leader and his input will vary depending on the activities and component (especially concentrating on ground water modelling tools and data base) Component 1 is the most specialised and technical of the four components. The Component 1 Task Leader will be responsible for the coordination of a team of experts, and ensuring that their combined inputs lead to a high quality transboundary diagnostic analysis (TDA). This will require an excellent good understanding of surface and groundwater resources and their interaction. The Component 1 Task Leader will also be responsible for the drawing up of the Strategic Action Programme (SAP) for the ITTAS. This will be based on a high degree of stakeholder consultation.

The Task Leader position for Component 2 is also seen as a full-time position. Component 2 largely comprises the design and implementation of a wide range of demonstration projects but there is the need to integrate across the different target areas and to ensure that implementation does not become compartmentalised along specific thematics (wetlands, forestry, protected areas). When successfully implemented, Component 2 will lead to the taking to scale of ecosystem-based management in general and it is important that the Task Leader, working closely with the Project Coordinator ensures this. For this and other reasons, the Component 2 Task Leader will also work out of the NBA offices in Niamey. OSS will work closely with the Task leader for Output 2.1.4.

The Task Leader for the TEST project leading to Outcome 3.1 under Component 3 is the TEST Project Manager, who will be recruited by UNIDO and will have the authority to run the TEST project on a day-to-day basis. The overall Project Coordinator will take charge of the work leading to Outcome 3.2, ensuring that industrial competitiveness and environmental/social responsibility for reduced wastewater discharges is reinforced by legal and policy framework.

6. MONITORING FRAMEWORK, REPORTING AND EVALUATION

6.1. Introduction

The project will be monitored through the monitoring and evaluation activities of UNDP guidelines. Monitoring of the project activities will be done primarily by the project coordinator, with support from Headquarters and the Components' Task Leaders. There will be interim and final reports. The interim report will be submitted upon completion of the first year of implementation to report on progress with project implementation, as well as problems encountered and necessary adjustments to the work plan. The final report will include a summary of all activities carried out, as well as lessons learned.

6.2. Project start

A Project Inception Workshop will be held within the first 3 months of project start up with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible, regional technical policy and program advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first annual work plan.

The Inception Workshop should address a number of key issues including:

- Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and PCT staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff (draft versions included as Annex 2) will be discussed again as needed.
- The project's M&E framework will be reviewed and refined during the inception phase and will include relevant indicators that will track the progress towards SDG 6 and in particular targets 6.3, 6.4, 6.5, and 6.6. and the related indicators 6.3.1., 6.3.2., 6.4.1., 6.4.2., 6.5.1., and 6.6.1.
- Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provide a detailed overview of reporting, monitoring and evaluation requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- Plan and schedule Project Steering Committee meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Steering Committee meeting should be held within the first 12 months following the inception workshop.

An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

6.3. Quarterly:

- Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
- Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).
- Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.
- Other ATLAS logs can be used to monitor issues, lessons learned etc... The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

6.4. Annually:

Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Lesson learned/good practice.
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS QPR
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

6.5. Periodic Monitoring through site visits:

UNDP CO, UNEP TM and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Steering Committee may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Steering Committee members.

6.6. Mid-term of project cycle:

The project will undergo an independent Mid-Term Review at the mid-point of project implementation (insert date). The Mid-Term Review will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring

decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term review will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

While the mid-term evaluation will be managed by the UNDP, the UNEP Task Manager and Evaluation Office will be kept informed of and be involved in the MTE, including commenting on the terms of references for the evaluation(s), evaluation of the consultant selection and the draft evaluation report.

The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

6.7. End of Project:

6.7.1 Evaluations and Terminal Report

An independent Terminal Evaluation will take place three months prior to the final Project Steering Committee meeting and will be undertaken in accordance with UNDP and GEF guidance. The terminal evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term review, if any such correction took place). The terminal evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

During the last three months, the project team will prepare the Project Terminal Report. This comprehensive 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.

While the Terminal Evaluation (TE) will be managed by the UNDP, the UNEP Task Manager and Evaluation Office will be kept informed of and be involved in the TE, including commenting on the terms of references for the evaluation(s), evaluation of the consultant selection and the draft evaluation report.

6.7.2 Exit and Sustainability Plans

OVERVIEW

The proposed project comprises components that are all essentially designed to promote the sustainable development and management of water resources. A key aspect of the sustainability concept is that no or only minimal external support is required at the end of the project to ensure that the sustainable development of water and associated resources continues. A key part of the sustainability concept is that much of the effort will go towards a livelihood-based approach aimed at mainstreaming socio-economic development into environmental conservation. This is a central theme of Component 2, which can be seen as the core of the proposed project and which aims at preparing for the taking to scale of a livelihood-based approach to sustainable water resources management.

COMPONENT 1: PROMOTING CONJUNCTIVE MANAGEMENT OF GROUND AND SURFACE WATERS

INTRODUCTION

The anticipated outcome of Component 1 is “***IWRM supported by a sound understanding of groundwater resources and their linkages with surface water systems***”

Component 1 is aimed at promoting the conjunctive management of the ground and surface water resources of the Niger River Basin. This is generally accepted as being a critical missing element in the overall sustainable management of the water resources of the Niger Basin and on which the NBA's management strategies, in particular the Strategic Development Action Plan (SDAP) and its Investment Plan are based. Data collection and research on the transboundary aquifers which are linked to the surface waters of the Niger Basin have lagged behind work on the surface water systems. As water and associated land resources have come under increasing strain as a result of population pressures, climate change and in some cases, poor management practices, the need to properly manage surface and groundwater resources in an integrated manner has become increasingly evident. Clearly for this management to be possible, an equitable understanding of both the groundwater and surface water system is required. Compilation of a scientifically sound transboundary diagnostic analysis and agreed SAP for ITTAS will be a major step in filling this gap.

The integration of conjunctive management into IWRM processes has to be based on a sound understanding of groundwater resources and their linkages with surface water systems within the study area. Work under Component 1 will therefore focus on closing gaps in scientific knowledge, transboundary diagnostics and strategic planning to ensure that the conjunctive management of ground and surface water resources can be properly integrated into IWRM to reduce pressures on certain water systems while simultaneously and primarily ensuring sufficient and easily accessible water supply for the well-being of the people within the ITTAS and Niger River basin

ACTION FOR EXIT

Work under this component will be completed during the third year of the overall project and will result in the drawing up of an agreed strategic action programme (SAP) and associated national action programmes (NAPs). Important actions to be taken care of as part of the exit strategy are the following:

- The actions as defined by the SAP have to be integrated into the NBA' overall Strategic Development Action Plan (SDAP) and Investment Plan since these are regarded as the single overall plans governing water and environmental resources management in the basin. This must be done before project end. **The earlier completed SAP for the NBA was already fully integrated into the updated version (2012) of the SDAP. If there are areas of action under the ITTAS SAP which lie outside the interest or mandate of the NBA these will be left outside of the SDAP and will be taken care of by the body responsible for overall Niger Basin/ITTAS governance so that they are not overlooked.**
- Given that large parts of the ITTAS lie outside the Niger Basin and within non-member states (of the NBA), Algeria and Mauritania, it is important that the SAP is endorsed by all of the NBA/ITTAS states and that its actions are included in the programme of the body responsible for overall Niger Basin/ITTAS governance. Identifying these institutional aspects and agreeing a workable governance mechanism, will be part of the Component 4 work.
- The TDA for the ITTAS and its surface water interaction will draw on existing data and data collected during the course of the Component 1 work. Collecting the new data will be partly achieved through implementation of new gauging stations and this means that some of the data used for modelling will cover only a short time period. It is clear that the accuracy of modelling results can be improved over time and that the improved gauging network should be maintained indefinitely. The project will support maintenance of the network during the overall project time frame but the maintenance should be carried out by the ITTAS basin states. The real cost of this and the capacity of the countries to do this work will be assessed. A costed plan for actions to support the further continuous collection of data will be drawn up and agreed by the ITTAS States.
- Many of the actions that are required to promote good groundwater management practices and conjunctive water management within the ITTAS and will be defined in the SAP. The SAP will also identify specific pilot demonstration projects for these management practices to be demonstrated under Component 2 with a view to replication and eventual taking to scale.

SUSTAINABILITY PLAN

The issue of sustainability mainly relates to

- How well the recommendations of the SAP are taken up into the NBA's SDAP and Investment Plan as well as other regional and national level plans going forward.
- The level of success achieved under the planned Component 2 (Output 2.1.4) pilot demonstration projects and preparations that will have to be made to ensure that the demonstration projects can be replicated and taken to scale. A specific additional output (2.1.6) under Component 2 is aimed at making sure that this happens
- Whether a suitable surface water/groundwater governance mechanism can be agreed and ready for implementation by the end of the five year project. Achieving this is a clear objective of part of the work to be carried out under Component 4 of the project.

COMPONENT 2: SHARING RESPONSIBILITIES AND BENEFITS WITH LOCAL COMMUNITIES, CIVIL SOCIETY IN CONSERVING BASIN RESOURCES, INCLUDING GROUNDWATER

INTRODUCTION

The anticipated outcome of Component 2 is that ***“Niger Basin Users Associations and National NGOs engaged in basin resources management and conservation for better control of flood/drought/pollution, reduction of pressure on land, forest and biodiversity while improving living conditions of households”***

Component 2 can be seen as the core component of the project. It is the component in which the proposals for sustainable water resources management as derived for example from the NBA SAP and SDAP will be implemented on the ground. Most importantly, the foci of the different interventions reflect some of the priorities of the NBA's Strategic Plan in view of conjunctive management of ground and water resources.

The purpose of this component is to implement a wide range of community-based projects aimed at addressing many of the key issues and challenges as originally identified in the TDA/SAP/SDAP as well as those anticipated to be identified in the ITTAS TDA/SAP under Component 1.

ACTION FOR EXIT

The critical actions for exit at the end of the project are the following:

- Experience sharing and dissemination of results to be achieved through
 - on-site experience sharing with other communities in support of project replication
 - organisation of regional and national workshops for sharing experiences in best practices in shared management of groundwater resources
- The setting out of a detailed plan for replication towards taking to scale. This should detail the identified project sites for replication over the 5-10 years following end of project with a detailed timeline and institutional framework.
- Implementation of a monitoring and evaluation plan that evaluates progress on both environmental and socio-economic aspects. A key indicator of success in terms of sustainability is that the beneficiary communities realise real livelihood enhancement

SUSTAINABILITY PLAN

The design of Component 2 is aimed at supporting long-term sustainability through a combination of the following:

- Tackling the main areas of concern with respect to the degradation of natural resources, three main areas of degradation have been selected for inclusion under Component 2:
 - Aquatic habitats and threatened wetlands
 - Protected areas
 - Mountain forest ecosystems

These three areas are specifically singled out in the NBA SAP's Long-term Environmental Quality Objectives (LTEQOs) and therefore represent the priorities for long-term environmental sustainability. Clearly the problems are huge in the basinwide context so it is important that the issue of replication and taking to scale is very carefully planned so that roll-out can be as rapid and effective as possible.

The other main area of concern is the current lack of a conjunctive approach to surface and groundwater management. This will be addressed in a sustainable way by the implementation of both best practices in groundwater management and the conjunctive approach.

- Capacitating the Water User Associations (WUAs) to make sure that they are fully capable of implementing the proposed projects over the medium and long-term. Output

2.1.5 is specifically aimed at providing training to Water User Associations. This training will be provided to the WUAs responsible for the target demonstration projects and also for potential future project areas.

- “Training of trainers”. Component 4 will include various capacity-building interventions. In particular, academic institutions will be provided with training so that they can then provide further training themselves.
- Output 2.1.6 has the aim of drawing up a Strategy for linking up and integrating community-based interventions (Outputs 2.1.1 to 2.1.4.) so that livelihood-based ecosystem management becomes the basis for the sustainable management of water resources basin-wide.

COMPONENT 3: STRENGTHENING INDUSTRIES’ ENVIRONMENTAL/SOCIAL RESPONSIBILITY CAPACITIES.

INTRODUCTION

The anticipated outcomes of Component 3 are

- that a ***“systematic and integrated approach of industrial competitiveness and environmental/social responsibility through Environmentally Sound Technology (TEST) to reduce wastewater discharges and pollution loads in the Niger River is introduced and demonstrated”*** and
- that ***“Industrial Competitiveness and Environmental/Social Responsibility for reduced wastewater discharges reinforced by legal and policy frameworks”***

Component 3 aims at encouraging industry to reduce pollution through the adoption of best practices and new technology. A win-win approach is a key driver of this approach with private companies encouraged to invest in environmentally responsible behaviour for and making savings over time.

ACTION FOR EXIT

An important part of the exit strategy is Output 3.1.4, which is aimed at ensuring that TEST programme results and experiences are disseminated. It is important to note that the demonstration sites will cover only one or two sites in each country. Expanding the scope of the programme is essential and a detailed plan for doing this will be compiled.

Exit will be supported well if the second outcome can be realised. Policy and legal changes are expected to increasingly punish environmentally irresponsible behaviour.

SUSTAINABILITY PLAN

The win-win approach that lies at the heart of the TEST approach is also the key to long-term sustainability. Once the concept introduced as part of this project has been demonstrated and accepted by industry, there should be no need for further intervention. In most cases it is anticipated that industry will choose to introduce measures that lead to reduced pollution because it will be of financial benefit to them as well.

Sustainability will be greatly supported by the second outcome which aims at supporting the introduction and implementation of policies and laws which support the polluter-payer principle. This would increase the penalties to be paid for pollution and increase the attractiveness of introducing the proposed TEST approach.

COMPONENT 4: CAPACITY BUILDING AND STAKEHOLDERS INVOLVEMENT IN NIGER RIVER ECOSYSTEM BASED MANAGEMENT.

INTRODUCTION

The anticipated outcome of Component 4 is that “***National Policies and Institutions, Civil Society Platforms support Niger River Ecosystem based management***”.

Component 4 is cross-cutting in nature and is aimed at supporting the required building of capacity to ensure that national policies and institutions are able to support ecosystem-based management of the Niger River basin and ITTAS.

In fact, Component 4 will play a central role in the exit strategy for the project and will support the putting in place of a number of tools to support sustainability.

ACTION FOR EXIT

While the aim of Component 4 is clearly to support sustainable approaches to water resources development, it is clear that there are some outputs which are intended for the support of other components.

SUSTAINABILITY PLAN

A number of focus areas will contribute to the anticipated Component 4 outcome: These can be categorised as follows:

- Improving the integrated management of surface and ground water resources (through better/more appropriate governance option , integration of planning and strategies etc)
- Improving support to the implementation of the NBA's Investment Plan
- Capacity building
- Sharing experiences with other transboundary Aquifer Systems in the World (Garani, DIKTAS, Arizona, NWSAS, Nubian Sandstone Authority, etc...).

These four areas effectively form the three pillars of the sustainability Plan by:

- Ensuring that a long-term transboundary governance mechanism (conjunctive view) has been agreed and is ready for implementation following project closure;
- Improving support to the implementation of the NBA's Investment Plan and
- Provide capacity building at all levels. A key part of the sustainability part is that this will include the building of capacity within academic training institutions. This will ensure that capacity-building provided by the universities in the region can continue indefinitely. .

6.8. Learning and knowledge sharing:

Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums, particularly the GEF IW:LEARN program including its biennial International Waters conferences and a range of regional and thematic virtual and face-to-face learning.

The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons

learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

6.9. M&E workplan and budget

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> Project Coordinator UNDP CO, UNDP GEF 	30,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> UNDP GEF PCU/Project Coordinator will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. 	To be finalized in Inception Phase and Workshop: 0	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on output and implementation	<ul style="list-style-type: none"> Oversight by Project Coordinator Project team 	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> Project Coordinator and team UNDP CO UNDP RTA UNDP PTA 	0	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> Project Coordinator and team 	0	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> Project Coordinator and team UNDP CO UNDP RCU External Consultants (i.e. evaluation team) 	50,000	At the mid-point of project implementation.
Terminal Evaluation	<ul style="list-style-type: none"> Project Coordinator and team, UNDP CO UNDP RCU External Consultants (i.e. evaluation team) 	Indicative cost: 50,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> Project Coordinator and team UNDP CO local consultant 	0	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> UNDP CO Project Coordinator and team 	0	Yearly
Visits to field sites	<ul style="list-style-type: none"> UNDP CO UNDP RCU (as appropriate) Government representatives 	For GEF supported projects, paid from IA fees and operational budget: 50,000	Yearly
TOTAL indicative COST The costs are covered under Project Management Support Costs Excluding project team staff time and UNDP staff and travel expenses		US\$ 180,000	

6.10. Audit

Audit will be conducted according to UNDP's Financial Regulations and Rules.

7. Legal Context

It is expected that each set of activities to be implemented in the target countries will be governed by the provisions of the Standard Basic Cooperation Agreement concluded between the Government of the recipient country concerned and UNDP or – in the absence of such an agreement – by one of the following: (i) the Standard Basic Assistance Agreement concluded between NBA on behalf of the recipient country and UNDP, (ii) the Technical Assistance Agreements concluded between NBA on behalf of the recipient country and the United Nations and specialized agencies, or (iii) the Basic Terms and Conditions Governing UNDP/UNIDO Projects.

If the country has signed the Standard Basic Assistance Agreement (SBAA):

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

If the country has not signed the SBAA:

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together the instrument envisaged in the Supplemental Provisions to the Project Document, attached hereto.

Consistent with the above Supplemental Provisions, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

Since the current project is a global/ multi country and regional one, the following stands:

- This project forms part of an overall programmatic framework under which several separate associated country level activities will be implemented. When assistance and support services are provided from this Project to the associated country level activities, this document shall be the "Project Document" instrument referred to in: (i) the respective signed SBAs for the specific countries; or (ii) in the Supplemental Provisions attached to the Project Document in cases where the recipient country has not signed an SBA with UNDP, attached hereto and forming an integral part hereof.
- This project will be implemented by the agency (Niger Basin Authority and UNIDO³⁶) ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.
- The responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. The Implementing Partner shall: (a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried; (b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.
- The Implementing Partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council

³⁶ There is a separate project document for UNIDO-implemented activities under this project, which shows the budget administered by UNIDO. This project document does not include budget to be administered by UNIDO.

Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

Annexes

ANNEX 1: SOCIAL AND ENVIRONMENTAL SCREENING TEMPLATE

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the [Social and Environmental Screening Procedure](#) and [Toolkit](#) for guidance on how to answer the 6 questions.

Project Information

Project Information	
1. Project Title	Improving knowledge-based management and governance of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (ITTAS)
2. Project Number	
3. Location (Global/Region/Country)	Africa/Regional/ Algeria, Benin, Burkina, Cameroon, Chad, Cote d'Ivoire, Guinea, Mali, Mauretania, Niger, Nigeria

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

It is important to note that **Component 2 of the project**, which concerns sharing responsibilities and benefits with local communities and civil society in conserving basin resources, is focused on a **livelihood enhancement based approach**. This means that improved management of natural resources is accompanied by real livelihood benefits for all in each of the demonstration project areas. This is recognized as a condition for sustainability. The proposed projects under Component 2 are based on a **participative approach** with a high level of stakeholder participation during demonstration project site selection, design and implementation. Participation and inclusion are principles which underpin the whole process. Beneficiaries will form user associations for demonstration project implementation. These associations will work according to rules set down and agreed by the user associations themselves but according to management guidelines that ensure **equality and non-discrimination and accountability**

Component 3 is aimed at improving the **accountability** of some of those who are responsible for damaging environmental sustainability through pollution of the Niger River. It has been a challenge to make Industrial polluters accountable in the past. Through Component 3, industry will be self-incentivized to be accountable and respect the rule of law. A win-win approach is a key driver, with private companies encouraged to invest in environmentally responsible behaviour for and making savings over time, especially since policy and legal changes are expected to increasingly punish environmentally irresponsible behavior through improved legislation (rule of law)

Component 4 aims at providing capacity-building to support ecosystem-based management at all levels. The approach is therefore **highly inclusive**.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

Understanding **gender issues and ensuring that they are properly taken into account in the planning and design process is a critical part of Component 2 in particular.**

- **Water is the entry point for sustainable development, poverty eradication, human rights, reproductive and maternal health.**
- Access to water has impact on health and productivity for women and children.
- The issue of poverty and land degradation and the challenge of sustainable development under such conditions, and given that women in the basin are more vulnerable than men to chronic poverty, **it is clear that empowering women is an effective way** to addressing many of the environmental challenges in the basin.

- **Women will be given a prominent role in the decision-making process by ensuring equal representation of women in the user associations.**
- Given the key role that the user associations will play, this should ensure that women have a prominent role to play in terms of ensuring **gender equality and women's empowerment**.

The capacity building and involvement proposed under Component 4, which will cut across all project activities, will be designed in such a way that women are equally represented at the different levels, especially at the civil society level where the project can have most influence.

Briefly describe in the space below how the Project mainstreams environmental sustainability

The objective of the project is to improve knowledge-based management, governance and resource conservation of the Niger River Basin and the Iullemeden-Taoudéni/Tanezrouft Aquifers (ITTAS), to support IWRM for the benefit of communities and the resilience of ecosystems. The mainstreaming of environmental sustainability can be seen as the central theme of the project. Component 1 is focused on improving the sustainable management of water resources by better understanding the status of groundwater and the need for conjunctive management of surface and groundwater resources. Component 2 recognizes the very strong linkages between socio-economic and environmental sustainability, especially in the targeted rural areas of the basin where livelihoods are so natural resources dependent. A key principle of the Component 2 demonstration sites is that environmental sustainability is dependent on socio-economic sustainability and vice versa in these areas. Environmental sustainability is thus inextricably mainstreamed into all activities.

Component 3 is focused on reducing industrial pollution in the Niger River. The TEST approach aims to make the “polluters” more environmentally responsible and for industry to understand that it is their financial interest to be so. In view of profit-driven nature of the private sector this is a key element of environmental sustainability.

Component 4 concerns Capacity building and stakeholders involvement in Niger River ecosystem based management. It is cross-cutting in nature and is aimed at supporting the required building of capacity to ensure that national policies and institutions (both at the national and basin levels) as well as civil society are able to support ecosystem-based management of the Niger River basin. The entire component therefore plays a major role in mainstreaming environmental sustainability through the improved capacity of all key players at all levels.

The main focus of Component 2 is arguably the mainstreaming of environmental sustainability through the demonstration of a livelihood-based approach.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “Yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i>	QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i>			QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?
Risk Description	Impact and Probability (1-5)	Significance (Low, Moderate, High)	Comments	Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.

Risk 1: 1.5: Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	I = 3 P = 1	Moderate	There are duty bearers at all levels of project implementation (overall down to Water User Associations)	Component 4 represents a major effort to provide cross-cutting capacity building. Component 1 includes a specific output aimed at capacity building around the TDA and SAP process and application
Risk 2: 1.6. Is there a risk that rights-holders do not have the capacity to claim their rights? .	I = 3 P = 1	High	There will be community members (Comp 2) who need this capacity	Capacity building is an important part of the project and it will be important to ensure that it is fully inclusive to minimize this risk. The formation of water user associations (WUA) (to inform project design and manage implementation) will include proper representation of all rights holders. The WUAs will be fully capacitated. See text introducing Component2 i
Risk 4: 3.1.2: Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities....	I = <1 P = <1	Low	There are project activities (Comp 2) planned in protected areas and forest areas. However, these activities are aimed at supporting environmental sustainability and livelihoods in these areas	Monitoring and evaluation will be of both environmental and social factors at the project level in these and other areas
Risk 5: 3.1.6. Does the Project involve harvesting of natural forests, plantation development, or reforestation?	I = <1 P = <1	Low	Reforestation may form a part of the projects in forest areas	Any reforestation in these areas will be of the same existing indigenous forest
Risk 6; 3.1.7: Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	I = 1 P = 4	Low	One of the pilot projects concerns improving sustainable fishing	The aim is to improve fisheries but in a sustainable manner through tried and tested approaches. Results, including monitoring and evaluation of catches and fish populations will be part of the detailed project design
Risk 7: 3.2.2: Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	I = 1 P = 1	Low	One of the aims of the demonstration projects is to make existing approaches more climate resilient and sustainable	The climate resilient aspect of long-term sustainability will be explicitly stated in the detailed demonstration project design
Risk 8: 3.6.1: Are indigenous peoples present in the Project area (including Project area of influence)?	I = 1 P = 3	Low	The target beneficiaries are largely the indigenous people in most of the Comp 2	Impacts should be positive and significant. In general, the aim of the projects is to improve the existing livelihoods, not to change them, through introduction of more sustainable approaches (from environmental and socio-economic perspective)
Risk 9: 3.6.2: Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	I = 1 P = 1	Low	Many of the project locations will be on these lands because the proposed target beneficiaries are the indigenous peoples	Impacts should be positive and significant. In general, the aim of the projects is to improve the existing livelihoods, not to change them, through introduction of more sustainable approaches (from environmental and socio-economic perspective)
QUESTION 4: What is the overall Project risk categorization?				

	Select one (see SESP for guidance)		Comments
	<i>Low Risk</i>	<input checked="" type="checkbox"/>	
	<i>Moderate Risk</i>	<input type="checkbox"/>	
	<i>High Risk</i>	<input type="checkbox"/>	
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?		
	Check all that apply		Comments
	<i>Principle 1: Human Rights</i>	<input type="checkbox"/>	
	<i>Principle 2: Gender Equality and Women's Empowerment</i>	<input checked="" type="checkbox"/>	This part of the project design is critical to the success of the project, especially Component 2
	<i>1. Biodiversity Conservation and Natural Resource Management</i>	<input type="checkbox"/>	
	<i>2. Climate Change Mitigation and Adaptation</i>	<input checked="" type="checkbox"/>	It is important that this is explicit in the detailed design of demonstration projects
	<i>3. Community Health, Safety and Working Conditions</i>	<input type="checkbox"/>	
	<i>4. Cultural Heritage</i>	<input type="checkbox"/>	
	<i>5. Displacement and Resettlement</i>	<input type="checkbox"/>	
	<i>6. Indigenous Peoples</i>	<input checked="" type="checkbox"/>	In most cases, the indigenous people are the target beneficiaries
	<i>7. Pollution Prevention and Resource Efficiency</i>	<input type="checkbox"/>	

Final Sign Off

Signature	Date	Description
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have “checked” to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have “cleared” the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
Principles 1: Human Rights		Answer (Yes/No)
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? ³⁷	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	Yes
6.	Is there a risk that rights-holders do not have the capacity to claim their rights?	Yes
7.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	Yes
Principle 2: Gender Equality and Women's Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4.	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?	No

³⁷ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

	<i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	Yes
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	Yes
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	Yes
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant ³⁸ greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No

³⁸ In regards to CO₂, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions? ³⁹	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	Yes
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	Yes
6.3	<p>Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?</p> <p><i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i></p>	No

³⁹ Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	No
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

ANNEX 2: TERMS OF REFERENCE FOR PSC AND KEY PROJECT STAFF

INTRODUCTION

This annex provides the preliminary terms of reference for the

- Project Steering Committee (PSC)
- Project Coordination Team (PCT)
- Project Coordination Unit (PCU)
- Project Coordinator cum Component 4 Task Leader
- Component 1 Task Leader
- Component 2 Task Leaderand
- Component 3 Task Leader

These terms of reference will be reviewed and further detailed during project start up.

PROJECT STEERING COMMITTEE (PSC)

Context

The project Steering Committee (PSC) will be the highest decision-making body for the overall project. The PSC will be the main project organ for overall policy decisions and for approval of work-plans and budgets as well as any adaptive management decisions necessary to realign the project.

General Responsibility

The PSC will be responsible for making management decisions for the project in particular when guidance is required by the Project Coordinator. The PSC will play a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It will ensure that required resources are committed and will arbitrate on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it will approve the responsibilities of the Project Coordinator through the approval of his/her ToR and any delegation of its Project Assurance responsibilities. The PSC is the highest executive body for the project, provides strategic and policy guidance to the project implementation, and approves Annual Work Plans.

The size of the PSC and the nature of its representation means that it can only meet annually. It is proposed that the meeting should take place immediately prior to the annual NBA steering committee meeting which take place in preparation for the NBA Council of Ministers Meeting. This would allow for the NBA, as the most prominent stakeholder in the project, to report directly to its own steering committee.

Composition

The Project Steering Committee will have Permanent Members, as follows:

- NBA and ITTAS countries, i.e. Algeria, Bénin, Burkina, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Mauritania, Niger and Nigeria,
- GEF Implementing Agencies (IA), i.e. UNDP and UNEP
- GEF Executing Agencies (EA), i.e. NBA, OSS, UNIDO and UNESCO
- Regional Coordination of users and the private sector
- Project Coordination Unit represented by the Project Coordinator

The PSC will also include members with observer status and invited experts, such as:

- International cooperating partners providing co-financing and/or working on related initiatives
- Technical experts as required by the PSC
- Relevant representatives of the Private Sector and NGOs may be invited to attend PSC meetings whenever required

Steering Committee Rules of Procedure:

The following rules of procedure are proposed and should be reviewed and adopted at the first PSC meeting:

- The Project Steering Committee will be chaired on a rotational basis as agreed by its membership.
- The PSC will meet at least annually, although “extraordinary” meetings can be organized according to specific need.
- Meetings of the PSC will rotate between the participating countries when and where possible and in line with Management Board arrangements, taking into account logistical and resource considerations.
- The PSC will make decisions as far as possible through a consensus. Permanent members of the steering committee will have voting rights, should voting be exercised.
- The PSC will delegate representatives to sit on selection panels for consultants and service vendors, if requested by UNDP.
- Permanent members of the PSC will appoint an alternate to attend PSC meetings, in the event that the designated representative is unable to attend.
- An Annual Tripartite Review of the project will be chaired by UNDP, as part of a regular PSC meeting. The TPR will approve the Annual Project Review (APR) and Work Plan

The Specific Functions of the PSC shall include:

- review and recommend approval of Annual Work Plans and budgets;
- monitor progress in project implementation against agreed Outcomes and Outputs
- provide strategic guidance, to ensure the timely and cost effective realization of project objectives;
- validate project outputs and, where appropriate, project documents;
- resolve conflicts and problem areas as needed to facilitate project delivery; and
- ensure that country commitments, including technical and operational support are met.
- The PSC may bring into effect various technical and scientific working groups as deemed necessary to support the work of the PSC and the project.

As the PSC represents the senior decision-making body for the project it will not be expected to deal with day-to-day management and administration of the project. This will be handled by the Project Coordinator, and in coordination with the Executing Agency.

PROJECT COORDINATION TEAM (PCT)

Context and General Responsibility

In view of the relatively complex implementation arrangements with different implementing agencies and several executing agencies, it is clear that it will sometimes be difficult for the Project coordinator and the Project Coordination Unit to take some decisions involving the different partners. The relative infrequency of the meetings of the PSC means that it will be necessary to have an intermediary body with representation of senior decision-makers across implementation and executing agencies.

Composition

The Project Steering Committee will have Permanent Members, as follows:

- UNDP and UNEP as GEF implementation agencies
- NBA, OSS, UNIDO and UNESCO as the four executing agencies
- Project Coordinator

Steering Committee Rules of Procedure:

The following rules of procedure are proposed and should be reviewed and adopted at the first PCT meeting:

- The Project Coordination Team will be chaired on a rotational basis as agreed by its membership.
- The PCT will normally meet twice a year, once being in preparation of the PSC meeting. Some allowance for adhoc meetings will be made in order to avoid any potential delays
- Much of the advice, guidance and support to be provided by the PCT will be provided remotely through e-mail exchange etc.

The Specific Functions of the PCT shall include but not be limited to:

- Providing technical and general support to the PCU and the executing agencies
- Assisting in the preparation of PSC meetings
- monitoring progress in project implementation against agreed Outcomes and Outputs
- provide strategic guidance, to ensure the timely and cost effective realization of project objectives;

PROJECT COORDINATION UNIT

Context and General Responsibility

The project Coordination Unit (PCU) will be put in place to manage the project as a whole, even if different executing agencies will have the main responsibilities for the various projects components.

The PCU will be based within the NBA Secretariat in Niamey and will comprise 4 key staff, each one with responsibility for one of the components. The PCU will be headed up by a Project Coordinator, who will also be in charge of the cross-cutting Component 4. Task Manager for Component 1 will be based in the OSS Secretariat in Tunis, although he/she will work closely with the rest of the PCU members to deliver the Component 1 effectively and to ensure good coordination and collaboration with activities under other Components.

Allowance has been made for, administrative and technical support to be recruited locally.

Location:

Within the NBA Secretariat, Niamey, Niger, and the OSS Secretariat, Tunis, Tunisia

Composition:

The PCU will provide a coordination and management structure for implementation of the entire project in accordance with the rules and procedures of UNDP as executed through the NBA and OSS Secretariats and under the day-to-day direction of the Project Coordinator, and based on the general guidance provided by the Project Steering Committee (PSC) and Project Coordination Team (PCT). The PCU comprises:

- Project Coordinator, who will also assume the role of Component 4 Task Leader
- Component 1 Task Leader
- Component 2 Task LeaderComponent 3 Task LeaderFinance, Administrative and Technical Support Unit, comprising at least
 - Finance and Administration Officer,
 - Administrative Assistant,
 - GIS, mapping and CAD technician(s)

Tasks

- Organization and implementation of the technical activities and close coordination with the NBA, OSS, and UNIDO technical management and expertise teams. and general coordination between and among the various
- Assistance in networking between and among project entities such as the PSC, national officials (all participating countries), Implementing Agency personnel, cooperating partners, National Focal Points, existing and potential co-financers, other related GEF and non-GEF projects, and others as appropriate and necessary;
- Organization of project related consultative meetings for introducing and implementing the project and project components and, as necessary, programme activities (including

arrangements for such necessities as simultaneous translation and the production of documents in various languages as may be necessary);

- Collection and dissemination of information on policy, economic, scientific and technical issues related to the overall project
- Preparation of progress reports (administrative and financial) concerning program activities and outputs;
- Preparation and arrangements for hosting annual Review Meetings and Mid-Term and Terminal Evaluation processes;
- Establishment of and assistance in networking between specialized institutions in participating countries and technical specialists from elsewhere; and
- General Project management (financial, logistical and strategic).

PROJECT COORDINATOR (WHO WILL ALSO ASSUME THE ROLS OF COMPONENT 4 TASK LEADER)

Context

The PCU will be headed up by a Project Coordinator, working out of the NBA Secretariat in Niamey with administrative support. This Project Coordinator will also take charge of Component 4 which is executed by three different executing agencies. The post of Project Coordinator/Task Leader for Component 4 will be a full-time post over five years and will be recruited through UNDP/NBA. This is a critical position and it is important that person filling this position has a continuous global view of the overall project. Component 4 is cross-cutting and deals with issues of governance and capacity that are relevant to the whole project. This is why the Project Coordinator will also be in charge of Component 4.

The Project Coordinator shall be in overall charge and have overall responsibility for the staff and day-to-day running of the PCU, under the supervision of the NBA and UNDP. The Project Coordinator is ultimately responsible for organizing and overseeing delivery on all aspects and activities of the Project

Location

The Project Coordinator will be based within the PCU within the NBA Secretariat in Niamey. He/she will be expected to travel to regional and other International locations consistent with these Terms of Reference.

General Responsibilities

The Project Coordinator (PC) shall be responsible for the overall coordination of all aspects of the UNDP-UNEP-GEF NB-ITTAS Project. He/she shall liaise directly with designated officials of the Participating Countries, other Members of the PSC, the GEF Implementing Agencies (UNDP, UNEP), the GEF Executing Agencies (NBA, OSS, UNIDO, UNESCO), UNDP Regional and Country Offices, existing and potential additional project donors, National Focal Points, and others as deemed appropriate and necessary by the PSC or by the Project Coordinator him/herself. The

budget and associated work plan will provide guidance on the day-to-day implementation of the approved Project Document and on the integration of the various donor funded parallel initiatives. He/she shall be responsible for delivery of all substantive technical, managerial and financial reports from and on behalf of the Project. He/she will provide overall supervision for all staff in the Program Coordination Unit.

Specific Duties

The Project Coordinator will have the following specific duties:

- Manage all Components of the PCU, its staff and project budget;
- Prepare an Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the Project Steering Committee and guidance by the Project Coordination Team, in close consultation and coordination with related Projects under the NBA and riparian states of NBA and ITTAS, National Focal Points, GEF Partners and relevant donors;
- Coordinate and monitor the activities described in the work plan;
- Flag any risks emerging during the project implementation that will hamper timely progress of the project implementation or successful delivery of intended outputs and outcomes.
- Direct the project monitoring and evaluation processes including the regional and demonstration components, and the design of the replication strategy to be developed from the demonstration projects;
- Oversee the development of information management tools to ensure evaluation, monitoring and replication activities;
- Ensure project compliance with all UN and GEF policies, regulations and procedures;
- Ensure consistency between the various programme elements and related activities provided or funded by other donor organisations;
- Assure preparation of Terms of Reference for consultants and contractors;
- Coordinate and oversee preparation of the substantive and operational reports from the Program;
 - Foster and establish close linkages with the other Projects within the zone, with other related GEF programs and, where appropriate, other relevant regional International Waters and related programs and projects within and outside of the region;
 - Represent the Project at meetings and other project related fora within the region and globally, as required; and
 - Submit quarterly reports of relevant project progress and problems to the PSC, IA and EA.
- Manage all activities associated with Component 4 of the project as the Component 4 Task Leader.

Qualifications

- At least fifteen years of experience in IWRM, ecosystem-based management, surface and groundwater resources and conjunctive management and other fields related to the assignment. Experience in institutional and policy matters and transboundary water resources management will be essential.

- Graduate and/or postgraduate degree(s) in a subject(s) related to the assignment (water resources, environmental management, natural resources economics etc).
- Demonstrated diplomatic and negotiating skills;
- Familiarity with the goals and procedures of international organizations, in particular those of the GEF and the Implementing Agency (UNDP), and regional organizations related to Project and Programme activities, and currently identified Project and Programme donors);
- Excellent working knowledge of both English and French
- Previous work experience in one or more of the participating countries, and previous work experience in the region on issues related to the Project will be very favourably considered.

COMPONENT 1 TASK LEADER

Context

The Task Leader for Component 1 will be a full-time position running for the first 30 to 36 months of the overall project. Component 1 is the most specialised and technical of the four components. The Task Leader will be responsible for the coordination of a team of experts, and ensuring that their combined inputs lead to a high quality transboundary diagnostic analysis (TDA). This will require an excellent good understanding of surface and groundwater resources and their interaction. The Task Leader will also be responsible for the drawing up of the Strategic Action programme (SAP) for the ITTAS. This will be based on a high degree of stakeholder consultation

The Component 1 Task Leader shall be in overall charge of the work to be carried out under Component 1 and will be responsible for ensuring that the specified outputs are delivered to standard and on-time.

Location

The Component 1 Task Manager will be mainly based within the OSS Secretariat in Tunis, with some time spent at the PCU in Niamey as necessary. He/she will be expected to travel to regional and other international locations consistent with these Terms of Reference.

General Responsibilities

The Component 1 Task Leader shall be responsible for the overall coordination of all the diagnostic studies leading to the drawing up of the Transboundary Diagnostic Analysis and the development of the Strategic Action program (SAP). General responsibilities will include:

- Supervision of a team of international, regional and locally-based specialists working on short-term inputs. The planning of these inputs will be the responsibility of the Component 1 Task Manager.
- Preparation of an Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the overall Project coordinator.
- Coordinate and monitor the Component 1 activities described in the work plan;
- Direct the project monitoring and evaluation processes as it relates to Component 1.
- Ensure project compliance with all UN and GEF policies, regulations and procedures;
- Assure preparation of Terms of Reference for consultants and contractors;

- Submit progress reports as required by the Project Coordinator.

Specific Duties

The Component 1 Task Leader will have the following specific duties:

- discussions with stakeholders, field visits and data collection activities. Data collection work will include the setting up and operationalization of a new data collection network aimed at filling critical gaps and providing longer records into the future.
- The overall supervision of the groundwater modelling work in order to achieve an overall understanding of the ITTAS system and its linkages with the Niger Basin and other surface water systems
- Compilation of the Transboundary Diagnostic Analysis and its acceptance by the member states.
- Development of the Strategic Action programme (SAP) and national action programmes using a participative approach
- Development of proposals for pilot demonstration projects to be carried out under Component 2.

Qualifications

- At least fifteen years of experience in IWRM, ecosystem-based management, surface and groundwater resources and conjunctive management and other fields related to the assignment. Experience in groundwater modelling will be favourably considered.
- Graduate and/or postgraduate degree(s) in a subject(s) related to the assignment (water resources, environmental management, natural resources economics etc).
- Demonstrated diplomatic and negotiating skills;
- Familiarity with the goals and procedures of international organizations, in particular those of the GEF and the Implementing Agency (UNDP), and regional organizations related to Project and Programme activities, and currently identified Project and Programme donors);
- Good working knowledge of both English and French
- Previous work experience in one or more of the participating countries, and previous work experience in the region on issues related to the Project and Programme will be very favourably considered; and

COMPONENT 2 TASK LEADER

Context

The Task Leader position for Component 2 is a full-time position. Component 2 largely comprises the design and implementation of a wide range of demonstration projects but there is the need to integrate across the different target areas and to ensure that implementation does not become compartmentalised along specific thematic (wetlands, forestry, protected areas). When successfully implemented, Component 2 will lead to the taking to scale of eco-system-based management in general and it is important that the Task Leader, working closely with the Project

Coordinator, ensures this. For this and other reasons, the Component 2 Task Leader will also work out of the NBA Secretariat in Niamey.

Location

The Component 2 Task Leader will be based within the PCU within the NBA Secretariat in Niamey. He/she will be expected to travel to regional and other International locations consistent with these Terms of Reference.

General Responsibilities

The Component 2 Task Leader shall be responsible for the overall coordination of all the pilot demonstration projects implemented under Component 2. This will include site identification and the planning, design and implementation of the individual demonstration projects. General responsibilities will include:

- Supervision of a team of international, regional and locally-based specialists working on both long-term and short-term inputs. This is probably biggest single task of the Component 2 Task Manager and will involve a wide range of expertise to be supervised.
- Preparation of an Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the overall Project coordinator.
- Coordinate and monitor the Component 2 activities described in the work plan;
- Direct the project monitoring and evaluation processes as it relates to Component 2.
- Ensure project compliance with all UN and GEF policies, regulations and procedures;
- Assure preparation of Terms of Reference for consultants and contractors;
- Submit progress reports as required by the Project Coordinator.

Specific Duties

The Component 2 Task Leader will have the following specific duties:

- Work with decision-makers, other stakeholders and team members in the final identification demonstration project sites under all four Outputs 2.1.1 to 2.1.4 covering the aquatic environment, protected areas, mountain forest ecosystems and the conjunctive management of groundwater and surface water. This identification will take place during the Inception Phase and also once the preliminary findings of Component 1 are known
- Finalise recruitment of the key experts, set up and make operational the project team and identify stakeholder representation at the different levels.
- Supervise the detailed planning and design of the individual projects in close consultation with stakeholder representation
- Supervise the implementation of the core activities of the pilot demonstration projects. This will involve a considerable delegation considering the thematic and geographical range of the proposed interventions.
- Plan and supervise a capacity-building programme for the target communities, including the organisation of locally-based workshops covering project management, ecosystem-based management and specific project-related aspects
- In support of project replication and taking to scale :

- Plan and supervise the organisation of on-site experience sharing with other communities
- Organize regional and national workshops for sharing experiences
- Design and establish a monitoring and evaluation system based on monitoring of ecosystem and social (livelihood) indicators
- Supervise the implementation of the monitoring and evaluation system.
- Compilation of reports

Qualifications

- At least fifteen years experience in IWRM, ecosystem-based management, surface and groundwater resources and conjunctive management and other fields related to the assignment. Experience in the management of large teams of different areas of expertise is essential. Experience in the planning, design and implementation of IWRM-style pilot demonstration projects and/or IWRM planning would be highly desirable, as would experience with dealing with a wide range of stakeholders.
- Graduate and/or postgraduate degree(s) in a subject(s) related to the assignment (water resources, environmental management, natural resources economics etc).
- Demonstrated diplomatic and negotiating skills
- Familiarity with the goals and procedures of international organizations, in particular those of the GEF and the Implementing Agency (UNDP), and regional organizations related to Project and Programme activities, and currently identified Project and Programme donors);
- Excellent working knowledge of French and English
- Previous work experience in one or more of the participating countries, and previous work experience in the region on issues related to the Project and Programme will be very favourably considered;

COMPONENT 3 TASK LEADER (TEST PROJECT MANAGER)

The Task Leader for the TEST project leading to Outcome 3.1 under Component 3 is the TEST Project Manager, who will be recruited by UNIDO and will have the authority to run the TEST project on a day-to-day basis. The overall Project Coordinator will take charge of the work leading to Outcome 3.2, in close coordination and collaboration with the Test Project Manager, ensuring that industrial competitiveness and environmental/social responsibility for reduced wastewater discharges is reinforced by legal and policy framework.

Location

The Component 3 Task Leader will be based within the PCU within the NBA Secretariat in Niamey. He/she will be expected to travel to regional and other international locations consistent with these Terms of Reference.

General Responsibilities

The Component 3 Task Leader shall be responsible for the overall coordination of all the deliverables implemented under Component 3. General responsibilities will include:

- Supervision of a team of international, regional and locally-based specialists working on both medium-term and short-term inputs.
- Preparation of an Annual Work Plan of the program on the basis of the Project Document, under the general supervision of the overall Project coordinator.
- Coordinate and monitor the Component 3 activities described in the work plan;
- Direct the project monitoring and evaluation processes as it relates to Component 3.
- Ensure project compliance with all UNIDO, UNDP and GEF policies, regulations and procedures;
- Assure preparation of Terms of Reference for consultants and contractors;
- Submit progress reports as required by the Project Coordinator.

Specific Duties

The Component 3 Task Leader will have the following specific duties:

- Work closely with the overall Project Coordinator
- Under the supervision and guidance by the UNIDO HQ Project Manager (PM), take full responsibility for the day-to-day management and coordination function for activities as mentioned in Outcome 3.1 of Component 3 of the project document.
- Ensure that budget management and local expenditures including procurement, travel and other miscellaneous are properly recorded and receipts for payments of goods and service kept
- Assist International Experts in the identification and verification of member states hot-spots priorities relating to their individual river basin management and pollution control/prevention plans.
- Assist in the identification of demonstration enterprises from the region and collection of data for the water pollution inventory and hotspots determination.
- Facilitate and ensure that voluntary commitment letters from selected enterprises are signed and received by Project coordinating team and Counterparts and assist TEST specialists in the setting up of TEST Enterprises Teams at demonstration sites
- Facilitate the smooth implementation of TEST tools in their respective tasks as well as facilitate the monitoring and assessments of envisaged milestone as mentioned in the logical framework in Outcome 3.1 of Component 3 of the project document.
- On behalf of UNIDO, liaise with relevant experts, national counterparts, as well as Ministries and national institutions and any other stakeholders meetings, workshop and or seminars as will be required.
- Represent UNIDO at the Steering Committee meetings and any other
- Prepare and submit quarterly progress report(s) first to the UNIDO Project Manager and thereafter to UNDP-Overall Project Coordinator within 3 weeks after the end of each quarter.
- Carry out any other technical coordination tasks that may be required by the Project Manager in this duration

Qualifications and Experience

- The expert is required to have advanced university degree in Natural Resources Management, Water Protection/Conversation, Ecological Engineering, and/or Business Administration. A first level university degree in Environmental Sciences, Chemical

Engineering and or Industrial Relations with substantial number of years of professional hands-on experience in industrial development may be accepted.

- A minimum of five (5) years of International professional level work experience is required. Proven experience in international project portfolio work for UNIDO (preferably complemented by work for other UN Organizations or other Multilateral Organizations) with relevant technical sustainable development field experience in developing countries (Africa essential).
- The expert is required to have in-depth and advanced level of knowledge of environmental resources management; environmental technology transfer; resource efficient and cleaner production methods; CSR; and green best practices and participatory methodologies in working with beneficiaries for trainings, monitoring and evaluation work.
- The expert is required to have sound knowledge concerning industrial operations and their resulting environmental conditions and problems in countries where this project will be implemented.
- The expert is required to have excellent proven planning and organisation skills with good communication and interpersonal skills. Proactive, resourceful and possess good problem solving skills; ability to work in a multi-cultural team with client orientation and high integrity and professionalism.
- Fluency in written and spoken English and French is required.

ANNEX 3: CO-FINANCING LETTERS

See the separate file.