

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: AB2974

Project Name	Niger Basin Water Resources Development and Sustainable Ecosystems Management Project
Region	AFRICA
Sector	General water, sanitation and flood protection sector (70%); Central government administration (30%)
Project ID	P093806
Borrower(s)	Benin, Guinea, Mali, Niger and Nigeria
Implementing Agency	NIGER BASIN AUTHORITY (NBA)
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Environment Category	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/>
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1. Country and Sector Background

Regional context and key development issues. The Niger River provides the economic mainstay for its nine riparian countries – Benin, Burkina Faso, Cameroon, Chad, Cote d’Ivoire, Guinea, Mali, Niger and Nigeria. It is the continent’s third longest river (4,200 km) with a basin covering a surface area of nearly 1.5 million km². Notwithstanding the Basin’s tremendous potential for development and investment, it still remains under-developed, thus limiting economic growth and means to improve the livelihoods of the Basin population. The potential to harness the river for hydropower, irrigable lands and agricultural productivity, and improved waterways to promote flow of goods and people across borders, remains under-developed. To date, seven out of the nine Basin countries are among the bottom 20 poorest countries in the world¹. Close to 75 percent of the Basin population lives in rural areas where food security and social well-being are directly dependent on the river and the existing water infrastructure. This heavy dependence on water resources places the Niger River, and subsequently, the Niger Basin Authority (NBA) at the center of any meaningful regional integration process. Established in 1963, the NBA is commissioned to provide overall guidance and promote coordination among the nine riparian countries to ensure integrated development of the Basin’s land and water resources as well as to promote economic growth. The pressing issues facing the Niger Basin are:

¹ The Human Development Report, 2004, UNDP Human Development Index

- Increasing population and vulnerable groups:** The Basin's population is approximately 106 million with an average annual growth rate of 2.8 percent. The biggest share is taken up by Nigeria, which has more than 80 million people whose livelihood is directly dependent on the Basin. The majority of this population is comprised of women and children under the age of 15, who are vulnerable and deprived of their means of livelihood because of the degraded environments and inadequate water resources development. With declining per capita income, poverty has reached critical levels in most of the Niger Basin countries, especially those in the Sahelian and landlocked areas. Furthermore, there has been an increase of vulnerable groups lacking basic services such as water, health and adequate food. These represent 48 percent in Mali, 50 percent in Cameroon, 53 percent in Guinea, 60 percent in Chad and 63 percent in Niger. To make progress in living conditions, it is necessary to take immediate actions that will facilitate proper targeting of the poor and design of effective poverty reduction measures.
- Degraded environment:** Poor land and water management practices coupled with water variability basin-wide are contributing to severe ecosystems degradation in an already poverty-stricken environment. The increased needs for energy and limited access to electricity, compel the Basin population to use wood and charcoal for domestic purposes, resulting into deforestation and biodiversity loss from over-exploitation. Sixty seven percent of the Guinean forests in the Niger River headwaters are degraded while in Niger more than three percent of the Basin's portion is annually deforested, mainly because of human activities and climatic effects. Cumulatively, these factors are perpetuating a vicious cycle of environmental degradation which in turn is directly threatening rural communities whose livelihood depends on these ecosystems. Over the years, the combination of recurrent drought and flood periods, along with high population growth rate and inadequate water resources development to meet the growing needs, have further increased poverty and put severe pressure on land and water resources. Reversing the Basin's environmental degradation calls for concrete actions that will offset the poor land and water resources practices, negatively affecting productive activities and water infrastructure performance.
- Unutilized development potential:** The Niger River Basin is endowed with abundant natural resources. However, inadequate management and development of water resources have resulted in sub-optimal benefits. Given this abundance, improvements in both agriculture and livestock production – the primary sectors of the basin - can be achieved by optimizing benefits from existing water infrastructure. Furthermore, adequate water resources development and management can facilitate incremental benefits associated with increased productivity and income. Current development opportunities in the Basin include: (i) 2.5 million ha of irrigable land of which only 20 percent are developed (ii) 30,000 GWh of hydropower potential but only about 6,000 GWh are developed, mostly in Nigeria (iii) 6,000 km of navigable waterways but less than 200 km are currently exploited, mainly in the Niger Delta in Nigeria (iv) an annual river discharge of 200 billion cubic meters but less than 30 billion cubic meters is stored in water infrastructure. Additional opportunities include the development of fisheries, watershed management and ecotourism, all of which could provide incremental benefits associated with water infrastructure. Immediate actions are required to assist the Niger Basin Authority and its riparian countries to develop a clear framework that will, in an integrated and optimized manner, tap into these opportunities.

- **Inadequate operation and maintenance of existing water infrastructure:** Insufficient water infrastructure and inadequate operation and maintenance are heavily impeding the effective management of existing hydraulic assets. Such situation overtaxes existing infrastructure, defers maintenance and results into sub-optimal utilization of water infrastructure which might otherwise generate multiple benefits to the Basin population. While it is apparent that additional infrastructure is required to effectively mitigate the seasonal and annual variability of the Niger River, improved operation and maintenance of the existing ones will ensure greater efficiency and long-term sustainability. Adequate operation and maintenance of existing large water infrastructures such as Kainji (15 BCM), Jebba (3.8 BCM) and Shiroro (6 BCM) are constrained by varied issues ranging from inappropriate maintenance and conflicting planning to lack of funding. The situation is similar for small water infrastructure. Investments are required to rehabilitate and upgrade existing infrastructure, establish a clear framework of interventions promoting sustainable management of valuable assets, and develop the existing water resources potential.
- **Competitive unilateral development and NBA's strengthening:** The lack of sufficient robust instruments for effective cooperation among the Basin countries contributes to their persistence for unilateral development of the river's resources. It is evident that the lack of such instruments will likely result in sub-optimal mechanisms clearly assigning benefits to each riparian country. Over the last decades, this unilateral development has limited NBA's ability to assert itself as a strong champion and use appropriate coordination mechanism to effectively promote regional development. To optimize the Basin's opportunities, it is imperative for the Niger Basin riparian countries to empower the NBA. It will be required to fully commit to key legal and institutional mechanisms fostering overall coordination, management and optimization of the activities across the Basin.

Progress in revitalizing the Niger Basin Authority. The nine riparian countries have acknowledged that planning for water resource uses at the national level have prevented them from maximizing the opportunities the river could offer if developed cooperatively. Therefore, the development of a cooperative framework supported by joint actions that promote regional integration and foster growth becomes a high priority. In outlining this process, the riparian countries focused on revitalizing the Niger Basin Authority. They agreed to focus on concrete actions which pave the way for broad regional cooperation and investment across the Basin. The following policy and technical milestones have been achieved in revitalizing the Niger Basin Authority and in establishing a cooperative framework for the Basin development:

- In February 2002 in Abuja, the 7th Heads of State Summit acknowledged the threats from unilateral planning, and committed themselves to pursuing a regional dialogue and seeking support for cooperative, sustainable development of the Niger River. They agreed to develop a Shared Vision supported by a Sustainable Development Action Program for the Basin. Subsequently, the chairman of the Heads of State Summit requested the World Bank to support this cooperative initiative;
- In January 2004 in Yaoundé, the NBA's Council of Ministers (COM) agreed to undertake the institutional and organizational audit of the NBA with the World Bank's support;

- In April 2004 in Paris, the NBA's nine Heads of State signed the Paris Declaration launching the Shared Vision process and called upon donor's support for concrete actions that pave the way for the preparation and implementation of the SDAP. The meeting was also an opportunity to foster harmonization of donors intervention with the signing of the Niger Basin Partners Framework for which the World Bank is the lead agency;
- In January 2005 in Bamako, the NBA's COM approved the preliminary finding of the regional priority actions to be developed in the Basin and instructed NBA to liaise with the World Bank for concrete initial actions on the ground;
- In May 2005 in Abuja, the NBA's COM approved the institutional and organizational reform of NBA including the complete revamping of its human resources;
- In February 2006 in Fada Ngourma, the first Niger Basin Civil society forum reasserted the needs, aspirations and dynamics of stakeholders contributing to the cooperative development and management of the Niger Basin as a common patrimony;
- In September 2006 in Niamey, the NBA's COM approved progress made in the preparation of the SDAP and called upon the World Bank's experience and ability to speed up the preparation of a regional program. This will be the initial step towards the implementation of the SDAP.

The above-mentioned policy decisions endorsed by the highest political and grassroots levels of NBA provide a clear evidence of the nine riparian countries ownership and readiness to undertake cooperative actions in the Niger Basin. Furthermore, following its organizational reform, the NBA has now the technical and institutional mechanisms to adequately implement its mandate at the satisfaction of its local, national and regional constituencies.

2. objective

The project development objective is to achieve a sustainable increase in the overall productivity of existing water resources to foster economic development in selected countries of the Niger River Basin. To achieve this objective, the project will focus on: (i) strengthening the institutional capacity of NBA and its national focal structures; (ii) rehabilitating, optimizing and developing regional water infrastructure; and (iii) restoring selected degraded ecosystems in association with income generation activities.

The expected outcomes include: (i) improved management capacity of NBA and its national focal structures; (ii) efficient delivery and optimization of water infrastructure; and (iii) sustained restoration and management of degraded ecosystems in the Basin. The project is expected to directly benefit 5 million people in the Basin and indirectly benefit approximately 10 million people.

3. Rationale for Bank involvement

Regional integration. The project fits within the Africa Region's strategy of providing support for regional integration effort that: (i) have economic and social benefits going across country boundaries; (ii) present clear evidence of both country and regional ownership; and (iii) provide a platform for a high level of policy harmonization among countries. The project will support the commitment of the Niger Basin riparian countries to undertake cooperative actions for the

management of the Niger Basin resources to address environmental issues and enhance regional growth. The riparian countries ownership and firm commitment are motivated by the successful reforms of the NBA and by the World Bank's involvement, from inception, in the overall renewal of the Niger Basin cooperative framework. This process was further reinforced by the Paris Declaration of April 2004 which emphasized the need for regional integration through optimized development and management of the Basin's shared water resources. Subsequent to the Paris Declaration, the Heads of State Summit requested that the World Bank play a key role in the Niger Basin cooperation. This request derives from underlying capability of the World Bank's to (i) leverage regional integration activities through the Africa Action Plan (AAP); (ii) bring its experiences in dealing with similar water resources management projects and regional River Basin Organizations; and (iii) mainstream its leadership and convening power for partnership with other donors.

The rationale for Bank intervention in the Niger Basin also builds upon the riparian countries' willingness and the urgent need to move away from unilateral planning towards coordinated development actions throughout the Basin. This is particularly important given the high variability of the Niger water resources associated with chronic energy crisis leading to increasing competition for dams' development. Unless a clear and consensual framework is set up with cooperative actions among riparian countries, this will undoubtedly lead to tension between the riparian countries. The project will help NBA and the riparian countries develop sound planning and management of the water infrastructures while sustaining the on-going efforts to preserve the fragile ecosystem. In terms of immediate benefits, the rehabilitation of existing water infrastructure will contribute to the optimized use of water resources and associated multiple benefits. To that end, the existing bilateral agreement between riparian countries, in particular, the provision made in early 1970 for Kainji and Jebba dams to operate on a regional basis are strong incentives to foster cooperation and boost countries' willingness for joint concrete actions. Consequently, the rehabilitation of Kainji and Jebba dams will restore the original performances of the plants contributing to meet the energy demand in Niger and to some extent, supply electricity to the northern part of Benin. Equally, restoration of degraded ecosystem associated with income generation activities in Guinea, Niger and Mali will significantly reduce the siltation risks in the Nigerian reservoirs thus enabling an upstream/downstream benefits sharing. These income generation activities will focus on the vulnerable groups including women, refugees and the unemployed youth. Wider benefits are also expected in the context of the West Africa Power Pool (WAPP) which complements this program with the development of a least cost energy program through the Northern corridor transmission line rehabilitation.

The Bank, with its history and long standing relationships in the Basin is well established to move the regional integration process forward. The Strategic Framework for IDA Assistance (SFIA) recognizes regional approaches as means to increase opportunities for poverty reduction, especially through the management of shared resources. The NBA and riparian countries have identified the regional priority issues in the basin, which are consistent with the nine Country Assistance Strategies (CAS) and PRSP goals for good governance and sustainable development. The identified interventions are closely connected with the World Bank newly established Sustainable Development Network, thus providing opportunities to consolidate synergies between water-infrastructure-energy and environmental sustainability. The project thus qualifies

for support from the special provision for selected regional integration projects approved under the International Development Agency (IDA) 15 Replenishment Agreement. Under this arrangement, one-third of the total project resources comes from each country's IDA allocation, while two-thirds come from regional funding from the special provision. The project is fully supported by the Regional Integration Department within the World Bank's Africa Region.

Finally, guided by the imminent request of NBA's riparian countries, the Bank's rationale for engagement is based on two main principles. First, there must be actions, results and the perception of results on the ground, taking advantage of the client's readiness to act as appropriate. Secondly, immediate actions should substantiate the on-going Shared Vision and SDAP process, thus opening a window of opportunity for further actions within the Basin.

Proven lessons for engagement. The project design builds on: studies and ESW ranging from national to regional multipurpose development opportunities in the Basin, fiduciary and procurement needs assessment and related capacity building. It also benefits from regional to local level experiences such as: (i) the Senegal River Basin Multipurpose Water Resources Development (MWRD); (ii) the GEF Reversing Land and Water Degradation Trends Project; and (iii) the Niger Basin siltation project financed by the African Development Bank. These lessons combined with the Bank's long involvement in the Niger River Basin demonstrate that regional integration fosters more effective multi-sector investments and sustainable development. As such, the project provides a unique opportunity to support water resources development and management, promote shared benefits and foster regional common good sustainability. It contributes to the harmonization of donors' intervention in line with NEPAD, AAP and NBA's Donor Partners Framework.

4. PROJECT DESCRIPTION

Overview of Program design. The Niger Basin Water Resources Development and Ecosystem management is aligned with the World Bank's RIAS. The program overall cost is estimated at US\$ 500 million. US\$ 156 million will fund the first phase with five different credits: US\$ 9 million to Benin, US\$ 9 million to Guinea, US\$ 15 million to Niger, US\$ 18 million to Mali, US\$ 105 million to the Federal Republic of Nigeria. Individual sector investment activities were considered as an alternative. However, this will neither strategically support the implementation of the SDAP nor advance the regional integration agenda. The nine riparian countries agreed that the first phase of the project focuses on five countries on the Niger River main stem. However, it is understood that the completion of the SDAP will include the remaining four countries (Burkina Faso, Chad, Cameroun, and Cote d'Ivoire) and broaden countries involvement in the program's second phase. The Program will support the Paris Declaration by strengthening cooperation. This will be done through three key targeted activities: (i) enhance the capacity of regional and national institutions to sustainably manage water resources agenda across the basin; (ii) upgrade, develop and optimize regional water infrastructure for regional growth; (iii) improve social and environmental conditions in the basin.

The economic performance of the Niger Basin countries is closely linked to rainfall variability. Unpredictable rains associated with lack of water infrastructure storage lead to risk adverse behavior as well as to the relocation of investments to more water secure economies. Consequently, increasing poverty and pressure on natural resources have negatively induced wide environmental degradation, thus threatening the basin water resources and many productive

activities. This, in turn, affects the existing infrastructures, hinders socio-economic performance and limits regional growth. Over the last years, environmental degradation in the upper basin in Guinea has remained a concern for existing water infrastructure in Mali. Similarly, increased sedimentation in the Niger River middle section in Mali and Niger combined with erosion of the upper sources tributaries in Benin are major threats for existing water infrastructure in Nigeria. Addressing these challenges required cooperative efforts on identified hot spots regardless of the boundaries, while ensuring that the overall benefits generated are shared among riparian countries.

The program is therefore designed to support NBA and its riparian countries to develop a robust framework of actions including the sustainable management of water infrastructure and ecosystem in a short, medium and long term approach. The first phase of the program includes three main components. Component 1 focuses on institutional Strengthening and Capacity Building of NBA and national structures involved in the project's implementation. Component 2 addresses the rehabilitation, optimization and development of regional infrastructure. Component 3 deals with rehabilitation of small water infrastructure and sustainable management of selected degraded ecosystems to address the issues outlined above while providing incentives to communities.

Following consultations with NBA's council of ministers, the riparian countries and implementing agencies have agreed on clear triggers for the second phase of the program:

- The policy, legal and institutional triggers are the endorsement and subscription by NBA's member countries to the legal instruments and institutional mechanisms for an efficient regional water resources optimization and management including: (i) a Niger Basin regional environmental code; (ii) legal instruments for top up financing of water infrastructure, common guarantee of infrastructure, dispute resolution and arbitrage enforcement (iii) implementation of the Niger Basin Water Charter; (iv) creation of a Permanent Water Commission (PWC);
- The technical triggers constitute the minimum threshold for the approval of WRDSEM 2 are the following: (i) PHCN has met the expected output in terms of availability of the rehabilitated units of Kainji within the allocated budget; (ii) at least 7 targeted small dams rehabilitated in Niger and Benin;

WRDSEM 2 will build upon the completion of due diligence processes for planned water infrastructure and the lessons learnt through the ecosystem management activities in order to scale up activities across the Basin. In addition, this second phase will very likely include priorities from the SDAP, and add the four remaining riparian countries in the program. The activities already identified for the second phase include: (i) contribution to the financing of Fomi, Taoussa, Kandadji and Zungeru dams; (ii) remaining activities on the equipment of Kainji dam; (iii) rehabilitation of Ladgo dam and the Garoua River port on the Benue; (iv) master planning of the Benue sub-basin; (v) scaling up of income generation activities associated with ecosystem management and mitigation measures for the development of additional water resources infrastructure. On-going studies on the feasibility of dam sites mentioned above will timely inform on the suitable sites to be further supported by WRDSEM 2. In addition to the triggers agreed, progress on activities undertaken in WRDSEM 1 will help make the adjustments required for a sound transition to phase two and to stay in compliance with the expected results and indicators.

Project development objective and key indicators. The development objective of the Niger Basin Water Resources Development and Sustainable Ecosystems Management (WRDSEM 1) is to achieve a sustainable increase in the overall productivity of existing water resources to foster economic development in selected countries of the Niger River Basin. To achieve this objective, the project will focus on: (i) strengthening the institutional capacity of NBA and national institutions involved in water resource management; (ii) rehabilitating existing regional water infrastructure and enhancing the regional planning framework; and (iii) restoring severely degraded ecosystems in selected areas that affect the Basin's water resources and productive activities.

The expected outcomes include: (i) improved management capacity of NBA and involved national water resources institutions; (ii) efficient delivery and management of regional water infrastructure; and (iii) enhanced restoration and management of degraded ecosystems for the Basin's sustainable natural resources. The project will target specific ecosystem hot spots and priority infrastructures located in the basin upper sources and its tributaries in Guinea and in Benin, in the middle section of the River in Mali and Niger and in the Niger River lower section in Nigeria. The project is expected to directly benefit 5 million people in the Basin and indirectly benefit approximately 10 million people. Annex 3 provides details on the project development objective and expected results.

1. Project components

Component 1: NBA institutional strengthening and capacity building: (US\$ 11.4 million). This component will enhance the capacity of NBA and its National Focal Structures including other national institutions involved in the project implementation. The key identified sub-components are:

- a. Strengthening and capacity building of NBA (US\$ 3.25 million).** Key activities include: (i) reinforcement of administrative and management skills of NBA to set up of an Overall Performance Evaluation system; (ii) strengthening NBA's communication capabilities and practices for sharing information, knowledge and experience in implementing its communication's strategy and to reinforce NBA's Information Technology; (iii) updating and implementing jointly with other partners NBA's capacity building program.
- b. Strengthening and capacity building of national water resources management institutions (US\$ 5.73 million).** This sub-component includes: (i) establishment of NBA's National Focal Structures inclusive of staff trainings; (ii) reinforcement of the coordination between National Focal Structures and the Executive Secretariat of NBA; (iii) assistance to national implementing agencies (PHCN, CeRPA, DNGR, DNAER and the DAERA) for the Project's effective management.
- c. Institutional strengthening of regional water resources management and planning (US\$ 2.42 million).** Activities under this sub-component will: (i) support the establishment of a Regional Consultative Group (RCG) to build a participatory consensus on water infrastructure development in the Niger Basin; (ii) provide an Independent Panel of Expert

(POE) to support the RCG with the “infrastructure management and optimization options” and “recommendations for coordinated regional infrastructure management rules” to be prepared under sub component 2.c); (iii) support the creation of a Permanent Water Commission (PWC) as a regulatory water management mechanism in the Niger Basin; (iv) establish sub-basin commissions to apply the required subsidiary principles to implement the SDAP; (v) prepare a Niger Basin regional environmental code; (iv) prepare legal instruments for top up financing, common guarantee, joint management of infrastructure, dispute resolution and arbitration enforcement; and (v) support the implementation of the Niger Basin Water Charter.

Component 2: Rehabilitation, optimization and development of regional infrastructures (US\$ 107.4 million). This component will focus on rehabilitation and upgrading of existing prioritized large² water infrastructure of regional relevance. Kainji and Jebba hydropower dams located in Nigeria have the potential to increase the energy production at a least cost and to supply additional energy to other Basin countries namely Niger and Benin. The design of the sub-components will include critical aspects such as safety, rehabilitation, improvement and multipurpose development. These sub-components are:

- a) *Rehabilitation of Kainji hydropower dam* including: (i) Rehabilitation and harmonization of productive electromechanical equipments ; (ii) Rehabilitation of auxiliary services; (iii) Rehabilitation of the navigation lock; (iv) Upgrading instrumentation and monitoring equipments; (v) Improvement of the flood warning systems and development of a decision support and management system.
- b) *Rehabilitation of Jebba hydropower dam (US\$ 9.77 million):* consisting of (i) Rehabilitation of electro-mechanical equipments; (ii) Rehabilitation of auxiliary services; (iii) Civil works; (iv) Upgrading of instrumentation and monitoring equipment; (v) Prevention of tree invasion; (vi) Reinforcement of the maintenance workshops.
- c) *Supporting optimization and management options for regional water infrastructure (US\$ 11.2 million).* This sub-component will support the strategic planning and development of regional multipurpose water infrastructure in the Niger Basin by bringing all major potential infrastructure at the same level of technical knowledge (at a detailed engineering design level with the relevant environmental and social requirements). The key activities will include: (i) complementary studies for Fomi dam site in Guinea; (ii) complementary studies for Taoussa dam site in Mal; (iii) complementary studies for Kandadji dam site in Niger; (iv) feasibility and detailed engineering studies for Zungeru dam site in Nigeria; and (v) regional water resources management rules to optimize the basin infrastructure.

Component 3: Sustainable management of selected degraded ecosystems and rehabilitation of small water infrastructure (US\$ 37.2 million)

² The adjectives ‘small and large’ are not necessarily related to the geometrical dimensions of the water infrastructure. In the context of this note, the adjective ‘small’ is intended to designate complexity of water infrastructure that local communities (beneficiaries) can reasonably handle, possibly with some limited technical assistance by public and/or private entities. ‘Large’ water infrastructure are those that, in the national context, require the intervention of specialized, external resources (planners, designers, contractors, suppliers, etc.).

In order to give grassroots level communities incentive for more active participation in environmental restoration and preservation in targeted areas across the basin, this component includes the promotion of income-generating activities combined with small water infrastructure rehabilitation and management. The component will create synergies between income-generation activities for local communities and sustainable water resources use while promoting environmental preservation. This approach is intended to help build strong ownership through a high level of participation and stakeholder interaction to ensure effective operation and maintenance of existing and planned infrastructure, enhance efficiency of investments and promote sustainable water resources management.

NBA and the riparian countries have agreed on technical, social and political criteria to select project areas. The technical criteria are related to the severity of environmental degradation and locations' suitability for restoration and for maximum project impact. The social criteria are related to the degree of poverty and incidence of vulnerable groups, including women and youth throughout the basin. The political criteria are linked to countries' decision to re-balance development activities across the Basin to focus on regional cooperation and integration. The areas and related activities were selected in a participatory process to promote national and local constituencies while fostering a regional behavior for common goods preservation and sustainable management. The priority areas for action include: the upper basin in Guinea (region of Faranah); the headwaters tributaries in Benin (upper Alibori, Goungoun, Sota and Goroubi – Karimama District); the Inner Delta in Mali (Circles of Mopti, Douentza, Djenne and Tenenkou); and the Niger River middle section in Niger Republic (regions of Tillabéri and Dossou). The selected activities are the following:

- a. *Rehabilitation and diversification of small dams:* Key activities include (i) rehabilitation and diversification of small dams in Benin; and (ii) rehabilitation of small dams in Niger for horticulture and irrigated vegetables in addition to livestock water supply.
- b. *Rehabilitation and extension of small irrigation schemes:* Key activities include: (i) rehabilitation of irrigation schemes in Niger through drainage restoration and development of flood and silt protections; (ii) development of small irrigation schemes for horticulture in Benin; and (v) development of recessional agriculture in Mali.
- c. *Support to the development of traditional fisheries:* Key activities will: (i) promote sustainable fishing practices and fish production processing; (iii) upgrade technology to enhance the livelihoods of fishermen (training and equipment such as nets, boats, ovens, processing and storage facilities); (iv) support co-management of fishery activities in selected areas; (v) support institutional strengthening and capacity building for sustainable development of fishery activities; and (vi) support development of local fishery management plans.
- d. Watershed Restoration and Agro-forestry:

- i. *Development of lowland areas (bas-fonds):* Key activities include: (i) development of a plan for watershed management in Guinea; (ii) afforestation of key vulnerable and degraded areas; (iii) identification of key areas suitable for local income generation activities based on land suitability and water conditions; and (iv) training in appropriate agricultural practices for watershed management.
- ii. ***River banks Stabilization and erosion control:*** Key activities include: (i) river bank stabilization and sediment flow control in selected *Koris*; (ii) sand dunes stabilization in selected *Dallos*; (iii) restoration and afforestation of degraded slopes using appropriate techniques; and (vi) communities training.
- iii. *Restoration of pastureland ecosystems:* Key activities will: (i) develop management plans for *Bourgou* production and regeneration; and (ii) support community participation and management of *Bourgou* including effective management of proceeds and provision of appropriate tools.
- iv. *Development of agro-forestry:* Key activities include: (i) design of a plan for sustainable development and management of forest and forestation activities; (ii) afforestation of degraded hot spots areas; (iii) introduction of seedling nurseries; and (iv) community organizations training.

The total project costs for the components are summarized below:

Components	('000 US\$)					
	IDA – Project Costs	%	Donor Parallel financing	%	Total	%
Component 1. NBA institutional strengthening & capacity building	11,400	62.0	6,990	38.0	18,390	9.1
Component 2. Rehabilitation, optimization & development of regional infrastructures	107,400	94.5	6,201	5.5	113,601	55.9
Component 3. Rehabilitation of national infrastructure and sustainable management of selected degraded environments.	37,200	52.2	34,000	47.8	71,200	35.0
Total Costs	156,000	76.8	47,191	23.2	203,191	100.0
Front-end Fees	0		0		0	
Total Financing Required	156,000	76.8	47,191	23.2	203,191	100.0

5. Financing

Financing Plan (US\$m)			
Source	Local	Foreign	Total
BORROWER/RECIPIENT			
INTERNATIONAL DEVELOPMENT ASSOCIATION	56.89	99.11	156.00
European Union			3.54
French Development Agency			4.94
Canadian International Development Agency			4.72
African Development Bank			34.00
Total:			203.20
Borrower: Guinea, Mali, Niger, Benin, Nigeria			
Responsible Agency: NBA Mr. Mohamed Belo Tuga Executive Secretary Niamey Niger Republic			

6. Implementation

Furthering partnerships. First and foremost, the NBA is a partnership between the riparian countries of the Niger River. The creation of the Niger Basin Commission lately enhanced as a Niger Basin Authority responds to the collective goal of addressing, regionally, the Basin's development challenges. The nine riparian countries are all signatories of relevant acts and decisions that govern NBA since 1963. Second, the NBA's Consultative Donors Committee established in 2000 is the mechanism to complement the Bank's relationships with donors that support NBA. Finally, the Donors Coordination Framework is led by the World Bank. The project builds upon these current engagements and complementarity to advance the agreed actions and steps with the implementation of the first phase of this APL. It complements activities funded by other partners such as CIDA, AFD, EU and ADB.

Institutional and implementation arrangements

The **Niger Basin Authority (NBA)** will be responsible for the overall implementation and coordination of the WRDSEM Project on behalf of the five riparian countries participating to the first phase, namely the Republic of Guinea, the Republic of Mali, the Republic of Niger, the Republic of Benin and Federal Republic of Nigeria. The legal arrangements of the project will be similar to those put in place for the Senegal River Basin Multipurpose Water Resources Development. This means that the World Bank will enter into financing agreements with each of the five participating countries and into a project agreement with NBA. The proceeds of the IDA financing will be made available to NBA under subsidiary agreements between each of the

countries and NBA. Annex 6 details the overall coordination and implementation arrangements. NBA and its National Focal Structures will assure the overall coordination and supervision of the project on behalf of the five participating countries. Component 1, related to institutions strengthening and capacity building, will be regionally implemented by NBA as transversal activity. Components 2 and 3 will be executed by national implementing agencies identified during project preparation under performance-based contracts. A capacity assessment of NBA's human resources has been done and additional staff will be recruited and integrated into NBA's technical department to ensure efficient and effective implementation. The institutional setting for implementation, monitoring and evaluation of the WRDSEM 1 Project is as follows:

- NBA will anchor the project at the regional level within its **Executive Secretariat**. A Regional Project Management Team (PMT) will be created under the Division of Operations. The Management Team will be fully integrated and supported by all NBA financial, procurement and technical staff, including personnel from the existing GEF and silting control projects. To ensure full endorsement by national authorities, NBA will sign protocol agreements with the line Ministries housing the implementing agencies. These protocol agreements will be substantiated with performance-base contracts between NBA and relevant National Implementing Agencies (NIA). These agencies will have the overall responsibility for the implementation of the Project in the national portion of the Basin and for achieving agreed results. The following national implementing agencies have been identified based on their technical and administrative capabilities: Power Holding Company of Nigeria (PHCN), the National Rural Development Directions of Guinea (DNGR), Mali (DNAER) and Niger (DAERA) and the CeRPA in Benin.
- **Regional Steering Committee (RSC)**: This Committee established by NBA's Council of Ministers will maintain oversight of strategic initiatives supported by the WRDSEM APL program. The RSC will meet once a year to give overall guidance to NBA and its National Focal Structures, formally review progress and approve project activities.
- **NBA Environmental Observatory**: The Observatory was established in 2005 with the NBA's institutional reform to ensure effective monitoring and evaluation of activities within the Niger Basin. The observatory will handle data collection and all required tasks to track, in collaboration with national agencies, project indicators.
- **West African Power Pool (WAPP)**: As the overall coordinating body for power utilities, the WAPP will liaise with NBA to enhance coordination for the development of power-related infrastructures. The Project will promote a framework towards joint planning of hydropower production and transmission. This will be specifically tested with the rehabilitation of Kainji and Jebba dams to which the WAPP will participate, as supervisor to complement NBA expertise deficiency in the power sector.
- **The NBA National Focal Structures**: These national focal structures will be mainly responsible for supervising the activities implemented at national level by the National Implementing Agencies. For this assignment, the National Focal Structures will team up with relevant experts from other ministries. As per their status, they will also act as the technical national arm of NBA and will therefore act as coordinating bodies between the regional

Project Management Team and national implementing agencies. The Project will support and strengthen the National Focal Structures and integrate the GEF project experts.

- **National Implementing Agencies** (NIAs) involved in the project implementation are the *Direction Nationale du Génie Rural* (DNGR, Guinea), *Direction Nationale de l'Aménagement et de l'Équipement Rural* (DNAER, Mali), *Direction des Aménagements et Équipements Ruraux Agricoles* (DAERA, Niger), the *Centre Régional pour la Promotion Agricole du Borgou-Alibori* (CeRPA, Benin) and Power Holding Company (PHCN, Nigeria). These national implementing agencies will either directly execute activities in their area of expertise or sub-contract them. A detailed description of these institutions is provided in annex 6.

7. Sustainability

The program is designed to foster ownership, enhance coordination and ensure long-term sustainability for water resources development and ecosystems management in the Niger Basin.

The project will support institutional sustainability through the establishment of legal instruments that promote effective planning and development of water infrastructure. At the regional level, the project will support the creation of a Permanent Water Commission responsible for the coherent management of regional water infrastructure. Also, the project will promote the establishment of the regional consultative group (RCG) and the associated panel of experts (POE) that will foster dialogue and guide NBA member countries in the development of new infrastructure. At the national level, improved capacities of and coordination with national implementing agencies will enable greater constituency to facilitate more effective management of the water resources and protection of degraded ecosystems within the Basin. At the local level, a decentralized and participatory approach, empowering key stakeholders, will foster ownership and promote local level constituency.

Technical and environmental sustainability will be supported through tailored capacity building of all participating institutions. In particular, the technical skills of the NBA will be enhanced through recruitment of additional staff inclusive of the Monitoring and Evaluation Unit within the Environmental Observatory.

Financial and economic sustainability will be assured with PHCN's improved performance management in relation to the on-going national energy reforms, in order to better cover the operation and maintenance of the two dams. Furthermore, the existing mechanism for countries contribution to NBA and payment of arrears will be improved, taking advantage of NBA results delivered on the ground. The mandate of the Permanent Water Commission and the legal instruments to be adopted by member countries, will provide opportunities to implement an adequate framework addressing the deterioration of small water infrastructure and protection of vulnerable ecosystems

8. Lessons Learned from Past Operations in the Country/Sector

The proposed Niger Basin WRDSEM APL program has been designed taking into account broad lessons learnt from a decade of Bank engagement in River Basins development in Africa. Lessons learnt from other regional projects such as the Niger Basin Reversing Land and Water Degradation project, the Niger Basin institutional and organizational reform process and Senegal River Basin Multipurpose Water Resources Development have been applied. The four most pertinent lessons that applied to the design of the WRDSEM APL are:

- *Coherence of approach and sustainability.* Identifying key priorities coupled with countries' commitment and regional benefits are critical to define the project objective and to ensure that the stated objective remains realistic. Multi-country projects require additional attention to address national priorities in an integrated and coherent manner while meeting the regional agenda and sustainability criteria. This also requires a realistic implementation schedule and budget. Emphasis has been placed on a coherent approach to ensure that riparian countries benefit from national activities with impact on the ground while contributing to the overall Basin natural resources management agenda.
- *Institutions strengthening and capacity building.* Consolidating the capacity of Niger Basin Authority and enhancing the capacity of national implementing agencies are crucial to effectively achieve the stated results and ensure sustainability of the project activities. The institutional reform of the Niger Basin Authority and those of the national focal structures contribute to this objective by bringing together regional competence and by promoting an environment of confidence which riparian countries can evolve in order to pursue both their development aspirations and deliver on the regional agenda. It is for this reason that the first component of the project focuses on institutional strengthening and capacity building at all levels. In addition, improving the communication and information on the existing infrastructure and the planned ones will enhance an environment of trust through which regional endeavor could be better expressed with the deliberation of the Regional Consultative group and the panel of experts to be established by the project.
- *Infrastructure development and climate variability.* Due to the heavy dependence of countries economy on the Niger Basin water resources, the development of water infrastructure is central to the agenda of many riparian countries. Over the last decades, the continuous trend of climate variability has negatively induced low economic performances which the magnitude goes beyond the national boundaries. This is particularly the case of the five countries located in main stem of Niger River where long series of droughts interrupted by unexpected years of floods have prompted the planning and the development of water infrastructure. Ensuring sound operation and maintenance of existing infrastructure while maintaining a coherent vision for the optimized development and management of the new infrastructure is a pre-requisite to respond to climate variability and to address the water storage gap faced the Niger Basin. The creation of the Permanent Water Commission and Sub-Basin commissions, will contribute to address the specific needs for regional water allocation and management to better respond to regional climate variability across the basin.
- *Regional common goods and national constituencies.* Unilateral planning has often led to tensions over scarce resources and less than optimal development offered by regional opportunities. This is particularly relevant in the Niger Basin where national agendas have

until recently dominated the regional ones. Consequently, regional common goods have not been fully experienced to yield appreciable benefits for NBA member countries, even if Nigerian's water infrastructure provides appreciable benefits to neighboring Niger and Benin. The Shared Vision process supported by the SDAP constitutes a robust framework for riparian countries towards moving to an optimal cooperation for coordinated water resources management. While countries' interests vary across the basin, it is important to maintain a comprehensive picture of the development opportunities in the Basin and achieve wise compromises which result in fair benefits for all. The combination of ecosystems management and water infrastructure development provide leverage to promote regional common goods behavior in consolidating national agendas with the reward of local constituencies that are the primary caretakers of the basin resources, but, who, in most cases, are the last beneficiary of regional common goods. For example, afforestation of the upper sources in Guinea will benefit to infrastructure in Mali. Similarly, erosion control and silt reduction in Mali and Niger Republic will also have positive impact in existing water infrastructure in Nigeria. Conversely, the support of Nigeria for regional infrastructure development and planning and the share of some benefits of its water infrastructure that upstream countries contribute to safeguard participate to the overall regional solidarity and common goods development.

9. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[X]	[]
Natural Habitats (OP/BP 4.04)	[X]	[]
Pest Management (OP 4.09)	[]	[X]
Physical Cultural Resource (OP 4.11)	[X]	[]
Involuntary Resettlement (OP/BP 4.12)	[X]	[]
Indigenous Peoples (OP 4.10)	[]	[X]
Forests (OP/BP 4.36)	[X]	[]
Safety of Dams (OP/BP 4.37)	[X]	[]
Projects in Disputed Areas (OP/BP/GP 7.60)*	[]	[X]
Projects on International Waterways (OP/BP/GP 7.50)	[X]	[]

10. List of Factual Technical Documents

World Bank, 2005: I. Andersen, O. Dione, M. Jarosewich-Holder and Jean-Claude Olivry. The Niger River Basin: A Vision for Sustainable Development. Washington, DC: World Bank.

World Bank, 2006: Water Resources Management & Development Opportunities in the Niger River Basin. Policy Note. Economic and Sector Work. Washington, DC: World Bank.

World Bank, Country Assistance Strategies (CAS) and Poverty Reduction Strategy Papers (PRSP) from Benin, Guinea, Nigeria, Niger and Mali. Washington, DC: World Bank.

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

World Bank, 2004: Project Appraisal Document of the Project “Reversing Land and Water Degradation Trends in the Niger River Basin”

World Bank, 2006: Project Appraisal Document of the Senegal River Basin Multi-Purpose Water Resources Development Project

Niger Basin Authority, 2004 and 2005: National diagnosis and regional synthesis reports on the multi-sectoral studies for the Sustainable Development of the River Niger Basin.

Niger Basin Authority, 2002 to 2006: Relevant decisions from NBA Council of Ministers’ and Heads’ of State.

Niger Basin Authority, 2007: *Projet de Développement des Ressources en Eau et Préservation des Écosystèmes dans le Bassin du Niger. - Cadre de Politique de Réinstallation des Populations (CPRP).*

Niger Basin Authority, 2007: *Projet de Développement des Ressources en Eau et Préservation des Écosystèmes dans le Bassin du Niger. - Cadre de Gestion Environnementale et Sociale (CGES)*

Niger Basin Authority, 2007: Project “Development of Water Resources and Preservation of Ecosystems” in the River Niger Basin. – *Report on the Social and Environmental Audit of Kainji and Jebba dams.*

Niger Basin Authority, 2007: *Projet de Développement des Ressources en Eau et Préservation des Écosystèmes dans le Bassin du Niger. – Socio-Economic Study.*

Niger Basin Authority, 2006: Project “Development of Water Resources and Preservation of Ecosystems” in the River Niger Basin. – *Diagnosis of the Sedimentation in Kainji and Jebba reservoirs.*

Niger Basin Authority, 2006: Project “Development of Water Resources and Preservation of Ecosystems” in the River Niger Basin. – *Safety inspection Kainji and Jebba dams.*

Niger Basin Authority, 2006: Project “Development of Water Resources and Preservation of Ecosystems” in the River Niger Basin. – *Study on the Enhancement of Flood Early Warning System; Installation of Additional Equipment in the Kainji Reservoir Zone. Review of Status and Options for Improvement.*

Niger Basin Authority, 2006: Programme de renforcement des capacités de l’ABN (2007-2009).

Haskoning, 2006 : Etude d’optimisation des opportunités de développement dans le bassin du Niger – Rapport Final.

SENES, 2006 : Etude de mise en place des Structures Focales Nationales de l’Autorité du Bassin du Niger (ABN). Rapport provisoire de Phase 2.

ADRH, APAVE, 2005 : Réformes institutionnelles et organisationnelles. Renforcement des capacités et des ressources humaines. Rapports No 1 et 2. Niger Basin Authority.

Colenco, 2005. Piloting Performance Based Procurement of Energy Infrastructure Services Functional Specifications (Rehabilitate-Operate-Transfer of Hydropower Facilities) - Kainji Hydroelectric Project - Case Study Material and Technical Concept Note.

US Army Corps of Engineers, September 2001: Kainji Dam and Power Station Technical Assessment Report. USAID.

Olivry, J.C. 2002 : Synthèse des connaissances hydrologiques et potentiel en ressources en eau du fleuve Niger. World Bank.

Sanyu Consultants Co. Ltd et al, March 1995: Study on National Water Resources Masterplan. Federal Republic of Nigeria. 4 Volumes.

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