

AFRICAN DEVELOPMENT BANK GROUP



NIGER

KANDADJI ECOSYSTEMS REGENERATION AND NIGER VALLEY DEVELOPMENT PROGRAMME SUPPORT PROJECT (PA_KRESMIN)

APPRAISAL REPORT

Translated Document

RDGW/AHAI

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Currency Equivalents
(March 2019)

UA1 = US\$1.3980

UA1 = EUR1.2246

UA1=CFAF 803.2718

Fiscal Year

1 January – 31 December

Weights and Measures

1 metric tonne	=	2204 lbs
1 kilogramme (kg)	=	2.200 lbs
1 metre (m)	=	3.28 feet
1 millimetre (mm)	=	0.03937 inches
1 kilometre (km)	=	0.62 miles
1 hectare (ha)	=	2.471 acres

Acronyms and Abbreviations

ABK:	Kandadji Dam Agency
ACMAD:	African Centre of Meteorological Application for Development
ADF:	African Development Fund
ADFD:	Abu Dhabi Fund for Development
ADPRS:	Accelerated Development and Poverty Reduction Strategy
AFD:	French Development Agency
AfDB:	African Development Bank
BADEA:	Arab Bank for Economic Development in Africa
BEEI:	Environmental Impact Assessment and Studies Office (<i>Bureau d'Evaluation Environnementale et des Etudes d'Impacts</i>)
BOAD:	West African Development Bank
CCA:	Central Coordination Administration
COFO:	Land Commission (<i>Commission foncière</i>)
CSP:	Country Strategy Paper
EBID:	ECOWAS Bank for Investment and Development
ECOWAS:	Economic Community of West African States
EPIC:	Public Industrial and Commercial Undertaking (<i>Etablissement public à caractère industriel et commercial</i>)
ESIA:	Environmental and Social Impact Assessment
ESMP:	Environmental and Social Management Plan
GTZ:	German Technical Cooperation Agency
GWh:	Gigawatt hour
HCAVN:	Niger Valley Development High Commission
HCI3N:	High Commission for the 3N Initiative (Nigeriens feeding Nigeriens)
IRSH:	Human Science Research Institute (<i>Institut de Recherches en Sciences Humaines</i>)
IsDB:	Islamic Development Bank
IUCN:	International Union for the Conservation of Nature
KFAED	Kuwait Fund for Arab Economic Development
LDP:	Local Development Plan
NBA:	Niger Basin Authority
NECSD:	National Environmental Council for Sustainable Development
OFID:	OPEC Fund for International Development
ONAHA:	National Hydro-Agricultural Development Agency
PA_KRESMIN:	Kandadji Ecosystems Regeneration and Niger Valley Development Programme Support Project
PBA:	Performance-Based Allocation
PNDI/CER:	National Irrigation Development /Runoff Water Collection Programme
RAP 2A	Resettlement Action Plan for Second Wave in Phase 2
RAP:	Resettlement Action Plan
RP:	Resettlement Plan
RPIU:	Regional Programme Implementation Unit
SDAP:	Sustainable Development Action Plan for the Niger Basin
SDF:	Saudi Development Fund
TFP:	Technical and Financial Partners
TSF:	Transition Support Facility
UNDP:	United Nations Development Programme
UNFPA:	United Nations Population Fund
WWF:	World Wildlife Fund

Project Information Sheet

Client Information

BORROWER: Republic of Niger
EXECUTING AGENCY: Kandadji Dam Agency (ABK)
 Financing Plan

Source	Amount (US\$ million)	Amount (UA million)	Instrument	Comments
ADF	65.03	46.52	Loan	Loan breakdown: - 32.00 million from ADF-14 PBA - 14.52 million from cancellations on closed project balances
ADF	49.59	35.48	Grant	Grant breakdown: - 27.00 million from ADF-14 PBA - 8.48 million from cancellations on closed project balances
TSF	13.98	10.00	Loan	Pillar I (Supplemental Support Window)
Other TFP ¹	972.13	695.47	Loan and Grant	
Government of Niger	95.05	68.00	-	
Total	1195.78	855.47		

ADF/TSF Key Financing Information

ADF loan currency	UA 46.52 million
TSF loan currency	UA 10 million
Commitment fee*	(0.5%)
Other fees*	(Service: 0.75%)
Tenor	(480 months)
Grace period	(120 months)
IRR (base case)	10.9% (CFAF 1,458.32 billion)
ERR (base case)	12.4% (CFAF 1,529.34 billion)

Time Frame – Main Milestones (expected)

Concept Note Approval	August 2018
Project Appraisal	November 2018
Project Approval	May 2019
Effectiveness	July 2019
Last Disbursement	June 2025
Completion	December 2025

¹ AFD, ADFD, WB, BADEA, IsDB, EBID, BOAD, SDF, KFAED, OFID. The breakdown of the financing is presented in Volume 2

EXECUTIVE SUMMARY

General Overview: The objective of the Kandadji Programme is to regenerate the river ecosystems and increase agricultural and energy production through the construction of a regulatory dam on the Niger River. Its implementation was planned in several phases. Along with eight (8) other partners, the Bank contributed to the financing of the first phase which was intended to focus on the dam's construction and resettlement of the population (Wave 1) living in the dam's right-of-way. The second phase, initially designed as a PPP (public-private partnership), comprised the construction of the power plant and power transmission lines as well as the second wave of resettlement (Wave 2) of the population living in the dam reservoir area. The Government finally retained the option of having it solely constructed from public funds. New financial partners (WB and AFD) therefore joined the Kandadji Programme TFPs from 2012.

Implementation of the Programme's first phase (2009/2017) was substantially cut back as a result of the suspension of the dam civil works following termination of the related contract. Only the dam construction preparatory works (protection of cofferdams, temporary bridge and contracting authority's camp) were completed. The activities planned under the Wave 1 Resettlement Action Plan (RAP 1) were also completed. Some 840 households (10,000 people) were resettled. The delay in the dam's construction, the main component of the first phase prevented achievement of the objectives. According to the completion report on the first phase,² this poor performance stems from: (i) the mismatch between the objectives, scope and complexity of the Programme and the capacities of the Executing Agency; (ii) inadequate analysis of programme-related risks, in particular, those pertaining to the management of the dam civil works contract, which represented two thirds of the total cost; (iii) the poor performance of the Technical Coordination Committee and the Steering Committee; (iv) institutional and political instability at programme start-up; (v) lack of harmonization of donors' safeguard modalities and policies during implementation of the environmental and social action plans; and (vi) the mismatch between the Bank's supervision and support mechanism and the scope and challenges of the programme.

The lessons learned from this first phase have been reflected in the restructured Kandadji Programme. These include: (i) creation of a Kandadji Programme executing agency; (ii) finalization of funding for all programme components; and (iii) assurance of programme implementation capacity-building by recruiting a supervisory entity to oversee the dam construction project, equipment of the hydropower plant, resettlement of the second wave of PAPs (RAP2) and provision of technical assistance to the contracting authority for the programme's external monitoring and evaluation. These lessons and the measures taken by the TFPs will ensure that the Programme is relaunched on solid grounds.

The restructured programme comprises the following components: Dam construction and installation of electrical equipment; environmental and social safeguards; growth pole and programme management. In time, this will ensure the construction of a multipurpose dam with a useful capacity of 1.5 billion m³ in two phases that will contribute to : (i) the regeneration and conservation of river ecosystems on the Nigerien stretch of the river guaranteeing a low-water flow of 120 m³/s in Niamey; (ii) the irrigation of 45,000 ha by 2030 in order to achieve food security and improve the living conditions of the beneficiary populations; (iii) the strengthening of energy security in Niger through electricity generation by constructing a hydropower plant with installed capacity of 130MW; and (iv) drinking water supply to the population and other users as well as higher incomes for the beneficiary populations by ensuring the security of stockbreeding systems and the sustainable development of agropastoral

² ADF/BD/IF/2018/169

activities.

In order to reduce risks related to the scale of second wave resettlement and in view of the security situation of the impacted area on Malian territory, the dam will be constructed in two phases (Phase A at an elevation of 224m that will be subsequently raised to elevation 228m in Phase B). Indeed, the population to be displaced is estimated at 49,610 people (8,088 households) comprising 32,991 people (5,555 households) in Phase A and 16,619 people (2 533 households) in Phase B. This project concerns the financing of Phase A of the programme for a total amount of UA 855.47 million and with a 6-year implementation period. The Bank's contribution will be UA 92 million. It will directly benefit 3 million people and indirectly the entire population of Niger estimated at 21.6 million.

Needs Assessment: Niger is a Sahelian country three quarters of whose territory is arid. It experiences recurrent droughts. The areas and fertility of agricultural land are steadily declining because of the lack of water, disappearing plant cover, erosion and increasing population pressure. Niger's surface water resources are seriously affected by chronic, recurrent droughts. The main surface water resource, the Niger River, has, since 1970 experienced a steady decline in its annual inflows currently reaching over 30% with increasingly severe and long low-water periods resulting in the deterioration of river and land ecosystems and making it difficult to satisfy socioeconomic uses. The length of the low-water period has risen from two months in 1970 (May to June) to four months (April to July), and the previous average flow rate of 70 m³/s for the driest month has also fallen to only 20 m³/s. This deterioration of natural resources on which rural communities, in particular, the poor, depend for their survival and the gradual loss of ecosystem resilience expose communities to the perpetuation of poverty and recurrent famines that endanger human health and reduce life expectancy. Moreover, global warming could further affect climate variability and increase the population's vulnerability. In order to mitigate the consequences of the reduction in the river's flow rates, the Kandadji Ecosystems Regeneration and Niger Valley Development Programme (P_KRESMIN) was officially adopted by the Government of Niger in August 2002.

Bank's Added Value: The Bank has constantly supported Niger since the preparation (feasibility) of the Programme and, subsequently, in leveraging the necessary funds to finance it. These efforts prompted the Government to designate the Bank as lead partner for the Programme. In July 2017, the Government submitted a request to the Bank to continue its efforts with 10 other TFPs. The Programme which is one of the government's top priorities has become even more urgent. The Bank's financing, in the amount of UA 92.00 million, will contribute to the effective implementation of the dam civil works and necessary infrastructure for the resettlement of Wave 2 people, completion of the measures and actions retained under the ESMP, as well as the strengthening of the project's management. This contribution will help to consolidate the Bank's support to Niger and strengthen its role as the Programme's lead partner. Those people who were resettled under the first wave are impatiently awaiting the project's implementation. In view of the Programme's large scale and sensitivity, more effective communication at local level and closer, proximity-based monitoring are planned. In addition, RAP 2 will be implemented in synergy and coherence with the local development actions planned in the affected municipalities. A strong, multidisciplinary team will be built at the Bank's Country Office in Niger to closely monitor the project. These arrangements will finally contribute to the effective construction of the emblematic Kandadji dam and the resettlement under good conditions of affected people. The Bank's image will, therefore, be associated with the successful completion of this major programme so eagerly awaited by the population and Niger Authorities for several decades.

Knowledge Management: The project will build the capacities of the different actors (professional producer groups, artisanal workers, youth and women, small and medium-sized

enterprises and industries). The dam's construction and RAP2 will provide work training for young professionals and technical employees. ABK personnel will benefit from the transfer of skills from the project supervisors and technical assistants. Good practices in the areas of water resource management, irrigation, meteorological early warning systems, hydrological and climatic models, database management, protected areas, population resettlement, reproductive health and environmental and social safeguards will be capitalised upon and disseminated.

(PA_KRESMIN): Results-Based Logical Framework

Niger: Kandadji Ecosystems Regeneration and Niger Valley Development Programme Support Project (PA_KRESMIN)						
Project Goal: Contribute to poverty reduction and the regeneration of river ecosystems						
Results Chains		Performance Indicators			Means of Verification	Risks/Mitigation Measures
		Indicator	Baseline Situation	Target		
IMPACT	Living conditions of populations improved.	National poverty rate	42.8% in 2017	37.6 in 2021 34 % in 2027	INS, ESDP, I3N reports	Risk: Insecurity around the Kandadji area Mitigation Measure: Establishment of security action plan
OUTCOMES	1. Ecosystem regeneration 2. Meeting energy demand 3. Improvement of food security	1. Flora and fauna regeneration rate 2. Demand satisfaction rate 3. Reduction in the number of food insecure people	<u>In 2018</u> 1. NA 2. 20% 3. 40%	<u>In 2024</u> 1. 80% of flora and fauna reconstituted 2. 70% 3. 20%	Reports of deconcentrated technical services of Ministries INS reports	
OUTPUTS	<p>1. Dam and Electrical Equipment</p> 1.1 Dam civil works completed; 1.2 Reservoir capacity achieved 1.3 Plant and power lines constructed 1.4 Diversion road constructed <p>2. Implementation of environmental and social plans</p> <p>ESMP Implementation</p> 2.1 Site deforestation 2.2 Community reforestation 2.3 Protected areas created 2.4 Degraded land restored 2.5 Insecticide treated bed nets 2.6 Cultural sites protected <p>RAP Implementation</p> 2.7 Populations resettled 2.8 Villages developed and serviced 2.9 Community infrastructure completed 2.10 Compensation paid to entitled persons 2.11 Income-generating activities carried out 2.12 Irrigated areas developed and equipped <p>Establishment of growth pole</p> 2.13 Pole feasibility study 2.14 Setting up of phase 1	1.1 % progress of works 1.2. Reservoir in m ³ and low-water period flow rate in m ³ /s 1.3 Power generated and transmitted 1.4 Road length in km 2.1 Area of sites deforested 2.2 Area reforested 2.3 Surface of areas created 2.4 Surface area of restored land 2.5 Number of bed nets distributed 2.6 Number of sites excavated and classified 2.7 Number of households resettled 2.8 Number and surface areas of sites developed and serviced 2.9 Amount of infrastructure constructed 2.10 % of entitled persons compensated 2.11 Number of income-generating activities carried out 2.12 Irrigated land developed (% allocated to women's groups) 2.13 Number of studies approved 2.14 Amount of key infrastructure constructed	<u>In 2018</u> 1.1 3% 1.2 0 and 20m ³ /s 1.3 0 1.4 0 2.1 2000 ha 2.2 0 2.3 0 2.4 2065 ha 2.5 0 2.6 5 2.7 840 2.8 3 2.9 150 in 3 2.10 9% 2.11 0% 2.12 2000 2.13 1 2.14 200 2.15 0	In 2024 1.1 100% 1.2 726 million m ³ of water at elevation 224m guaranteeing 80m ³ /s in Niamey 1.3 130 MW generated and transmitted to Niamey 1.4 35 Km asphalted between Gabou and Ayorou 2.1 6 000 ha deforested and cleaned 2.2 1 300 ha reforested 2.3 1.15 M ha protected area and sanctuary operational 2.4 5600 ha of land recovered 2.5 10 000 bed nets distributed to vulnerable groups including 7000 for women 2.6 12 sites excavated and listed; dam museum constructed 2.7 5555 households resettled 2.8 12 sites serviced on 1025 ha 2.9 1000 different infrastructure items constructed 2.10 100% of compensation paid 2.11 100 sub-projects, 50% of which are for women's groups 2.12 7.400 ha developed and farmed in 2024 (30% of surface area as incentive to women) 2.13 1 Study finalized and validated 2.14 Water infrastructure constructed over 1500 ha	Acceptance reports for works and equipment, Contractor's report and operational audit, Contract signed with firms, NGOs and other service providers Project progress reports Progress reports of technical services responsible for monitoring project implementation. Conventions and protocols signed with partner structures Aide-memoirs of TFP joint missions	<p>Risks:</p> (i) weak capacity of dam works contractor; (ii) population displacement delay; (iii) poor TFP coordination. <p>Mitigation Measures:</p> (i) careful selection of the contractor and effective involvement of contracting authority in updating IBDs and bid opening. (ii) recruitment of an operator to manage the resettlement and covering by TFPs of community infrastructure and site development works (iii) Designation of leaders by sector; establishment of thematic groups of TFP experts and the organization of regular and frequent joint meetings and missions

	3. Project Management 3.1 Procurement activities carried out 3.2 Project activities implemented 3.3 Financial management carried out 3.4 Monitoring-evaluation carried out 3.5 Independent review	3.1 PP maintained and complied with 3.2 Compliant disbursement rate 3.3 Audit reports produced 3.4 M&E system operational 3.5 Panel of independent experts	3.1 Prepared 3.2 0% 3.3 Firm recruited 3.4 Established 3.5 Established	3.1 PP updated at least once a year 3.2 Annual average of 17% per year 3.3 6 annual audit reports validated 3.4 A midterm M&E report and final report produced 3.5 5 Annual reports	-Procurement Plan -SAP system -Audit reports -Aide-mémoire of TFP joint missions and reports -Reports of panel of independent experts	Risk Weak executing agency capacity; Weak mobilization of counterpart funds. Mitigation measures Establishment of an agency as an EPIC; Recruitment of full-time multidisciplinary technical assistance for the contractor; Annual allocation in the State budget in accordance with financing plan
	COMPONENTS			INPUTS		
Key Activities	Component A: Dam and Electrical Equipment Construction of a structure to regulate the Niger River's flow rate; construction of a 1.5 billion cubic metre reservoir; diversion of National Road (NR); installation of hydropower plant equipment; installation of a 188km high voltage line Component B: Environmental and Social Safeguards Implementation of the Environmental and Social Management Plan (ESMP); and implementation of the Resettlement Action Plan (RAP2A) Component C: Growth Pole Establishment of a growth pole in the Niger River Valley Component D: Project Management Coordination, procurement, management, audit, monitoring-evaluation and communication activities Establishment and implementation activities Staff training, gender promotion and monitoring, and data analysis and archiving.			Inputs (in UA million) : 855.47 ADF : UA 92.00 million (10.8%) Other TFPs : UA 695.47 million (81.3%) Government : UA 68.00 million (7.9%) Costs by component (in UA million): Component A : UA 433.45 million (50.7%) Component B : UA 362.92 million (42.4%) Component C : UA 46.85 million (5.5%) Component D : UA 12.25 million (1.4%)		

Project Implementation Schedule

Year Quarter	2019				2020				2021				2022				2023				2024				2025	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
1 INITIAL ACTIVITIES																										
Loan and grant negotiations and approval		■																								
Signature of loan agreement and fulfilment of conditions precedent to first disbursement			■	■																						
Publication of General Procurement Notice			■																							
2 START-UP ACTIVITIES																										
Recruitment of additional staff			■	■																						
Project launching mission			■	■																						
Agreements with partner structures			■	■																						
3 DAM CONSTRUCTION																										
Water diversion structures			■	■																						
Dam civil works			■	■																						
Dyke backfilling																										
Dam impoundment																										
4 ESMP AND RAP IMPLEMENTATION																										
Recruitment of operator responsible for resettlement			■	■																						
Servicing of reception sites																										
Construction of dwellings																										
Establishment of compensation areas																										
Construction of socioeconomic infrastructure																										
Population compensation and resettlement																										
ESMP implementation																										
5 PROJECT MANAGEMENT																										
Updating of management tools			■	■																						
Establishment of ME system			■	■																						
Management, monitoring-evaluation and communication activities																										
Annual audit of accounts																										
Impact assessment and midterm review																										
ADF and Government Completion Reports																										

KANDADJI ECOSYSTEMS REGENERATION AND NIGER VALLEY DEVELOPMENT PROGRAMME SUPPORT PROJECT (PA_KRESMIN)

Management submits the following report and recommendations on two proposed loans and one grant for a total amount of UA 92 million to finance the Kandadji Programme Support Project.

I. STRATEGIC THRUST AND RATIONALE

1.1 Project Linkages with Country Strategy and Objectives

1.1.1 The Kandadji Programme Support Project is in keeping with the 2017-2021 Economic and Social Development Plan (ESDP), especially concerning the strategic thrusts relating to: (i) improvement of economic growth; and (ii) sustainable environmental development. It is considered to be one of the eight (8) growth poles to be supported under the ESDP. The project is consistent with the 3N Initiative ‘Nigeriens feeding Nigeriens’ whose objective is to ‘free the population of Niger from hunger and malnutrition and enable them to fully participate in national production and improve their incomes’. The Kandadji Programme is a key component in regulating the waters of the Niger River and is one of the priorities of the Sustainable Development Action Plan (SDAP) for the Niger Basin. It will also make a significant contribution to mitigating the impacts of climate change in the Niger River Valley. The large-scale mobilisation of water and support during the low-water period will, in fact, provide responses to climatic variability which is a major constraint on the country’s development.

1.2 Rationale for the Bank’s Involvement

1.2.1 The Bank has supported Niger since the preparation (feasibility) of the Programme and subsequently in leveraging the necessary funds to finance it. These efforts prompted the Government to designate the Bank as lead partner for the Programme. This Bank support is the *sine qua non* condition for restarting the dam civil works. The Authorities and beneficiary populations, in particular, the displaced persons (10000 people) of the first wave are eagerly awaiting the programme’s relaunching. The Bank’s participation in the project’s financing would be a continuation of its operations to support the Kandadji Programme and the rural sector as a whole in Niger through a large-scale structuring operation with a far-reaching impact. Indeed, the project will consolidate the achievements of the Bank’s operations in Niger in water resource mobilisation and towards mitigating climate change impact through its closed projects and the four active agricultural projects for a total amount of about UA 87 million.

1.2.2 The project objectives are in keeping with three of the Bank’s Hi-5s that aim to light up and power Africa, feed Africa and improve the quality of life for the people of Africa by building hydroelectric power generating capacity, developing agricultural value chains, establishing growth poles and improving the population’s access to basic services (water, electricity, etc.). The project is aligned with the Bank’s Long-Term Strategy (2013-2022 LTS) and its two strategic objectives of inclusive growth and the transition towards green growth. It will also help to achieve the objectives of the Enable Youth and Jobs for Youth in Africa flagship initiatives by promoting capacity-building and the emergence of opportunities for youth. Moreover, the project is consistent with the Bank’s Technologies for African Agricultural Transformation (TAAT) programme which focuses on the adoption of new production and processing technologies in agricultural value chains. It is also in keeping with the Bank’s second adaptation plan by promoting climate smart agriculture. The project is in line with the two pillars of the Bank’s Country Strategy Paper for Niger (2018-2022 CSP), namely: (i) promote the competitiveness of the economy to unlock its potential and foster job creation; and (ii) promote the development of resilient agriculture for highly sustainable and inclusive growth.

1.3 Aid Coordination

1.3.1 Official Development Assistance is coordinated through the ESDP consultation and coordinating bodies. Several sector coordination poles have been established. With the Ministry of Equipment, the Bank co-chairs the ESDP infrastructure sector coordination pole. It is a member of the rural environment transformation pole. The Bank's role has been strengthened following the opening of its country office in Niger.

1.3.2 Concerning the Kandadji Programme, the Bank has always been the lead Kandadji partner. In that capacity, it has organized several round tables and joint donor missions which have helped to determine the key conditions for the programme's relaunch and completion of the financing.

Table 1.3: Aid Coordination

Sector or Sub-Sector*	Importance (in 2017)		
	GDP	Exports	Labour
Agriculture and Rural Development	39.7%	35%	80%
Stakeholders – Annual Public Expenditure (billion CFAF)			
Government (2015-2017 average)	Donors	(2015-2017 averages)	
25 (23.33% of total expenditure)	BADEA	0.74	
	IsDB	1.13	
	IDA	30.43	
	IFAD	6.69	
	ADF	7.26	
	BOAD	1.87	
	European Union	20.00	
Level of Aid Coordination			
Existence of thematic working groups	Yes		
Existence of a global sector programme	3N Initiative (Nigeriens feeding Nigeriens)		
AfDB's role in aid coordination	Member (not leader)		

II. THE KANDADJI PROGRAMME

2.1 First Phase Implementation Status

2.1.1 P_KRESMIN implementation was planned in several concurrent phases. The first phase was implemented from 2009 to 2017 and financed by nine (9) donors (ADF, IsDB, OFID, ABEDA, KFAED, WADB, EBID, SDF and ABU DHABI).

2.1.2 The Bank played the role of lead TFP. The Bank's effective contribution of UA 40 million was in the form of an ADF loan and grant of UA 20 million each. This phase failed to achieve its objectives for several reasons including: (i) the poor performance of the firm selected for the dam civil works; (ii) the inadequacy of the consulting engineer's contract; (iii) inadequacies in the selection of certain technical options; (iv) the contractor's weak capacity; and (v) a lack of inter-partner coordination.

2.1.3 Concerning the dam's civil engineering works, the contract had to be terminated in July 2013 because of the contractor's poor performance. It was impossible to resume the works immediately because of the delay in terminating the contract. The Government had to subsequently assume responsibility and complete the dam construction preparatory work (protection of cofferdams, temporary bridge and contracting authority's camp). The bidding process for the dam's civil works was relaunched through advance procurement action (APA), the successful bidder was selected and works started.

2.1.4 With regard to the population resettlement plan, the resettlement of Wave 1 (RAP 1) was completed. Some 840 households were resettled (10,000 people). Compensation was paid for losses. In this context, irrigation areas (2,000 ha) were created for the affected people. Implementation of the ESMP and local development plan have reached a level that is satisfactory overall.

2.1.5 A process has been initiated to provide the population with land tenure security by granting long-term leases to people with customary rights over expropriated land and an operating contract to other operators. The lease documents, namely the standard lease contract and the buyer's specifications were discussed during public consultations with the general public and the revised version which emerged from these consultations was the subject of a ministerial order.

2.2 Restructured Kandadji Programme Components

2.2.1 In order to address the financial, technical and institutional shortcomings observed, the following measures were taken by the TFPs and Government: (i) mobilisation of additional financial resources to close the financing gap following several round tables; (ii) the recruitment of new construction management to update the engineering designs (DD and BD and control of the civil works of the dam and its ancillary structures; (iii) strengthening of the institutional arrangements by recruiting technical assistance for the contracting authority; (iv) establishment of a Kandadji Programme Implementation Agency (ABK); and (v) the recruitment of a new contractor with very sound credentials to carry out the dam construction works. These measures resulted in the Programme's restructuring to improve the coordination and consistency of its activities.

2.2.2 The restructured programme comprises the following components and sub-components: (i) Component A - 'Dam and Electrical Equipment' with the following sub-components: A.1 "Construction of the dam and ancillary annexes"; A.2 'Electrical Equipment' and A.3 'Technical Assistance Services'; (ii) Component B - 'Environmental and Social Safeguards' with the following sub-components: B.1 'the Environmental and Social Management Plan' and B.2: 'Resettlement Action Plan'; Component C - 'Growth Pole'; and iv) Component D - 'Programme Management'.

III. DESCRIPTION OF THE KANDADJI PROGRAMME SUPPORT PROJECT

3.1 Project Objectives and Components

3.1.1 The project objective is to contribute to poverty reduction and the regeneration of river ecosystems. The specific objectives of this key, multi-sector and multipurpose project are to: (i) regulate the low-water period flow rate to ensure ecosystem regeneration and water security; (ii) sustainably increase agricultural and animal production through irrigation control and the rationalisation of natural resource development; and (iii) increase the electricity access rate for people living in rural, peri-urban and urban areas, in several towns and localities in Niger.

3.1.2 It will be implemented over a six-year period (2019-2025). The project will focus on implementation of the civil works on the dam and its ancillary structures, implementation of the Resettlement Action Plan in Phase A, implementation of the updated ESMP as well as project management and coordination. The project will incorporate gender and youth employment in a cross-cutting manner in all its components. It is structured as follows:

Table 2.1: Project Components

Component and Costs	Description
<p>Component A: Dam and electrical equipment</p> <p>UA 433.45 million (50.7%)</p>	<p>Lot 1: (i) Construction of a 24 metre high concrete and fill dam with a 6.2 kilometre dyke; (ii) a spillway in the form of a weir with regulating valves with a capacity of 3,550 m³/s (ten thousand year return period); (iii) an integrated fish ladder; an inclined boat lift; (iv) civil works on the hydropower plant and (v) a 3m³/s water intake for irrigation in the immediate downstream area of the dam.</p> <p>Lot 2: Equipment for the power plant; Lot 3: Construction of the power transmission line (Tillabéry –Niamey) and Lot 4: Construction of the NR1-W diversion</p>
<p>Component B: Environmental and Social Safeguard</p> <p>UA 362.92 million (42.4%)</p>	<p>Sub-Component B1: Implementation of the updated ESMP with measures and actions concerning: (i) treatment of the dam reservoir sub-watershed (7400 ha of recovered land, 25% of which is planted) and the reforestation of 1600 ha; (ii) dam security; (iii) biodiversity and control of invasive aquatic plant proliferation; (iv) ecosystem protection; (v) deforestation of the reservoir (6000 ha); (vi) implementation of fishing, public health epidemiological and climate change adaptation activities; (vii) creation of a hippopotamus sanctuary and protected area covering 1.15 million hectares; and (viii) construction of the Kandadji museum to safeguard the cultural heritage.</p> <p>S-Component B2: Implementation of the Resettlement Action Plan for Wave 2 communities living in the reservoir area (RAP.2A): (i) management of the involuntary displacement of people affected by the dam’s construction; (ii) implementation of actions to support the compensation process and vulnerable people (including women in male-headed households); (iii) coordination of land commissions; (iv) organisation of gender-sensitive information and communication actions; (v) compensation for affected people (including women); and (vi) development and broadening of the scope of compensation as a population resettlement support measure.</p> <p>The project makes provision for the mobilisation of the resources required for community displacement in the second wave of Phase 1 by:</p> <ul style="list-style-type: none"> ➤ developing a site with a surface area of 1050 hectares for the resettlement of 16 villages and the town of Ayorou (for 5555 identified households comprising 32990 people): earthworks, establishment of roads and utility services before the handing over of plots to persons affected by the project (PAPs); ➤ constructing 10,801 private buildings on 3266 housing plots for use as dwellings; ➤ constructing community infrastructure such as: schools, health centres, DWS systems, electrification systems, youth centres, markets, warehouses, administrative offices with evidence of a gender-sensitive design; ➤ developing, in lieu of compensation for land, 400 net hectares of irrigation areas with land tenure security in the form of long-term leases; ➤ compensating for related losses in dwellings, income, crops as well as sacred and heritage sites; ➤ restoring livelihoods by adopting measures to develop agriculture, fisheries and income-generating activities; ➤ supporting the transition programme with displacement support measures, support to vulnerable people and capacity-building to improve security; ➤ contracting out resettlement operations to an experienced operator that will be responsible for all social intermediation up to the payment of compensation and support for PAPs during construction of their homes; ➤ organising mediation commission missions and hearings of the judge responsible for expropriations, support for the legal assistance system and legal redress: recruitment of an operator to assist PAPs on legal aspects and provide them with adequate advice; ➤ opening up resettlement sites: construction of two bridges and roads to improve access.
<p>Component C: Growth Pole</p> <p>UA 46.85 million (5.5%)</p>	<p>The aim of this component is to establish a growth pole around the dam. It includes: (i) preparation of the Niger Valley Integrated Development Master Plan; (ii) preparation of feasibility studies for 45,000 ha of irrigation areas; (iii) study and establishment of the growth pole; and (iv) implementation of the first phase of the pole on a pilot area with 1500ha of irrigation infrastructure.</p>
<p>Component D Project Management</p> <p>UA 12.25 million (1.4%)</p>	<p>Support for the project’s operation for which ABK will be partly responsible: (i) renewal of logistic resources; (ii) renewal of IT and office automation equipment; (iii) renewal and procurement of additional furniture; (iv) strengthening of the monitoring and evaluation mechanism and implementation of the ESMP and RAP; (v) coordination of project activities; (vi) cross-cutting gender and youth employment approach; (vi) administrative, accounting and financial management; (vii) procurement of goods, works and services; and (viii) establishment of annual audits, midterm review and engineering designs.</p>

3.2 Technical Solutions Adopted and Other Alternatives Explored

3.2.1 The preparatory civil works on the Kandadji Dam (temporary bridge, cofferdam protection and contracting authority’s camp) have already been completed. The option of building the dam on the Kandadji site has been adopted. The alternative options explored were: (a) construction of the dam in a single phase; (b) enhancement of the efficiency of existing systems for power generation as well as surface and groundwater supply; (c) alternative energy sources (solar and wind energy); (d) options for dams on the Niger River (Gambou dam); and (e) the no dam option (*status quo*). The Kandadji Programme was considered to be the best option meeting all set objectives, namely: (i) provide support

during the low-water period, reduce environmental degradation and restore the Niger River ecosystems; (ii) ensure the sustainability of irrigation and water supply, and (iii) generate electricity. It is worth noting that the *status quo* should be avoided for it would lead to a deterioration of the already difficult existing situation because of the sharp drop in water inflows of the Niger River, owing to climate change and especially its consequences on the population and environment.

Table 2.2: Alternatives Explored and Reasons for Rejection

ALTERNATIVES	BRIEF DESCRIPTION	REASON FOR REJECTION
Alternative option for the construction of the Kandadji Dam	(a) Enhanced efficiency of existing energy generation; and surface/groundwater supply systems; (b) Alternative sources of energy; (d) Other dam sites on the Niger River; and (e) No dam option.	<ul style="list-style-type: none"> ▪ None of these options on their own meets all the programme's objectives
Construction of the dam in a single phase as well as the resettlement plan	(a) Construction of dam at elevation of 228 metres; (b) Implementation of RAP in a single phase including on Malian territory.	<ul style="list-style-type: none"> ▪ The scale of RAP 2 (50,000 people to be displaced) could not be implemented in a single phase; ▪ Current difficulty of implementing the RAP on Malian territory because of the security situation
Project management by an autonomous unit	Autonomous Project Implementation Unit (PIU) within the Executing Agency	<ul style="list-style-type: none"> ▪ This option's limitations were revealed during implementation of the Programme's first phase

3.3 Project Type

PA_KRESMIN is an investment operation that is consistent with the new Economic and Social Development Plan (2017-2021 ESDP), the Government's I3N and Niger's 2018-2022 CSP. The unused balances on the ADF loan and grant awarded to the Programme in 2008 were cancelled and partly reallocated to this support project. An amount of UA 59 million from ADF-14 resources is also allocated to the project as well as UA 10 million from TSF. The financing to be awarded is broken down into grants and loans of UA 35.48 million and UA 56.52 million respectively.

3.4 Project Cost and Financing

3.4.1 The estimated cost of the project, to be implemented over a six-year period is UA 855.47 million, excluding taxes and customs duties (CFA.F 685.27 billion), comprising UA 555.84 million in foreign exchange (CFA.F 45.25 billion) and UA 299.63 million in local currency (CFA.F 240.02 billion). Customs duties and taxes are the responsibility of the central government which should take the necessary measures to apply this provision. The foreign exchange component represents 65% of the total, net of taxes, and the local currency component is 35%. A 5% physical contingency rate has been applied to the base cost. A provision for price escalation at a compound rate of 3% was applied to all the components including physical contingencies. The breakdown of project costs is presented in the tables below by component and expenditure categories. An expenditure schedule by component is also provided. The detailed project costs and list of goods and services are respectively presented in Annexes B2 and B10 of Volume II.

Table 2.3: Summary of Estimated Costs by Component

Components	CFAF million			UA million			% F.E.
	F.E.	L.C.	Total	F.E.	LC	Total	
Component A: Dam and Electrical equipment	269 717.33	51 329.25	321 046.58	336.71	64.08	400.79	0.84
Component B: Environmental and Social Safeguards	119 351.39	149 456.57	268 807.96	149.00	186.57	335.57	0.44
Component C: Growth Pole	20 820.00	13 880.00	34 700.00	25.99	17.33	43.32	0.60
Component D: Project Management	1 806.46	7 265.51	9 071.97	2.26	9.07	11.33	0.20
Total Base Cost	411 695.18	221 931.33	633 626.51	513.96	277.05	791.01	0.65
Provision for Physical Contingencies	20 584.76	11 096.57	31 681.33	25.69	13.85	39.54	0.65
Provision for Price Escalation	12 968.40	6 990.84	19 959.24	16.19	8.73	24.92	0.65
Total Project Cost	445 248.34	240 018.74	685 267.08	555.84	299.63	855.47	0.65

Table 2.4: Summary of Estimated Costs by Expenditure Category

Expenditure Categories	CFAF million			UA million			% F.E.
	F.E.	L.C.	Total	F.E.	L.C.	Total	
Works	272 913.36	126 274.4	399 187.74	340.70	157.64	498.34	68.37
Goods	84 569.54	43 901.9	128 471.44	105.57	54.81	160.38	65.83
Services	46 758.22	40 233.0	86 991.25	58.37	50.23	108.60	53.75
Personnel	111.72	4 522.0	4 633.70	0.14	5.65	5.78	2.41
Operation	7 342.20	7 000.0	14 342.20	9.17	8.74	17.90	51.19
Total Base Cost	411 695.18	221 931.33	633 626.51	513.96	277.05	791.01	0.65
Provision for Physical Contingencies (5%)	20 584.76	11 096.57	31 681.33	25.69	13.85	39.54	0.65
Provision for Price Escalation (3%)	12 968.40	6 990.84	19 959.24	16.19	8.73	24.92	0.65
Total Project Cost	445 248.34	240 018.74	685 267.08	555.84	299.63	855.47	0.65

Table 2.5: Expenditure Schedule by Component (in CFAF million)

Components	2019	2020	2021	2022	2023	2024	Total
Component A: Dam and Electrical Equipment	39 905	106 356	109 846	61 990	13 584	15 531	347 212
Component B: Environmental and Social Safeguards	15 404	73 654	96 483	57 787	40 958	-	290 716
Component C: Growth Pole	-	9 382	9 382	9 382	9 382	-	37 528
Component D: Project Management	1 574	1 578	1 784	1 606	1 635	1 635	9 811
Total Project Cost	56 884	190 970	217 495	130 765	65 559	17 166	685 267

3.4.2 The ADF will finance the project along with 10 other technical and financial partners and the Government. The co-financiers are the World Bank, WADB, EBID, ABEDA, IsDB, OFID, the Saudi Fund, the Kuwait Fund, AFD and the Abu Dhabi Fund. AfDB's contribution to this project will be UA 92.00 million (CFAF 73.70 billion). ADF financing will be used to finance 22% of the dam's cost, 95% of the Environmental and Social Management Plan costs (in particular protection of ecosystems, cultural heritage, fishing activities, reduction of nuisances, health improvements, implementation of the gender action plan, capacity-building, ESMP management and climate change adaptation); it will also finance part of the RAP2 costs (servicing of reception sites, community infrastructure, facilitation of access to sites, support to agricultural development actions, external monitoring of the RAP2A, support to the resettlement process) and part of the project management costs. The aforementioned co-financier support is estimated at UA 695.47 million (CFA.F 557.10 billion). The Government counterpart is estimated at UA 68.00 million (CFA.F 54.47 billion). The civil works will be carried out jointly with the other TFPs and in parallel for the other activities. The Bank's financing is awaited to complete the project's total financing.

Table 2.6: Sources of Finance

Sources of Finance	CFAF million			UA million			% per source
	F.E.	L.C.	Total	F.E.	L.C.	Total	
ADF/TSF	47 245.34	26 450.34	73 695.68	58.98	33.02	92.00	10.75
Other TFP	381 535.35	175 563.94	557 099.29	476.30	219.17	695.47	81.30
Government	16 467.65	38 001.34	54 472.11	20.56	47.44	68.00	7.95
Total Project Cost	445 248.34	240 018.74	685 267.08	555.84	299.63	855.47	100

Table 2.7: Sources of Finance by Expenditure Category (in UA million)

Categories	ADF	Other TFP	Government of Niger	Total	% ADF/TSF
Works	66.91	398.48	32.95	498.34	13.43
Goods	2.03	156.64	1.71	160.38	1.26
Services	14.50	68.90	25.20	108.60	13.35
Personnel	1.08	3.42	1.29	5.79	18.68
Operation	0.55	15.62	1.73	17.90	3.10
Total	85.07	643.06	62.88	791.01	10.75
Provision for physical contingencies (5%)	4.25	32.15	3.14	39.54	-
Provision for price escalation (3%)	2.68	20.26	1.98	24.92	-
Project total cost	92.00	695.47	68.00	855.47	10.75
Percentage (%)	10.75	81.30	7.95	100.00	-

3.5 Project Target Area and Beneficiaries

3.5.1 The direct project area covers the Tillabéry region where the dam site is located, Niamey Urban Community and Dosso Region. It has an estimated population of 3 million, 1.53 million of whom are women. The climate is Sahelian, with very low rainfall (315 mm per year in Ayorou). The main activities practised there are agriculture, fishing, stockbreeding and handicrafts. Productivity is low because of climate variability. Women are very active in the local economy, particularly in market gardening, handicrafts and produce marketing and processing.

3.6 Participatory Process for Project Preparation, Design and Implementation

3.6.1 The participatory process followed during preparation and implementation of the Programme's first phase has continued. In September 2018, the Bank prepared the completion report for that phase. The diagnosis made of the shortcomings observed and lessons learned from implementation of this first

phase were factored into the project’s design (see Box 1). The communities concerned were involved in the definition of the options particularly in the preparation of the Programme’s RAP 2, ESIA and ESMP. The resettlement sites were identified with their agreement during multiple consultation activities. The population was consulted throughout the conduct of the studies, on the principles of compensation and indemnification, the selection of resettlement sites and activities to improve the means of livelihood. These consultations also included the host communities, especially regarding the selection of resettlement sites. Prior to RAP2 finalisation, public consultations were organized for affected communities, which contributed to the validation of results and the main implementation options of RAP 2.

3.6.2 The KBA has adopted a communications strategy which is regularly updated and on the basis of which a Stakeholder Engagement Plan was crafted and implemented during the RAP’s preparation up to its validation. In order to maintain communication with affected people during the period between the completion of the studies and works start-up a transitional communications plan was prepared at the Bank’s request and will be implemented by KBA. It covers the period from January 2019 to February 2020. The stakeholder commitment plan required during the RAP’s implementation will be one of the first activities to be implemented by the international service provider during the first three months of its contract. The participatory process will continue during the project’s implementation. The development of effective communication around the project and maintenance of the participatory process during implementation are guarantees of ownership by the different beneficiaries and of the project’s success.

3.7 First Phase Experience Reflected in the Project Design

3.7.1 A technical audit was commissioned following termination in August 2013 of the programme’s main contract concerning the dam’s civil works. This audit, the joint TFP supervision missions and the first phase completion report revealed shortcomings at several levels in the formulation and implementation of the programme. The lessons learned from implementation of this phase were leveraged to restructure the programme on a more solid basis (see Box 1).

Box 1: Lessons Learned from Implementation of the Programme’s First Phase

The main shortcomings revealed in these documents concern: (i) the underestimation in 2008 of the dam’s costs and cost of the environmental, and social action plan; (ii) inappropriate allotment of the different works; (iii) limitation of the consulting engineer’s mission to assistance to the contracting authority for works supervision; (iv) limited capacity of the contracting authority relative to the magnitude of the programme; (v) the implementation schedule was not appropriately adapted to the implementation of activities; (vi) poor performance of the Regional Technical Coordination Committee (RTCC) intended to carry out close external monitoring and evaluation of activities in the field and facilitate the Programme Steering Committee’s (SC) work coupled with low level of involvement of the Administrations technical services in the Programme’s implementation. Long consultations were held between the Government, TFPs and other stakeholders to address these shortcomings and carry out a new restructuring of the Programme that will relaunch the works on the dam and its ancillary structures while producing a high-quality RAP.

In order to correct this underestimation of costs, detailed studies to update the dam DD and the resettlement plan for the second wave of people were prepared and the costs updated. Concerning inappropriate allotment, a new allotment of works was adopted to take into account interactivity between the different works, namely: (i) Lot 0: Preparatory work already carried out (protection of cofferdams, construction of contracting authority’s camp and temporary bridge); (ii) Lot 1: Civil works/hydro-mechanical equipment (including the plant civil works); (iii) Lot 2: the Hydropower plant (hydroelectric equipment and terminal station); (iv) Lot 3: Kandadji/Niamey power transmission line and step-down sub-station in Niamey; and (v) Lot 4: diversion of national road NR1W.

To offset the contracting authority’s weak capacity and difficulties encountered, the following measures were retained by the Government and TFPs: (i) recruitment of a new contracting authority for Lots 1 and 2 which has already carried out DD/IBD on the dam and which will control the works on-site; (ii) the recruitment of two contracting authorities for lots 3 and 4; (iii) the recruitment of technical assistance for the contracting authority which has been operational since 2017; (iv) establishment of a Kandadji Dam Agency as a commercial and industrial undertaking; (v) the performance of an audit on the implementation of the resettlement of the first population wave. This audit drew lessons for the implementation of RAP2 by a qualified international service provider. This will help to improve implementation (in compliance with standards and time frames) and ensure efficient monitoring of the different activities; and (vi) the recruitment of an international consulting firm to conduct the RAP 2 studies.

Concerning the implementation schedule, a coherence plan was prepared. It provides a timetable for the harmonized implementation of the project's various components. It is based on the critical path method and is updated periodically. The Regional Technical Consultation Committee (RTCC) will be maintained with a clearer definition of its role and measures will be proposed to revitalise it by focusing on the synergy of actions and a more active role in communicating with the target communities.

3.8 Key Performance Indicators

3.8.1 The key performance indicators are those set out in the logical framework whose monitoring will be coordinated by the ABK monitoring and evaluation manager, in close liaison with the Ministry of Planning, the I3N and all the partners and structures associated with the project. The socioeconomic indicators will be gender-disaggregated. Monitoring will, in particular, cover: (i) the level of food security and poverty rate at national level and in the project's area of intervention; ii) increased agricultural and animal production; (iii) additional electric power generation; (iv) surface area of deforested sites; (v) reforestation surface area; (vi) status of dam civil works; (vii) volume of dam impoundment and regularized flow of the Niger downstream from the dam (Kandadji and Niamey) (viii) the demarcated surface area and operationality of protected areas and local management structures established in Phase 1; (ix) the number of sites, households and people resettled; (x) the percentage and number of entitled persons compensated; (xi) the developed and enhanced surface area of the irrigated zones offered as compensation or incentive, including those allotted to women's groups.

3.8.2 Output indicators (iv) to (xi) will be provided in the quarterly project implementation reports and all performance achievements will be reported and analysed in the midterm review to determine whether modifications would be necessary to achieve project objectives. Consultancy services for final project appraisal are planned six months prior project completion.

IV. PROJECT FEASIBILITY

4.1 Economic and Financial Performance

4.1.1 **Financial Rate of Return:** The financial rate of return was calculated on the basis of a 30-year lifespan, through financial cash flows structured into inflows and outflows. The inflows are the financial benefits paid directly to affected communities in the Niger River Valley (estimated at 3 million people) and the central government of Niger. These are the project's economic benefits comprising gross additional income (added value) generated by the main outputs of agricultural production sub-sectors (plant, animal, fishery and forestry) supported by the project in the affected municipalities of some Departments in the Tillabéry Region and by the generation and distribution of electricity to customers in the regions of Niamey, Tillabéry and Dosso. Additional added value is the cumulative amount of additional revenue resulting from the difference between the baseline situation and the "project" situation for each model retained. The additional revenue at maximum output will be obtained in 2024 following a gradual increase from 2020. The basis of calculation of the additional revenue is set out in Annex B7. The outflows comprise all the costs as planned in the detailed cost tables as well as annual routine maintenance and repair costs for the facilities and other production infrastructure constructed over the 30 years concerned. An equal inflation rate was assumed between inputs and uses of the financial /cash-flow table, with a balance equal to zero over the cash-flow build-up time.

4.1.2 The project's induced added value is CFAF 80.74 billion at maximum output in 2024, resulting from additional revenue from the beneficiaries. The baseline financial internal rate of return (FIRR) is estimated at 10.9% with an NPV of CFAF 1,458.32 billion. The IRR was calculated on the basis of the accumulation of additional net revenue from the different actions supported by the project deducted from the project cost and cumulative recurrent charges for the routine maintenance of the structures over the financial flow calculation period. Sensitivity tests based on a 10% reduction in revenue, a 10% increase in costs and a reduction of revenue coupled with an increase in costs reduces the IRR to 9.5%, 9.6% and

8.3% respectively. It should be noted that, on the assumption of a reduction of some items of the RAP cost that do not directly contribute to production, including drinking water supply, servicing and housing facilities which represent CFAF 70 billion, the baseline IRR would be 12.7%. On the other hand, the dam's construction provides irrigation potential of over 45,000 hectares which was not factored into the rate of return calculation, because the development and enhancement support costs as well as the resettlement actions resulting from the project are not financed under this project.

4.1.3 Economic Rate of Return: In order to calculate the economic rate of return, a 90% coefficient was applied to correct factor costs linked to inherent distortions in customs duties. At maximum output (2024) the additional added value induced by the project will be CFAF 80.74 billion from additional revenue from the beneficiaries. This added value will help to improve the country's gross domestic product. The economic rate of return was calculated on the basis of inflows/outflows between additional revenue which is a constituent element of the added value induced by the project and the project's economic costs. The baseline economic rate of return stands at 12.4% for a net present value (NPV) of CFAF 1,529.34 billion. The sensitivity tests conducted based on a 10% reduction in revenue, a 10% increase in costs and a reduction of revenue coupled with an increase in costs gives respective IRRs of 10.9%, 11.1% and 9.6%. The project's actions will improve access to social services, particularly drinking water, electricity, primary health care, decent housing and hygiene, for the affected communities. They will also boost the productivity of agricultural workers and improve the living conditions of the local population. The increased supply of foodstuffs should reduce the foreign exchange cost of imports of rice and certain types of vegetables and improve the country's trade balance. The different types of jobs and additional revenue generated will help to reduce poverty in the project area and establish growth poles and develop the environment thereby reducing the rural-urban migration of agricultural workers which is one of the causes of poverty in the project area.

4.2 Environmental and Social Impact

4.2.1 The Kandadji Programme is classified in environmental and social category 1 in accordance with the Bank's environmental procedures because of the major environmental and social impacts it could create, including population displacement. An Environmental and Social Impact Assessment (ESIA) and a Resettlement Action Plan (RAP) were prepared in 2006 in accordance with the regulatory requirements of Niger and the Bank's Environmental and Social Assessment Procedures. The 2006 ESIA/ESMP were updated in 2012 to strengthen some of the mitigation measures and add others stemming from complementary studies. The 2012 ESMP was updated in 2016 to include the recommendations of the environmental audit conducted in 2013 and the February 2014 Midterm Review and to increase its operability by separating the construction phase measures from those of the operational phase.

4.2.2 In order to meet the environmental and social requirements of Niger and the Bank during the preparation phase: (i) the issues of non-compliance observed during the first displacement wave were addressed; and (ii) the Programme's ESIA and ESMP were again updated. The ESIA and RAP2 studies as well as their summaries were published on the Bank's website on 11 January 2019. The process for finalising and validating these studies is presented in Box 2.

Box 2: Process for finalising and validating the Project's environmental and social impact assessments

The environmental and social impact assessments for the Kandadji Programme were prepared during the formulation and implementation of its first phase. The main documents are: the Environmental and Social Impact Assessment (ESIA) and the Resettlement Action Plan (RAP) prepared in 2006 and updating of socioeconomic database in 2010. The 2006 ESIA and ESMP were updated in 2012. The 2012 ESMP was updated in 2016. The assessment of the first phase and findings of the audit on the implementation of the first wave prompted the Bank and the different partners to completely review the design of the current phase. Accordingly, it became necessary to conduct the following studies:

1. **Resettlement Action Plan for people in the second wave:** This study was entrusted to an international consulting firm and was conducted over an almost two-year period (September 2016-October 2018). The study began with identification and an inventory of affected household assets followed by the measurement of agricultural land. The data collected was sent to an online platform which serves as an instrument for the georeferencing database. The study reports were the subject of several reviews by ABK, NBA and Kandadji TFP experts. Several joint TFP missions were fielded during this period to review the different reports and ensure the quality of the study and compliance with applicable operational safeguards. Following the study's preparation, 20 (twenty) public consultations were held from 24 July to 11 August 2018. The final report incorporating the outcomes of the public consultations was prepared and validated by all the partners in November and December 2018. Other complementary studies will be conducted during the project's implementation, namely: (1) the agriculture, forestry, livestock and fisheries (AFLF) study; (2) the study on handicrafts, trades and trading (HTT), (3) detailed development plans for the resettlement sites and environmental and social impact assessments (ESIA) of all socio-community infrastructure. The study costs are included in the total project cost.
2. **Update of the Environmental and Social Impact Assessment (ESIA) and the Environmental and Social Management Plan (ESMP):** The Bank considered it necessary to update these studies in order to take into account the specific measures and sub-projects of the Environmental and Social Management Framework (ESMF) and the Resettlement Action Plan for the first phase of the second population displacement wave (RAP2A) to be financed under Component B. The update was carried out through technical assistance to the contracting authority and was the subject of several reviews by the Bank. The final report was finalized and approved in December 2018.

4.2.3 **Environment:** In the project pre-construction, construction and operational phase, the major negative impacts identified during the updates of the ESIA coupled with the ESMP in 2016 and 2018 relate to (i) changes in aquatic and terrestrial ecosystems following the disruption of the natural flow of surface water, mainly due to dam construction works; (ii) risk of increased water pollution, and (iii) loss of biodiversity due to the flooding of aquatic fauna habitats upstream of the dam. The main positive impacts on the biophysical environment area (i) control of the river flow and improvement of the low-water regime; (ii) reduction of flooding, protection against flooding of towns and villages downstream from the dam; (iii) improvement of water quality; (iv) increase in suitable areas for hippopotamus and manatee habitats upstream of the dam; and (v) conservation of the diversity of fish species. The main environmental mitigation and enhancement measures planned under the project are: (i) the construction of infrastructure for the protected area and the Kandadji hippopotamus sanctuary; (ii) preparation of fishery resources and manatees; (iii) the study on migratory modes and spawning sites existing in the study area; and (iv) the establishment of an environmental monitoring system, especially to monitor the level of pollution of water resources by human activity. Details of the ESMP measures are presented in Annex B8. Its total cost, including the cost of capacity-building (training, information and sensitisation) for the stakeholders involved in the project's environmental and social management is estimated at about CFAF 145 billion.

4.2.4 **Climate Change:** The Kandadji Programme is fundamentally a climate change adaptation and mitigation programme. The objective of regulating the minimum low-water flow rate at 120 m³/s in Niamey is a response to the reduction in the Niger River's flow rates as a result of climate change. Indeed, during certain years and particularly in 1984, the Niger River even stopped flowing in a severe low-water period, creating a negative impact on the lives of the riparian communities and undermining ecosystem resilience. The guarantee of an ecological flow as a result of the Kandadji Programme will build the resilience of the ecosystems and the population of Niger. The dam reservoir will create a significant ecosystem for the riparian communities and foster the development of socioeconomic and ecotourism activities. The projected annual hydropower output of 617 GWH, the reforestation of 7000 hectares, the establishment of 1600 ha of natural forest stands and the pastoral development works over 9500 ha will yield a significant reduction in greenhouse gas emissions and consequently help to combat global warming. Furthermore, the release of greenhouse gases (GHG) as a result of the decomposition of vegetation submerged in the reservoir will be prevented through complete clearing of the dam right-of-way and use of the wood (temporary timber markets to be set up).

4.2.5 **Social:** The Kandadji Programme will also generate major positive and negative social impacts during the construction and operational phases. The main expected positive impacts are the creation of 221,680 jobs, the development of agro-silvo-pastoral activities and fishing, the development of

socioeconomic activities and sustainability of the country's water and electric power supply. The planned development of 45,000 ha of land by 2030 will significantly improve the country's food security. The main negative social impacts are: population displacement; risk of accidents; spread of waterborne diseases and STI/HIV AIDS; loss of agropastoral land; risk of drowning; risk of conflict between local communities and workers, stockbreeders and farmers; risk of loss of cultural heritage; risk of exclusion of vulnerable groups, etc. The main mitigation measures planned are: (i) implementation of the site ESMP for each infrastructure item; (ii) implementation of a disease control programme; (iii) building of the population's conflict management capacities; (iv) implementation of activities to improve the means of livelihood; (v) establishment of an audible warning system (by radio) to manage the release of flood waters; and (vi) construction of the Kandadji museum.

4.2.6 Population Displacement: In order to reduce risks relating to the scale of resettlement of the second wave and the security situation in the affected parts of Mali and considering the conclusions of the completion report, the Government agreed with the TFPs that the dam would be constructed in two respective phases at elevations of 224m and 228 m. Accordingly, RAP2 was organized into two phases, namely: RAP2A on the displacement of affected communities at an elevation of 224 m; and RAP2B on affected communities between elevations 224 m and 228 m. The phased filling of the dam will limit population displacement to Nigerien territory during this first phase and also reduce the number of people to be displaced by 33%. Construction of the dam at an elevation 224m will create a reservoir with a surface area of 152 km² on Niger territory, resulting in the displacement of 5,555 households or 32,991 inhabitants from 17 villages. These people will be resettled on 12 sites and given developed land located close to these sites as compensation for their lost farm lands.

4.2.7 The Resettlement Action Plan was prepared in 2018 in compliance with the regulations of Niger, Operational Safeguard 2 and the Bank's policies applicable to the project. It was validated by the affected and host communities following many consultation sessions. RAP2A defines the principles and modalities of the resettlement, compensation and indemnification of affected people. It provides for the reconstruction of community infrastructure to national standards and also proposes programmes to improve the means of livelihood relating to agriculture, stockbreeding and pastoral farming, forestry, fishing, the development of commercial activities and other income-generating activities. Transition support measures were incorporated into RAP2A. In view of the precarious security context of the project area, an alert protocol was prepared with a series of actions identified and budgeted in RAP2A. Furthermore, the Government of Niger has established a security system in the project area in to ensure civil security.

4.2.8 In order to ensure effective RAP2 implementation, the Kandadji Dam Agency (ABK) will recruit an international consulting firm to supervise RAP2 implementation. The estimated implementation costs of RAP2A are CFAF 249 billion, to be financed by the Government of Niger and a number of technical and financial partners (TFP) including the Bank which will provide a contribution of CFAF 35 billion.

4.2.9 Gender: Niger is ranked 157th out of 189 countries according to the 2016 Human Development Report's gender inequality index. This low ranking is due to significant gender discrimination and inequalities in the country. Niger is experiencing significant population growth due to a high fertility rate (an average of six children per woman), which in turn results from a high early-marriage rate (76.3% of under-18 girls marry before reaching the age of 18 years), limited use of contraceptives (12 %) and the fairly low school enrolment ratio for girls. Furthermore, consumption in women-headed households is 45% lower than in male-headed households and 71.2% of women household heads are uneducated compared to 49.55% of male household heads. The socioeconomic conditions of the project area population and those of women in particular are lower overall than the national average. Thus, infant and child mortality remains higher than the national average in the regions of Tillabéry (41%). In the study area, the net female enrolment rate (44%) is lower than the male enrolment rate (45%) for all

school cycles. The main economic activities for women are agriculture (83.2%), stockbreeding (45%), income-generating activities (45.4%), petty trading (44.7%) and handicrafts (24.4%). It was noted that men have greater access than women to the different production resources.

4.2.11 The resettlement process could widen the gender gap. Indeed, only family heads (men and women) receive compensation. By way of mitigation, the project will ensure that measures pertaining to individual compensation for women and the monitoring of households to ensure recovery of their assets are included in the project specifications drafted for opinion leaders (village chiefs, Imams), land commissions (COFO) and irrigated area management cooperatives. The project also provides for the inclusion of women in the structures that allocate irrigated areas. This approach should help to strengthen women's position in the decision-making process within communities.

4.2.12 The project is classified in Category 3 in accordance with the Bank's gender categorisation system. The project will play a strategic role in the development of inclusive growth and women's advancement in the area of intervention. Women will benefit from an integrated services package focused on: (i) the development of alternative means of livelihood based on their organization into groupings with adapted entrepreneurial, technical and social training; (ii) the establishment of irrigated areas for women and assurance of access to and land tenure security for the irrigated areas (30% of the land will be allocated to them in the reclaimed irrigation areas); (iii) access to equipment and technologies that will reduce their working hours and increase their productivity (establishment of an innovation platform, access to agricultural inputs, mobile phones, fishery and agricultural product conservation and processing units, improved stoves, multifunctional platforms, etc.) in collaboration with UN-WOMEN. Through its value chain approach, the project will contribute to the development of production systems, conditions for the supply of agricultural inputs, marketing and financing of food crops supplied to Niamey and export sub-sectors for women's groupings. Girls will receive specific guidance from UNFPA. Awareness-raising on family planning will be systematically conducted in all training courses under the Project, given the significant impact of population growth in Niger.

4.2.13 Furthermore, the project will ensure the supervision, implementation and monitoring of women's empowerment activities by the Ministry of Women's Advancement and Protection, the Ministry of Population and the Ministry of Agriculture with technical assistance from UN-WOMEN. Memoranda of Understanding and Collaboration Agreements will be signed with UN-Women and UNFPA to support ABK in improving gender mainstreaming in the project's implementation. The project will also ensure women's representation in structures supported or established by the project such as COFOB and irrigation area management cooperatives (at least 30% women). The estimated budget for specific gender activities is about CFAF 2 billion.

V IMPLEMENTATION

5.1 Implementation Arrangements

5.1.1 **Implementation Modalities:** During the Programme's first phase, the project was implemented by HCAVN. In order to enhance the efficiency of the Kandadji Programme, a Kandadji Dam Agency (ABK) was established with EPIC status (Decree No. 2016-054/PRN of 26 January 2016) to replace HCAVN but remained under the oversight of the Presidency of the Republic. The ABK, the programme's Executing Agency, has legal personality as well as administrative and financial independence. An organization chart was prepared with a description of the responsibilities of the different posts. Management staff as well as 15 experts have already been recruited. The Bank's support will be used to complete the recruitment of key personnel, including: (i) a procurement expert; (ii) a gender expert; (iii) a resettlement expert; (iv) an environmentalist; (v) an ecosystem monitoring specialist; (vi) a monitoring and evaluation expert; and (vii) an accountant. ABK's Board of Directors will steer the project. It will be supported by the already established Regional Technical Consultation Committee (RTCC). ABK's organisation chart and its steering bodies are set out in Annex C1.

5.1.2 **Procurement:** The procurement of works, goods (including services other than consulting services), and the acquisition of consulting services, financed by the Bank under the Project will be carried out in accordance with the Bank Group Procurement Framework for Bank-financed Operations, October 2015 edition. More specifically, procurements will be made in accordance with: (i) **the Borrower's Procurement System (BPS):** Procurement methods and procedures (PMP) under Niger's procurement system are governed by Act No. 2011/037 of 28 October 2011 on the general principles, control and regulation of public procurement and public service delegations, Decree No. 2016-641/PRN/PM of 1 December 2016 establishing the Public Procurement Code and Public Service Delegations and various implementing texts. The BPS will use National Standard Bidding Documents (NSBD) or other bidding documents such as those approved during project negotiations for contracts pertaining to routine, low-cost and non-complex works and services scheduled under the project and generally available in Niger; (ii) **the Bank's Procurement Methods and Procedures (PMP),** using the relevant standard bidding documents (SBD) for larger-scale and more complex works and goods contracts as well as for consulting services considered to be the most suitable.

5.1.3 **Procurement Risk and Capacity Assessment (PRCA):** An assessment of procurement risks at country, sector and project level as well as of the Executing Agency's (AE) procurement capacity was carried out³ and the results were used to guide decision-making on the choice of procurement system (Borrower or Bank) used under the project. The appropriate risk mitigation measures were included in the PERCA Action Plan mentioned in Section B5.9 of Annex B5.

5.1.4 **Advance Procurement Action (APA):** The Government obtained the Bank's agreement to use the APA procedure for the procurement of civil works for the dam's Lot 1A (elevation 224). This procurement process has been completed, the contract has been awarded and works have started. An agreement was reached with Niger on retroactive funding to cover some of the expenses incurred under this contract within the six-month preceding signature of the funding agreements.

5.1.5 **Disbursements:** Under the project, the resources from the ADF loan and grant as well as the TSF loan will be disbursed in accordance with the following three (3) methods: (i) direct payment; (ii) revolving fund or special account; and (iii) the reimbursement method. The **direct payment method** will be used for the settlement of contracts and agreements relating to works, goods and services expenditure categories. **The special account or revolving fund method** will be chiefly used for operating expenditure. For that purpose, the project will open a special account in CFAF with a commercial bank considered acceptable by the Bank. As regards the national counterpart funds, the project will open an account in CFAF at the National Treasury. A special ADF grant sub-account will be opened at Tillabéry to facilitate implementation of the activities in the field. The **reimbursement method** will be used, following the Bank's prior approval, to reimburse expenditure eligible to Bank funding and that has already been executed and paid for by the Borrower with own resources. The disbursement letter will provide further details on the project disbursement modalities.

5.1.6 **Financial Management:** The project's fiduciary management will be the responsibility of ABK which has been designated as the executing agency. Having transitioned from its former status as a legal entity to a new one, the organisation engaged in restructuring to improve its operations including in the area of financial management. However, some of the actions that ABK undertook in this respect are still to be completed or improved to enhance presentation of the accounting for resources allocated to the Project. In this respect, the organisation must, inter alia, complete the recruitment or appointment of the Financial and Accounting Personnel as well as the Internal Auditor; improve the recently prepared Administrative, Financial and Accounting Procedures Manual; and upgrade the existing accounting software. The assessment shows that the fiduciary risk is considered to be substantial given that the ABK has not always had adequate financial management capacity to reasonably provide accurate, complete

³ For further details consult the Technical Annexes.

and timely information on project progress and, consequently, to meet the Bank’s minimum requirements in that area. However, mitigation measures were proposed to reduce the risk level and ensure that the project meets the stipulated requirements and standards to ensure its smooth implementation (see Technical Annexes B4 and B5 of the Report for further details).

5.1.7 **Audits:** The project’s financial statements will be audited annually by an independent audit firm acceptable to the Bank and in accordance with terms of reference considered acceptable by the Bank. The audit report accompanied by a management letter shall be submitted to the Bank no later than six months after the end of the fiscal year. The audit’s cost will be covered by the project.

5.2 Monitoring

5.2.1 Internal monitoring will be carried out by the monitoring and evaluation officer under the supervision of ABK’s Directorate-General. An impact-focused monitoring and evaluation system will be established that includes a database and objectively verifiable indicators. The ABK has received veritable technical assistance in supervising the dam’s civil engineering works and other technical assistance in monitoring all project components. External monitoring will be awarded to an independent consultant to be recruited. Status reports will be prepared at the end of each quarter and submitted to the Bank. A specific note on RAP2A implementation will be prepared by the international consultant and annexed to the quarterly report.

5.2.2 The Bank will organise more frequent supervision missions with appropriate expertise. The recent opening of the Bank’s Country Office in Niamey should help to improve project implementation monitoring. In addition, a senior engineer will be responsible for the project’s full-time monitoring and will be assisted in his/her duties by a multidisciplinary team. Local dialogue will be initiated under the supervision of the country manager in Niger. The project will be implemented over a six (6) year period. The summarised project implementation schedule is presented in Table 2.7 below:

Table 2.8: Indicative Implementation and Supervision Schedule

No.	ACTIVITIES	RESPONSIBLE ENTITIES	START	DURATION
1.	Signature of Grant and Loan Agreements	Government/ADF	June 2019	
2.	Authorisation for first disbursement from ADF Funds	Government/ADF	July 2019	3 months
3.	Preparation of First Annual Budget	ABK	September 2019	1 months
4.	Establishment and Approval of different BDs	ABK/AfDB	August 2019	3 months
5.	Project Launching Workshop	Gvt/ABK/FAD/TFPs	October 2019	4 d
6.	Implementation of Dam Works	Firm/Consultants/ABK	April 2019	5 years
7.	Implementation of ESMP and RAP2	Operator/ABK	January 2019	6 years
8.	Midterm Review	Gvt/ADF/Partners	January 2022	3 months
9.	Completion of Activities	ABK/Firms	May 2025	
10.	ADF and Partners’ Completion Report	ADF/Partners	December 2025	2 months
11.	Audits	Firm/Gvt/ADF/TFPs	Annual	1 month

5.3 Governance

5.3.1 The project is in keeping with the Economic and Social Development Plan based on the Sustainable Development and Inclusive Growth Strategy up to 2035. Accordingly, the country will continue to consolidate its democratic institutions and promote good governance. The project will contribute to the regulation of the waters of the Niger River and complies with the principles of a shared vision for good governance and management of the water resources of the Niger River Basin. According to the Ibrahim

Index of African Governance, in 2016 Niger was ranked 33rd/54 countries. The national procurement system is considered to be largely compliant with international standards. However, administrative governance is still ineffective and there are persisting security threats around the project area. Measures are planned to secure the civil works site and to that end a Kandadji Dam Agency has been established to implement the project. In order to address the limited capacity of the administration, the agency will be staffed with qualified personnel and reinforced by technical assistants and project managers with cutting-edge expertise in all project components.

5.4 Sustainability

5.4.1 With stronger capacity, the ABK will monitor and supervise the project. It will be provided with close support from technical assistance experts during the project's implementation and will be well prepared to subsequently provide assistance to the beneficiaries to develop the different infrastructure items. Such an approach will foster stakeholder accountability in carrying out infrastructure management and maintenance. In this context, capacity-building through technical and managerial training, beneficiary supervision and the structuring of organisations will be implemented under the project.

5.4.2 The project will propose more formal procedures for the transfer of infrastructure (tariffing, role and responsibility of stakeholders) in consultation with the municipalities and public services concerned. The ongoing study on the management structure of the dam and power plant will lead to the selection and establishment of a management structure for the hydropower plant and help the contracting authority to conclude a power purchase agreement between the future operator of the plant and NIGELEC. Under its sub-component B1, the project will establish a major component on SWC/SPR activities to protect the dam's watershed. These activities will help reduce erosion in the watershed and, consequently, sediment transportation in the dam's reservoir. The sedimentation rate will, therefore, be reduced, thus improving the sustainability of the facilities and increasing the availability of useful water in the dam.

5.4.3 Sustainability of the interventions will be guaranteed through the effective involvement of the private sector and civil society in implementing the activities. Private developers will therefore be encouraged to provide agricultural services to small producers, including the processing of products, supply of inputs on credit, the marketing of paddy rice, etc. A growth pole will be established in the area to improve the development of agricultural potential.

5.4.4 ONAHA will provide upkeep and maintenance services for agricultural infrastructure in the large irrigated areas to be developed along the Niger River. It should be mentioned that there is already an adequate institutional framework based on local committees and Departmental services to carry out minor repairs. Maintenance committees have also been established on already completed compensatory irrigation areas and will be established on new compensatory and reclaimed irrigation areas. Moreover, monitoring and assistance agreements will be signed between the project, local communities and maintenance committees. Capacity-building for professional groups in general and more especially the different training sessions to be carried out by UN Women and UNFPA for women and young people in the areas of management and organisation will help to ensure the sustainability of project equipment and infrastructure.

5.5 Risk Management

5.5.1 The main risks and attendant mitigation measures were identified as follows:

Risks	Mitigation Measures
Insecurity around the Kandadji area	Implementation of a security action plan
Weak capacity of dam works contractor	Careful selection of the contractor and effective involvement of contracting authority in updating IBDs and bid opening
Delay in the process for the displacement of communities affected by the dam which could create a considerable time-lag between the two dam reservoir management stages (elevations 224 m and 228 m)	Recruitment of an international operator to manage resettlement; the financing by TFPs of dwellings, community infrastructure and servicing of resettlement sites
Poor TFP coordination	Coordination measures already taken, namely: (a) the designation of four leaders for the activity sectors; (b) the establishment of groups of experts for the four lots of works planned under the Kandadji Programme; and (c) organisation of monthly meetings by videoconferencing between the TFPs and the fielding of annual joint supervision missions.
Weak capacity of Executing Agency	Establishment of an agency in EPIC form and the full-time deployment of international and multidisciplinary technical assistance to assist the contracting authority
Weak mobilisation of counterpart funds	The government has pledged to allocate the draft budget indicated in the Financing Plan to the project annually. For 2019, a budget of CFA.F 6.63 billion was allocated to the project

5.5.2 In light of the precarious security situation in the project area, a security action plan was prepared. It covers several dimensions from the security of dam works to the establishment of a plan for early warning and overall security of the area (see Box 3).

Box 3: Security Action Plan
<p>The security action plan prepared covers three dimensions:</p> <ul style="list-style-type: none"> - Overall security of the Project Area: In addition to the military bases (camps) scattered throughout the area, defence and security forces will be stationed on the dam site and in the surrounding villages. Thus, permanent military patrols will be organised throughout the process: dam civil works, construction of dwellings, population resettlement, etc.... These security arrangements may be adapted and strengthened depending on human concentrations and the intensity of works. - Security of dam works site: A complete security plan was included in the contractor's specifications. The organisation of these arrangements is dependent on: (i) the recruitment of a safety coordination provider, a company specialised in the protection of sites and people in hostile environments; (ii) the recruitment of a security guard service, a company specialised in guarding sites and the installation of at least 70 security personnel; and (iii) construction of combat and surveillance outposts. - Warning Protocol: This measure addresses the concerns of displaced persons pertaining to the insecurity felt in the villages, particularly by the inhabitants of the islands and villages divided by the phasing process. This protocol, which is already operational, ensures the provision of information from both left bank and right bank villages. Thus, any activity or event that might cause unrest is communicated to the first-tier customary authority: the village chief. This information is relayed to the following levels depending on its relevance: Canton/Municipality head, Prefect and/or Prefecture Secretary-General and finally to the Governor.

5.6 Knowledge Building

5.6.1 The project will build the capacities of various stakeholders (professional producer groups, artisanal workers, youth and women, small and medium-sized enterprises and industries). The dam's construction and RAP2 will provide work training for young professionals and technical employees. ABK personnel will benefit from the transfer of skills from the project supervisors and technical assistants. Good practices in the areas of water resource management, irrigation, meteorological early warning systems, hydrological and climatic models, multipurpose dam management, database management, protected areas, population resettlement, inclusive women's empowerment, reproductive health and environmental and social safeguards will be capitalised upon and disseminated.

VI. LEGAL FRAMEWORK

6.1. Legal Instrument

The project will be financed by: (i) a UA 46.52 million ADF Loan Agreement; (ii) an UA million 10.00 TSF Loan Agreement; and (iii) a UA 35.48 million grant agreement, concluded between the Republic of Niger and the Fund.

6.2. Conditions Associated with the Fund's Intervention.

6.2.1. Conditions precedent to loan and grant effectiveness: Effectiveness of the loan agreements will be subject to fulfilment by the Borrower of the conditions stipulated in Section 12.01 of the General Conditions applicable to Loan Agreements and Guarantee Agreements of the African Development Fund. The Grant Agreement shall be effective on the date of its signature by the parties.

6.2.2. Conditions precedent to first loan and grant disbursements: In addition to effectiveness of the loan and grant agreements, the Fund's obligation to disburse loan and grant resources shall be subject to evidence of the fulfilment of the following conditions by the Borrower to the Fund's satisfaction both in form and substance:

- (a) Provide evidence that the Borrowers 2019 counterpart funds, amounting to CFAF 6,632,343,208 (six billion six hundred and thirty-two million three hundred and forty-three thousand two hundred and eight), has been included in the 2019 Finance Law;
- (b) Provide evidence of the opening of an account in the project's name at the National Treasury;
- (c) Provide evidence of revision of the project's administrative, financial and accounting procedures manual in accordance with the recommendations of the Fund;
- (d) Provide evidence of: (i) the appointment of a Finance and Accounting Service head at ABK; and (ii) the recruitment within the ABK of a project accountant and procurement expert whose respective qualifications and experiences are deemed acceptable by the Fund; and
- (e) Provide evidence of the procurement of a server for ABK's integrated software.

6.2.3. Conditions precedent to resettlement related works: The Fund's obligation to disburse loan/grant resources for works entailing resettlement shall be subject to the fulfilment by the Borrower to the Fund's satisfaction of the following additional conditions:

- (a) Submit a works and compensation schedule prepared in compliance with the Resettlement Plan and the Fund's Safeguard Policies, that is satisfactory in both form and substance to the Fund and provides details on: (i) each project works area; and (ii) the timeframe for compensation and/or resettlement of all project-affected people (PAP) for each area;
- (b) Provide satisfactory evidence that all PAPs in the works area have been: (i) compensated and/or resettled; and/or compensated for the loss of crops or loss of access to the resources on their land in accordance with the ESMP, the Resettlement Action Plan, the agreed works and compensation schedule and the Fund's Safeguard Policies prior to works commencement. In any event, this should be done: (i) three (3) months prior to commissioning of the dam; and/or (ii) prior to displacement of PAPs; and/or (iii) prior to

expropriation of the land belonging to PAPs; and/or (iv) prior to expropriation of the related assets of PAPs;

- (c) In lieu and place of paragraphs (a) and (b) above, provide satisfactory evidence indicating that the resources allocated for compensation and/or resettlement of PAPs have been deposited in a dedicated bank acceptable to the Fund, when the Borrower can prove to the Fund's satisfaction, that the compensation and/or resettlement of PAP pursuant to paragraphs (a) and (b) above could not be fully or partly carried out for the following reasons: (i) identification of PAPs by the Borrower is neither feasible nor possible; (ii) there is ongoing litigation involving the PAPs and/or affecting the compensation and/or resettlement exercise; or (iii) any other reason beyond the control of the Borrower, as discussed and agreed with the Fund.

6.2.4 Institutional Arrangements: The Borrower shall:

- (a) provide the Fund, no later than six months after the first disbursement of loan and grant resources with evidence of the recruitment within ABK of the following experts whose qualifications and experience will have been deemed satisfactory by the Fund: (i) gender expert; (ii) resettlement expert; (iii) environmentalist; (iv) ecosystem monitoring specialist; and (v) monitoring-evaluation expert.
- (b) provide the Fund, no later than six months after the first disbursement of loan and grant resources with the order setting up the Regional Consultative Technical Committee (CTRC).

6.2.5 Other Undertakings. The Borrower shall undertake to:

- (a) provide the Fund, within eighteen (18) months following first disbursement of loan/grant resources, with evidence of the conduct of the complementary studies listed in Annex B8;
- (b) provide the Fund, no later than one (1) year after first disbursement of loan/grant resources, with a copy of the agreements signed between the Borrower and the various technical institutions and services mentioned in Annex B3;
- (c) implement the project in compliance with the ESMP, RAP2A and/or the works and compensation schedule, the Fund's Safeguard Policies and applicable national legislation in a manner satisfactory to the Fund in form and substance;
- (d) prepare and submit to the Fund each quarter or no later than one month after the end of the said quarter, a specific report on implementation of the ESMP and RAP2A;
- (e) refrain from any action that could prevent or hinder implementation of the ESMP and RAP2A including any modification, suspension, waiving and/or cancellation of any provision of the ESMP or RAP2A, in whole or in part, without the Fund's prior written agreement; and
- (f) provide, before 31 January of each year, evidence of the inclusion of the Borrower's counterpart funds into the Finance Law of the year concerned.

6.3. Compliance with Bank Policies

The project complies with all applicable Bank policies, in particular its environmental and social policies in compliance with its strategic priorities.

VII. RECOMMENDATION

7.1. Management recommends that the ADF Board of Directors approve the proposed financing, namely:

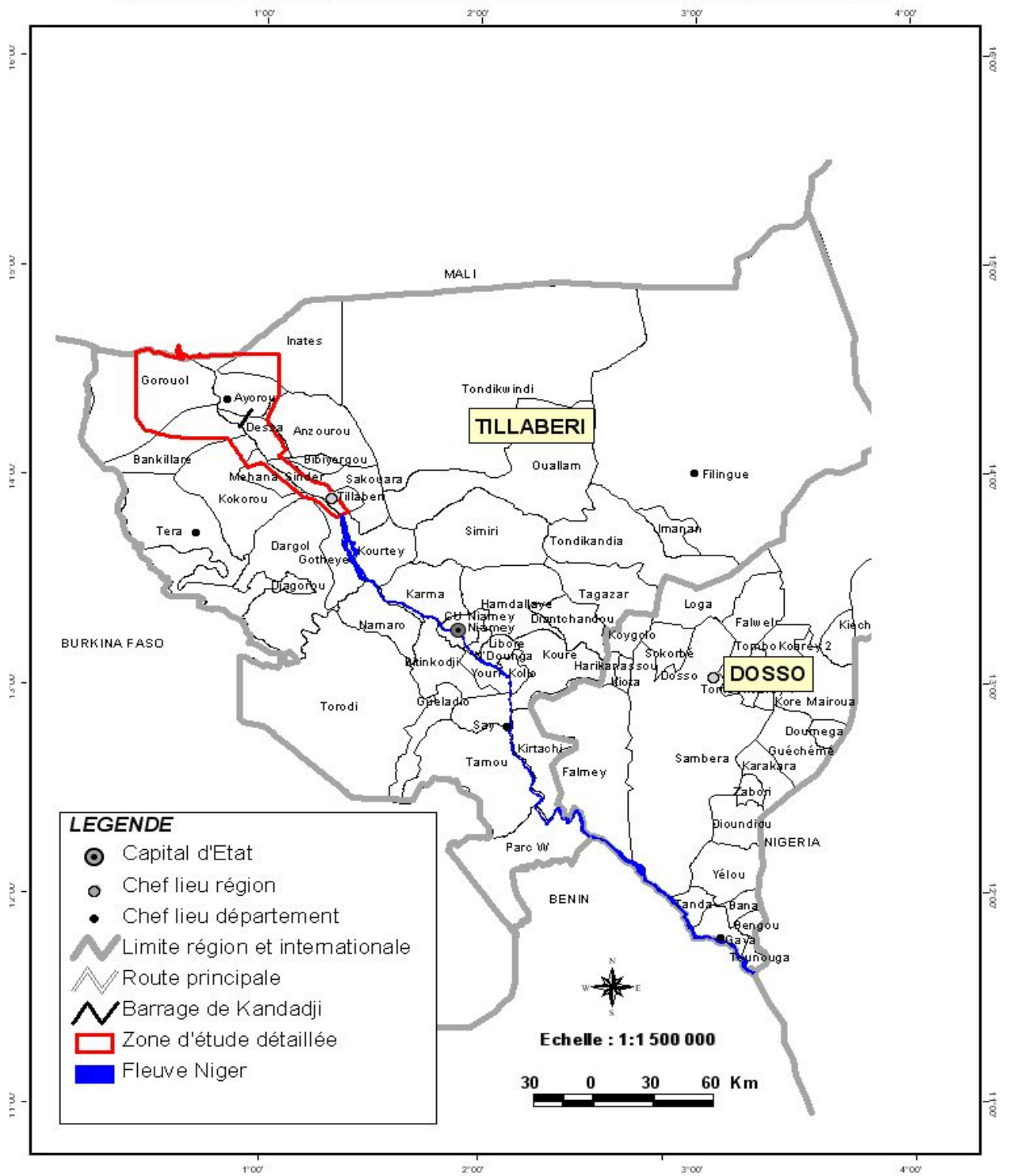
- an ADF loan of UA 46.52 million;
- a TSF loan of UA 10 million; and
- an ADF grant of UA 35.48 million to finance the Kandadji Ecosystems Regeneration and Niger Valley Development Programme Support Project (PA_KRESMIN), subject to the conditions stipulated in this report.

Appendix I: Map of Programme Area

REPUBLIQUE DU NIGER

PROGRAMME KANDADJI DE REGENERATION DES ECOSYSTEMES ET DE MISE EN VALEUR DE LA VALLEE DU NIGER

CARTE DE LA ZONE D'INTERVENTION DU PROGRAMME

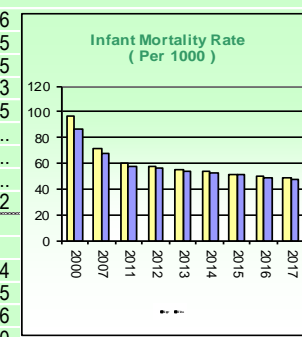
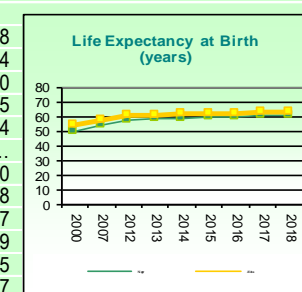
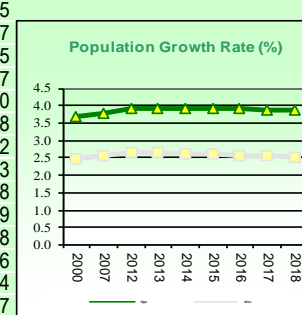
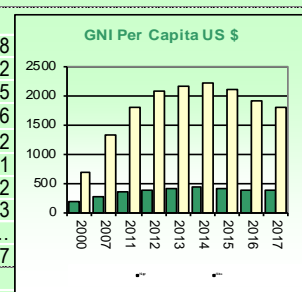


Appendix II. Comparative Socioeconomic Indicators of Niger

Niger

COMPARATIVE SOCIO-ECONOMIC INDICATORS

	Year	Niger	Africa	Developing Countries	Developed Countries
Basic Indicators					
Area ('000 Km ²)	2018	1,267	30,067	92,017	40,008
Total Population (millions)	2018	22.3	1,286.2	6,432.7	1,197.2
Urban Population (% of Total)	2018	16.4	42.5	50.4	81.5
Population Density (per Km ²)	2018	17.7	43.8	71.9	31.6
GNI per Capita (US \$)	2017	360	1 767	4 456	40 142
Labor Force Participation *- Total (%)	2018	64.6	65.9	62.1	60.1
Labor Force Participation **- Female (%)	2018	40.4	55.5	47.6	52.2
Sex Ratio (per 100 female)	2018	100.7	99.8	102.3	99.3
Human Develop. Index (Rank among 189 countries)	2017	189
Popul. Living Below \$ 1.90 a Day (% of Population)	2007-2017	44.5	...	11.9	0.7
Demographic Indicators					
Population Growth Rate - Total (%)	2018	3.9	2.5	1.2	0.5
Population Growth Rate - Urban (%)	2018	4.4	3.6	2.3	0.7
Population < 15 years (%)	2018	50.1	40.6	27.5	16.5
Population 15-24 years (%)	2018	18.8	19.2	16.3	11.7
Population >= 65 years (%)	2018	2.6	3.5	7.2	18.0
Dependency Ratio (%)	2018	113.7	79.2	53.2	52.8
Female Population 15-49 years (% of total population)	2018	21.0	24.1	25.4	22.2
Life Expectancy at Birth - Total (years)	2018	60.8	63.1	67.1	81.3
Life Expectancy at Birth - Female (years)	2018	61.9	64.9	69.2	83.8
Crude Birth Rate (per 1,000)	2018	47.5	33.4	26.4	10.9
Crude Death Rate (per 1,000)	2018	9.3	8.3	7.7	8.8
Infant Mortality Rate (per 1,000)	2017	48.3	47.7	32.0	4.6
Child Mortality Rate (per 1,000)	2017	84.5	68.6	42.8	5.4
Total Fertility Rate (per woman)	2018	7.1	4.4	3.5	1.7
Maternal Mortality Rate (per 100,000)	2015	553.0	444.1	237.0	10.0
Women Using Contraception (%)	2018	16.6	38.3	61.8	...
Health & Nutrition Indicators					
Physicians (per 100,000 people)	2010-2016	1.9	33.6	117.8	300.8
Nurses and midwives (per 100,000 people)	2010-2016	13.7	123.3	232.6	868.4
Births attended by Trained Health Personnel (%)	2010-2017	39.7	61.7	78.3	99.0
Access to Safe Water (% of Population)	2015	58.2	71.6	89.4	99.5
Access to Sanitation (% of Population)	2015	10.9	39.4	61.5	99.4
Percent of Adults (aged 15-49) Living with HIV/AIDS	2017	0.3	3.4	1.1	...
Incidence of Tuberculosis (per 100,000)	2016	93.0	221.7	163.0	12.0
Child Immunization Against Tuberculosis (%)	2017	91.0	82.1	84.9	95.8
Child Immunization Against Measles (%)	2017	78.0	74.4	84.0	93.7
Underweight Children (% of children under 5 years)	2010-2016	31.7	17.5	15.0	0.9
Prevalence of stunting	2010-2016	42.2	34.0	24.6	2.5
Prevalence of undernourishment (% of pop.)	2016	14.4	18.5	12.4	2.7
Public Expenditure on Health (as % of GDP)	2014	3.2	2.6	3.0	7.7
Education Indicators					
Gross Enrolment Ratio (%)					
Primary School - Total	2010-2017	75.1	99.5	102.8	102.6
Primary School - Female	2010-2017	69.9	97.4	102.0	102.5
Secondary School - Total	2010-2017	24.6	51.9	59.5	108.5
Secondary School - Female	2010-2017	20.8	49.5	57.9	108.3
Primary School Female Teaching Staff (% of Total)	2010-2017	51.0	48.7	53.0	81.5
Adult literacy Rate - Total (%)	2010-2017	30.6	65.5	73.1	...
Adult literacy Rate - Male (%)	2010-2017	39.1	77.0	79.1	...
Adult literacy Rate - Female (%)	2010-2017	22.6	62.6	67.2	...
Percentage of GDP Spent on Education	2010-2015	6.0	4.9	4.1	5.2
Environmental Indicators					
Land Use (Arable Land as % of Total Land Area)	2016	13.3	8.0	11.3	10.4
Agricultural Land (as % of land area)	2016	36.1	38.2	37.8	36.5
Forest (As % of Land Area)	2016	0.9	22.0	32.6	27.6
Per Capita CO2 Emissions (metric tons)	2014	0.1	1.1	3.5	11.0



Sources : AfDB Statistics Department Databases; World Bank: World Development Indicators;

last update : February 2019

UNAIDS; UNSD; WHO, UNICEF, UNDP; Country Reports.

Note : n.a. : Not Applicable ; ... : Data Not Available. * Labor force participation rate, total (% of total population ages 15+)

** Labor force participation rate, female (% of female population ages 15+)

VIII. Appendix III: Niger – Bank Group’s Ongoing Operations in Niger as at 31 January 2019

No.	Financial Operations	Status	Financing Instrument	Approval	Last Disbursement	Age (year)	Amount (UA)	Total Disbursed in 2019 (UA)	% Disbursement January 2019	
National Public Projects										
1	Agriculture	Maradi, Zinder and Thaoua Water Mobilisation Project	Active	2100150025493	20/09/2011	30/09/2019	7.38	9.34	6.72	72.00
		Maradi, Zinder and Thaoua Water Mobilisation Project	Active	5570155000051	20/09/2011	30/09/2019		23.28	19.59	82.89
2		Climate Information Development and Forecasting Project	Active	5565130000051	24/09/2012	31/12/2019	6.37	6.73	3.88	57.04
		Climate Information Development and Forecasting Project	Active	5565155000301	24/09/2012	31/12/2019		2.48	1.11	44.14
3		Water Resources Mobilization and Development Project (PROMAVARE)	Active	5565130000052	25/09/2012	31/12/2018	6.37	8.86	4.93	55.04
		Water Resources Mobilization and Development Project (PROMAVARE)	Active	5565155000302	25/09/2012	31/12/2018		6.73	4.27	62.82
1	Energy	Rural, Peri-Urban and Urban Electrification Project (PEPERN)	Active	2100150036843	09/12/2016	31/12/2021	2.16	15.07	0	0
		Rural, Peri-Urban and Urban Electrification Project (PEPERN)	Active	2100155034017	09/12/2016	31/12/2021		29.25	0.099	0.34
		Rural, Peri-Urban and Urban Electrification Project (PEPERN)	Active	2200160002039	09/12/2016	31/12/2021		7.40	0	0
1	Governance	Domestic Resource Mobilisation Support	Active	2100150026102	26/01/2012	30/06/2019	7.03	10	8.9	89.02
2		Support for Resource Mobilisation and Implementation of the 2017-2021 ESDP	APVD	5900155013451	27/03/2018	31/08/2019	0.86	1.00	0.26	26.57
3		Economic Reform Support Programme	APVD	2100150040494	27/11/2018	30/12/2019	0.19	10	0	0
	Economic Reform Support Programme	APVD	5900155014601	27/11/2018	30/12/2019	10		0	0	
1	Social	Vocational and Technical Education Development Support Project	Active	2100150023461	15/12/2012	31/07/2019	8.15	7.87	7.71	97.92
		Vocational and Technical Education Development Support Project	Active	2100155019273	15/12/2012	31/07/2019		17.63	14.52	82.39
Multinational Public Projects										
1	Agriculture	Programme to build resilience to food and nutrition insecurity in the Sahel	Active	2100150032045	15/10/2014	30/06/2020	4.31	14.48	2.67	18.46
1	Environment	The Global Environment Facility	Active	5550155001453	18/07/2018	31/12/2024	0.55	2.35	0	0
1	Water	Preliminary Studies on Niger Basin PIDACC	Active	5600155003601	19/12/2013	30/06/2019	5.13	0.96	0.72	74.75
1	Energy	Nigeria-Niger-Benin-Burkina Faso Power Interconnection Project.	APVD	2100150038698	15/12/2017	31/12/2022	1.14	26.00	0	0
		Nigeria-Niger-Benin-Burkina Faso Power Interconnection Project.	APVD	5900150001801	15/12/2017	31/12/2022		27.5	0	0
1	NICT	Trans-Sahara Optic Fibre Backbone Project (TSB)	Active	2100150037243	09.12.2016	30.06.2021	2.16	19.38	0	0
1	Transport	Trans-Sahara Highway (TSH) Project - NIGER	Active	2100150030845	11/12/2013	31/12/2019	5.16	58.98	15.40	26.12
Total Public Projects							315.06			
Private Sector Projects										
1	Finance	SONIBANK Société Nigérienne de Banque	Active	2000130010430	16/01/2013	08/07/2021	2.68	10.73	10.73	100
		SONIBANK Société Nigérienne de Banque	Active	5060140000065	04/11/2015	08/07/2021	3.26	5.68	0	0
Total Private and Public Sector Projects							331.44			