



AFRICAN DEVELOPMENT BANK GROUP

PROJECT : Water Mobilisation Project to Enhance Food Security in Maradi, Tahoua and Zinder Regions (PMERSA-MTZ)

COUNTRY : Republic of Niger

APPRAISAL REPORT*June 2011*

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TABLE OF CONTENTS

	<u>Page</u>
Equivalents, Fiscal Year, Weights and Measures, Acronyms and Abbreviations, Project Information Sheet, Executive Summary, Project Matrix, Project Implementation Schedule.....	i -viii

I STRATEGIC THRUST AND RATIONALE 1

1.1 Project Linkages with Country Strategy and Objectives and to GAFSP Criteria.....	1
1.2 Rationale for Bank's Involvement.....	1
1.3 Aid Coordination.....	2

II PROJECT DESCRIPTION..... 3

2.1 Project Components.....	3
2.2 Technical Solutions Adopted and Alternatives Explored.....	4
2.3 Project Type.....	4
2.4 Project Cost and Financing Arrangements.....	4
2.5 Project Target Area and Beneficiaries.....	5
2.6 Participatory Approach for Project Identification, Design and Implementation.....	6
2.7 Bank Group Experience and Lessons Reflected in Reflected in Project Design.....	6
2.8. Key Performance Indicators.....	7

III PROJECT FEASIBILITY 7

3.1 Economic and Financial Performance.....	7
3.2. Environmental and Social Impact.....	8

IV IMPLEMENTATION.....10

4.1 Implementation Arrangements.....	10
4.2 Monitoring/Evaluation.....	11
4.3 Governance.....	12
4.4 Sustainability.....	13
4.5 Risk Management.....	14
4.6 Knowledge Building.....	14

V LEGAL FRAMEWORK15

5.1 Legal Instrument.....	15
5.2 Conditions Associated with Bank's Intervention.....	15
5.3 Compliance with Bank Policies and GAFSP Criteria.....	15

VI RECOMMENDATION15

ANNEX I:	Comparative Socio-economic Indicators of Niger
ANNEX II:	Ongoing Bank Group Operations in Niger
ANNEX III:	Major Projects Financed by the Bank and Other Development Partners
ANNEX IV:	Map of the Project Area

Currency Equivalents

(April 2011)

UA 1 = CFAF 745.882 = USD 1.5699

USD 1 = CFAF 461.714

Fiscal Year

1 January – 31 December

Weights and Measures

1 kilogramme (kg)	=	2.2 pounds
1 metre (m)	=	3.28 feet
1 millimetre (mm)	=	0.03937 inch
1 kilometre (km)	=	0.62 mile

Acronyms and abbreviations

ACMAD	African Centre of Meteorological Applications for Development
AGRHYMET	Centre Régional de Formation et d'Application en Agro météorologie et Hydrologie Opérationnelle (<i>Regional Centre for Training and Application in Agrometeorology and Operational Hydrology</i>)
CAADP	Comprehensive Africa Agriculture Development Programme
CIP-SDR	RDS Interministerial Steering Committee
CNEDD	National Council for the Environment and Sustainable Development
COFO	Land Commission
COFOB	Grassroots Land Commission
DEP	Directorate of Studies and Programming
DFS	Decentralised Financial Services
DGA	Directorate General for Agriculture
DGE/EF	Directorate General for the Environment, Water Resources and Forestry
DGGR	Directorate General for Rural engineering
DGPIA	Directorate General for Livestock Production and Industries
DGPS	Directorate General for Sector Programmes
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
ERR	Economic Return Rate
ESMP	Environmental and Social Management Plan
FRR	Financial Return Rate
GAFSP	Global Agricultural and Food Security Programme
INRAN	Niger National Agronomic Research Institute
MAG	Ministry of Agriculture
MHE	Ministry of Water Resources, Environment and Desert Control
MP/AT/DC	Ministry of Planning, Land-Use Management and Community Development
NPV	Net Present Value
PANA	National Adaptation Action Plan
PNDI/CER	National Irrigation Development / Surface Water Collection Programme
PNIA	National Agricultural Investment Programme
PRSP	Poverty Reduction Strategy Paper
PSRC	Climate Resilience Strategy Programme
RBCSP	Results-based Country Strategy Paper
SDRP	Accelerated Development and Poverty Reduction Strategy
WSC/SPR	Water and Soil Conservation / Soil Protection and Restauration

Project Information Sheet

Customer Data

BORROWER : Republic of Niger
EXECUTING AGENCY : Ministry of Agriculture (MAG)

Financing Plan

Source	Amount (UA million)	Instrument
GAFSP	21.020	Grant
ADF	9.340	Loan
Spanish Cooperation	9.558	Grant
Beneficiaries	0.120	
Government of Niger	0.405	
TOTAL COST	40.443	

ADB Key Financing Information

Loan currency	UA
Interest Type*	(NA)
Interest Rate Margin*	(NA)
Commitment Fee*	(0.75)
Other Fee*	(NA)
Tenor	50 years
Grace Period	(10 years)
ERR (baseline scenario): 15.0% - NPV amount: 3.956	CFAF billion
FRR (baseline scenario): 14.3% - NPV amount: 3.051	CFAF billion

**if applicable*

Timeframe – Main Milestones (expected)

Concept Note Approval	March 2011
Appraisal	April 2011
Project Approval	September 2011
Effectiveness	November 2011
Last Disbursement	December 2016
Completion	December 2017

Project Summary

1. General Overview of Project

1.1 Located in the very heart of the Sahelo-Saharan zone, Niger faces recurrent food crises due to erratic and insufficient rainfall, among other things. Frequent droughts and desert encroachment observed over the last few decades prompted Niger's decision to retain water resource mobilisation as the cornerstone of its Rural Development Strategy (RDS), geared towards guaranteeing national food security. The cereal deficit is estimated at 300,000 tonnes and occurs one out of every three years. Household vulnerability surveys conducted in April 2010 by the National Early Warning System indicate that over 7 million persons, or 46% of the population, live in a situation of moderate (25.5%) to severe (22.2%) food insecurity. The most affected regions are Maradi (29.3%) and Tahoua (24.5%). The acute malnutrition prevalence rates are above the emergency threshold of 15%, especially in Maradi (19.7%), Zinder (17.8%) and Tahoua (15.8%).

1.2 Given such recurrent food insecurity, the Government of Niger concentrated on raising and safeguarding agricultural output by creating agricultural, sylvicultural and pastoral development centres located in surface water collection sites. This option is expressed in the Rural Development Strategy (RDS) supported by the National Agricultural Investment Plan (PNIA) which was validated through the ECOWAP/PDDAA regional process. The Water Mobilisation Project to Enhance Food Security in Maradi, Tahoua and Zinder Regions (PMERZA-MTZ) was identified under the Global Agriculture and Food Security Programme (GAFSP) - a multilateral financing mechanism for implementing G20 food security commitments. For over a decade, the Bank assisted Niger in this agricultural output diversification and safeguard approach through: (i) the Tahoua Water Mobilisation Project (PMET); (ii) the Zinder Agricultural Development Support Project (PADAZ); (iii) the Local Development Support Project (PADL) in Diffa Region; (iv) the Dosso and Tillabéry Water Development Project (PVDT); and (v) the Water Mobilisation Study in Maradi Region (EMERM). It also co-finances the Kandadji Ecosystem Regeneration and Niger Valley Development Programme. Given the positive results and impact of these operations and at Government's request, the Bank assisted Niger in submitting a financing request to GAFSP for implementing PMERZA-MTZ.

1.3 The total project cost is UA 40,443 million (USD 63.49 million or CFAF 30,165,406 000), jointly financed by GAFSP (USD 33 million), ADF (USD 14.66 million), Spanish Cooperation (USD 15 million), Government of Niger (USD 0.64 million) and beneficiaries (USD 0.19 million). It will be implemented over five years. The main expected outcomes are: (i) construction and rehabilitation of water-spreading bunds, mini dams and irrigation areas, thanks to which an area of approximately 17,600 ha would be developed; (ii) land tenure security for the developed sites; and (iii) construction of village wells, rural roads and storage infrastructure. These outcomes will increase the irrigated surface area, reduce post-harvest losses, increase agricultural output and improve living standards for more than 200,000 persons.

2. Needs Assessment

The communities in Maradi, Tahoua and Zinder regions face recurrent food insecurity and perpetuation of their poverty level. The annual cereal deficit in these three regions is estimated at about 130,000 tonnes. The high desertification rates in these areas will leave an irreversible impact if no significant measures are taken in the short term. The Bank has already intervened in Tahoua and Zinder through the PMET and PADAZ projects, respectively, and also financed a water mobilisation study in Maradi region. All these operations yielded valued results and made it possible to assess the

irrigation and pastoral development needs of these regions. The lessons learnt from completed operations also influenced the design of PMERSA-MTZ, by highlighting the following principles: implementation of simple technical solutions to basic problems; systematic adoption of a participatory approach and development of partnerships; close involvement and empowerment of all stakeholders; and indispensable assistance to farmers.

3. Bank's Value-added

By focusing on the first pillar of its assistance strategy in Niger, namely rural development through water resource mobilization, and as the entity supervising project implementation on behalf of GAFSP, the Bank will pursue and step up its support to Niger in a domain in which the ADF has demonstrated its competence and expertise for over a decade. Operations financed by the Bank in Niger have led to the development of proven expertise in surface water mobilization and raised community expectations for this development model. PMERSA-MTZ will strive to build on all these achievements and extend their impact to the three project regions.

4. Knowledge Management

The project provides for capacity-building in water and soil conservation for regional technical services. PMERSA-MTZ will develop specific irrigation expertise within the administration, mainly through technical assistance missions based on targeted cooperation with neighbouring countries which have more experience in this area. It will also fund training and knowledge enhancement for various local stakeholders, especially farmers in the irrigation areas, mainly through support provided by NGOs specialised in structuring and organising irrigation water management committees. Generally, and in a bid to guarantee the sustainability of infrastructure put in place, the project will strive to ensure that best practices are adopted in managing small irrigated schemes, irrigation water management and farmer organization.

REPUBLIC OF NIGER
Water Mobilisation Project to Enhance Food Security in Maradi, Tahoua and Zinder Regions (PMERSA-MTZ)
RESULTS-BASED LOGICAL FRAMEWORK

NIGER: Water Mobilisation Project to Enhance Food Security in Maradi, Tahoua and Zinder Regions (PMERSA-MTZ)						
Project Goal: Sustainably raise agricultural output and productivity through mobilization of surface and groundwater						
RESULTS CHAIN		PERFORMANCE INDICATORS			MEANS OF VERIFICATION	RISKS/ MITIGATIVE MEASURES
		<i>Indicator (including ISCs)</i>	<i>Baseline Situation</i>	<i>Target</i>		
IMPACT	The food security of communities is enhanced	Coverage ratio of food product needs by national production	52% in 2011	62% in 2016	Reports and statistics of MAE and other ministries concerned Reports and statistics from the RDS and SDRP	Risk: political and social instability Mitigative measures: Institutional framework favorable to good governance, democracy and implementation of SDRP/SDR
EFFECTS	Output and productivity sustainably increased	Agricultural output Yields from major crops	Cereals: 200,000 T Vegetables: 83,000 T Sorghum: 0.5T/ha Onion: 19T/ha Tomato: 9T/ha Green pepper: 16T/ha Watermelon: 9T/ha	Additional output: Cereals: 15,000T/an Vegetables: 16,000T/year; Decreasing output: Sorghum: 1.5T/ha Onion: 25T/ha Tomato: 12.5T/ha Green pepper: 22T/ha Watermelon: 11.5T/ha Irrigation farming yields: Onion: 31T/ha Tomato: 15T/ha Green pepper: 25T/ha Watermelon: 14T/ha	- Reports and statistics of MAE and other ministries concerned - Periodic project monitoring reports - Participatory impact surveys on beneficiaries at mid-term and project completion - Technical assistance reports of the project, NGOs and beneficiary associations - Bank supervision mission reports - Mid-term review report and project completion report	Risk: Water shortage Mitigative measures: The use and transfer of some of the water from the Jibiya Dam are guaranteed by agreements signed between Niger and Nigeria on equitable sharing of common water resources. The agreements state that the volume of water released from the Jibiya Dam to Maradi will be 23.7 million m ³ /year, which largely covers the 3 million m ³ /year of Jibiya water needed to irrigate the farms in the project area.

OUTCOMES	1 Infrastructure to mobilise water for farming - Small-scale irrigation - Soil conservation - Opening up access to farming areas - Sinking of village wells	1.1 Number of bunds constructed/rehabilitated 1.2 Number of small dams constructed 1.3 Amount of water mobilised by the facilities (cubic metres) 1.4 Number of wells built 1.5 Surface area of farmland developed (irrigated and flood-recession) 1.6 Surface area of degraded farmland restored 1.7 Length of farm-to-market roads built 1.8 Irrigated surface area	5,674 ha	1.1 45 bunds constructed/rehabilitated in Project Year 5 (22 in Maradi; 16 in Zinder; 4 in Tahoua) 1.2 09 mini dams constructed/rehabilitated (3 in 2013; 6 in 2013) 1.3 50 million m ³ of water mobilised by the constructed facilities 1.4 1,690 vegetable farming wells and 74 village wells constructed and rehabilitated 1.5 280 ha of small irrigated farms (125 ha in 2013; 55 ha in 2014; 100 ha in 2015); 10 ha of experimental farms in Tahoua from 2013 1.6 Water and soil conservation works on 2,000 ha (plus recovered land) at the end of the project 1.7 178 km of rehabilitated farm-to-market roads (86 km in 2013; 92 in 2014) 1.8 17,860 ha: 12000 ha for flood-recession cereals (maize + sorghum), 260 ha as irrigated vegetable farmland and 5600 ha as flood-recession vegetable farmland at the end of the project	- Reports and statistics of MAE and other ministries concerned - Project technical assistance reports, NGOs and beneficiary associations - Bank supervision mission reports - Mid-term review report and project completion report - Periodic project monitoring reports - Monthly, quarterly and annual reports of DFS, NGOs and the project	Risk: Implementation delays as well as maintenance and facility management difficulties: A significant volume of the irrigation works may pose a risk in terms of compliance with the implementation schedule, given the average size and limited capacity of national contractors. Mitigative measures: Conduct of studies using the advance procurement action and, for large-scale works, the bidding documents will impose an allotment tailored to the capacity of contractors and the number of lots per contractor will be limited. The facilities will be simple in design and easy to maintain, and numerous awareness-raising and consultancy support actions will be conducted for farmers and management committees. * Risk: Land disputes: The amount of pressure on land in the three regions could lead to land conflicts, especially in case of improved water resources in the developed lands. Mitigative measures: These risks are mitigated by: (i) restructuring of plots and institution of an optimum surface area for farming; (ii) involvement of COFOs at the local, communal and district level in the villages and in the sites concerned; and (iii) existence of land laws and monitoring by the rural code permanent secretariat.
KEY ACTIVITIES	<p>2 Enhancement of agricultural production - Support to farmers - Support to IGAs - Settlement of land disputes</p> <p>3 Project management - Monitoring project implementation and execution of activities - Recruitment of contractors and consultancy firms for project implementation - Recruitment of the audit firm</p>	<p>2.1 Rural communities, farmers, associations/groups supported 2.2 Number of jobs created for men/women 2.3 Number of animal feed/cereal banks and input shops created 2.4 Quantity of seed stock introduced 2.5 % of women who are members of water management and land distribution committees 2.6 Number of COFOBs set up 2.7 Number of seed centers rehabilitated 2.8 Number of credit beneficiaries (men/women)</p> <p>3.1 Compliance with the project implementation schedule 3.2 Procurement according to Bank rules and procedures 3.3 Satisfactory financial management</p>		<p>2.1 5,800 farmers trained, including 3,900 women 2.2 1,200 permanent jobs created for women 2.3 25 animal feed shops, 28 cereal banks and 28 input shops constructed 2.4 45 Azawak seed stock and 10,800 goats introduced from 2012 2.5 At least 25% committee members are women 2.6 54 COFOBs set up 2.7 03 seed centres rehabilitated 2.8 5,800 farmers, including 3,900 female farmers</p> <p>3.1 Project activities implemented in 5 years 3.2 Procurement plan respected 3.3 Annual audit reports deemed satisfactory</p>		
	COMPONENTS			RESOURCES		
	<p><u>Component 1:</u> Infrastructure to mobilize water for farming</p> <p><u>Component 2:</u> Enhancement of output and accompanying actions</p> <p><u>Component 3:</u> Project management</p>			<p><u>Component 1:</u> UA 30.601 million</p> <p><u>Component 2:</u> UA 6.657 million</p> <p><u>Component 3:</u> UA 3.185 million</p> <p><u>Sources of Financing:</u></p> <ul style="list-style-type: none"> ● ADF loan: UA 9.34 million ● GAFSP grant: UA 21.02 million ● Spanish Cooperation grant: UA 9.56 million ● GVT+beneficiaries: UA 0.52 million ● TOTAL: UA 40.44 million 		

PROJECT IMPLEMENTATION SCHEDULE

<i>ACTIVITIES</i>		<i>Project Implementation Years</i>																											
		2011				2012				2013				2014				2015				2016							
1.	Appraisal																												
2.	Advance procurement for the detailed preliminary plan																												
2.	Negotiations																												
3.	Loan approval																												
4.	Signature of loan agreement																												
5.	Fulfillment of effectiveness conditions																												
6.	Commencement of project activities																												
7.	Implementation of services																												
8.	Mid-term review																												
9.	Country completion report.																												
10.	ADF completion report																												

REPUBLIC OF NIGER – APPRAISAL REPORT
WATER MOBILISATION PROJECT TO ENHANCE FOOD SECURITY IN MARADI,
TAHOUA AND ZINDER REGIONS
(PMERSA-MTZ)

Management hereby submits this report and recommendations concerning a proposal to grant a loan of *UA 9.34 million from the ADF and award a grant of UA 21.02 million from GAFSP* to the Republic of Niger, as contribution to financing the Water Mobilisation Project to Enhance Food Security in Maradi, Tahoua and Zinder Regions (PMERSA-MTZ).

I Strategic Thrust and Rationale

1.1 Project Linkages with Country Strategy and Objectives and to GAFSP Criteria

1.1.1 PMERSA-MTZ focuses on water resource mobilisation and development to increase and consolidate agricultural output, as means of enhancing food security. It is in line with Niger's Rural Development Strategy (RDS) through Sub-Programme 4.1 "Irrigation Infrastructure" (increase the contribution of irrigation farming to agricultural GDP from the current 14% to 28% in 2015) and Sub-Programme 4.2 "Transport Infrastructure" (open up access to agricultural, sylvicultural and pastoral farming areas to boost socio-economic interaction). It equally relates to Priority Programme 11 of the RDS aimed at combating food insecurity by developing irrigation. It also ties in with the objectives of the national irrigation development and surface water collection strategy aimed at consolidating and increasing irrigated areas, while raising the output of the infrastructure set up.

1.1.2 Specifically, the project is in line with the two strategic pillars of Country Strategy Paper (CSP) 2010-2012, namely: (i) rural development through water resource mobilisation; and (ii) infrastructure development, including social infrastructure. The project is consistent with ADF XII principles and guidelines, such as mainstreaming issues that cut across the essential operations of the Bank in an innovative and more rigorous manner (mitigation of climate change, infrastructure, gender, food security and agricultural productivity). It is equally consistent with the Bank's Agricultural Sector Strategy (2008-2012) which focuses on infrastructure development and natural resource management. Furthermore, the operations planned under the project are consistent with the technical pillars of the Comprehensive Africa Agriculture Development Programme (CAADP), namely: Pillar 1 (surface area increase and water management), Pillar 2 (access to markets through rural infrastructure improvement and other trade-related actions), Pillar 3 (food and nutritional security), and Pillar 4 (agricultural research and dissemination of technology).

1.1.3 The activities to be financed are also consistent with the components of the GAFSP framework document: Component 1 ("raise agricultural productivity" by extending and rehabilitating irrigated areas, and improving water use in rain-fed farming systems); Component 2 ("increase farmers' access to markets" by building and rehabilitating farm-to-market roads and "other value-added" by increasing storage capacity); and Component 3, ("reduce risks and vulnerability" by mitigating risks related to vagaries of the weather).

1.2 Rationale for Bank's Involvement

Food insecurity is recurrent in Maradi, Zinder and Tahoua regions and over 50% of the population suffers regularly from cereal shortages. Given this situation, the Government of Niger undertook to increase and safeguard agricultural output by developing surface water

retention sites and creating an enabling environment for flood-recession agriculture, irrigation, pastoral activities and flood-plain protection. The Bank embarked on this path over a decade ago and in 2006 financed the Maradi Region Water Mobilization Study that was updated in February and March 2011. The PMET and PADAZ projects, completed in 2007 and 2009, yielded very interesting results in Tahoua and Zinder regions with the creation of about twenty diversified water collection structures that helped to increase food security in the new sites and boost the local economy. PMERSA-MTZ will contribute to consolidating PMET and PADAZ achievements, provide a better response to community demands and extend development and food security operations to Maradi region. As concerns GAFSP financing, the Government of Niger chose the Bank as the project supervision agency. This choice is motivated by the Bank's experience in Niger in surface water management and mobilization as well as in specific operations conducted in the three regions concerned.

1.3 Aid Coordination

1.3.1 The partnership between donors and the Government of Niger is governed by the principle set forth under the Paris Declaration. In Niger, aid is coordinated through the Poverty Reduction Strategy Paper (PRSP), which is the reference framework for current and future operations by Technical and Financial Partners. Coordination is done through five organs: the National Steering Committee, the National Government/TFP Committee, the National Consultative and Dialogue Committee, sector structures and the permanent secretariat.

<i>Sector or Sub-sector*</i>	<i>Size</i>		
	<i>GDP in 2010</i>	<i>Exports in 2010</i>	<i>Labour</i>
<i>Agricultural Sector</i>	54.1%	18.8%	80% of Rural Households
<i>Stakeholders: State-Donors (ODA in USD million)</i>			
<i>Government: Annual public spending (average) over the 2008- 2010 period</i>	<i>Donors: ODA disbursements over the 2008- 2010 period</i>		
1234.2	- Budgeted aid		
	Bilateral	242.2	
	Multilateral	514.0	
	Total budgeted aid	756.2	
	- Extra-budgetary aid		
	Bilateral	311.6	
	Multilateral	115.9	
	Total extra-budgetary aid	427.5	
	Grand total	1182.3	
<i>Aid coordination level</i>			
<i>Existence of thematic working groups (TWGs)</i>			<i>Yes</i>
<i>Existence of a global sector program</i>			<i>No</i>
<i>ADB's role in assistance coordination</i>			<i>TWG member</i>

1.3.2 The rural sector operations of Technical and Financial Partners (TFPs) are coordinated through the RDS Executive Secretariat. RDS is implemented through steering, consultative and dialogue mechanisms at both the strategic level with an Inter-ministerial Steering Committee, a technical consultative committee and a State/TFP consultative framework, and at the operational level with a specific mechanism for each programme defined in the RDS. This project has been reviewed and discussed with TFPs in Niger, including the European Union, which is the lead agency for agriculture and food security, and Spanish Cooperation which, in this case, decided to co-finance the project with USD 15 million.

II PROJECT DESCRIPTION

2.1 Project Components

Table 2.
Project Components

No	Component	Cost Estimate (in UA million)	Component Description
1.	Water-mobilisation infrastructure for farming	30.601	<p>Construction of surface water collection and conservation structures: construction and rehabilitation of spread irrigation bunds (45), construction and rehabilitation of mini-dams (09), deepening of ponds (06), construction and equipment of vegetable-farming wells (1,690), construction and rehabilitation of village wells (74), protection of river banks (7,000 ml), development of a surface area of 17,860 ha: 12,000 ha for flood-recession wheat (maize + sorghum), 260 ha for irrigated vegetable farming, and 5,600 ha for flood-recession vegetable farming, construction and rehabilitation of farm-to-market roads (178 km).</p> <ul style="list-style-type: none"> ▪ WSC and environmental protection activities: land recovery (320 ha), hedges (50 km), windbreaks (100 km), natural regeneration (1,600 ha). ▪ Conduct of additional studies and comprehensive execution of water works and inventory of the irrigable potential.
2.	Improvement of output and support ant actions	6.657	<ul style="list-style-type: none"> ▪ Support and guidance to farmers through: (i) procurement of agricultural, zootechnical and phytosanitary equipment; (ii) training and awareness-raising for farmers; (iii) construction of input shops (28), cereal banks (28) and animal feed shops (25). ▪ Promotion of women's initiatives through income-generating activities, processing equipment and capacity building. ▪ Establishment of a rural credit fund and institution building with a contribution from Spanish Cooperation to build the financial capacity of beneficiaries. ▪ Rehabilitation of 3 seed centres, support to land-use commissions, support to seed multiplication and certification. ▪ Constitution and training of farmers' cooperatives, establishment of farmers' demonstration farms, literacy activities.
3.	Project management	3.185	<ul style="list-style-type: none"> ▪ Coordination of implementation of the project's technical and financial activities in conjunction with partner services. ▪ Management of project financial resources and close supervision of programme activities. ▪ Preparation of procurement documents. ▪ Consolidation of existing national structures responsible for project implementation. ▪ Internal monitoring/evaluation of project performance indicators. ▪ Annual audits and final project evaluation.

2.2. Technical Solutions Adopted and Alternatives Explored

*Table 2.2
Alternative Solutions Explored and Reasons for Rejection*

Alternative	Brief Description	Reason for Rejection
Adoption of irrigation in large schemes downstream of dams	Development of extensive irrigation schemes downstream of dams.	Solution ill-adapted to the limited managerial capacity of beneficiaries and requiring more capital.
Transfer of Jibiya waters by canal	Transfer of water from Jibiya Dam (Nigeria) through a 30 km concrete canal leading to Maradi Plain.	Very costly, limited surface area for development and a more complex development plan to manage.

2.3 Project Type

The financing will be granted in the form of an ADF loan and grants (GAFSP and Spanish Cooperation).

2.4. Project Cost and Financing Arrangements

2.4.1 The total project cost is estimated at UA 40.443 million, net of taxes and customs duty (USD 63.49 million or CFAF 30,165,406,000), of which 71% as foreign exchange and 29% as local currency. The project cost summary, the breakdown of financing and the expenditure schedule are presented in Tables 2.3 to 2.6. The project is co-financed by GAFSP (51.97%), the Kingdom of Spain (23.63%), the ADF (23.01%), the Government of Niger (1.09%) and beneficiaries (0.30%). Co-financing from Spanish Cooperation will be parallel financing.

*Table 2.3
Summary of Cost Estimates by Component*

Components	CFAF million			UA million			% F.E.	% Base Cost
	L.C.	Foreign Exchange	Total	L.C.	F.E.	Total		
1. Water collection and mobilization infrastructure	4 819.520	14 953.399	19 772.919	6.462	20.048	26.509	76	75
2. Enhancement of output and support actions	1 372.039	3 001.394	4 373.433	1.839	4.024	5.863	69	17
3. Project management	1 769.481	376.944	2 146.424	2.372	0.505	2.878	18	8
Base cost	7 961.039	18 331.737	26 292.776	10.673	24.577	35.251	70	100
Physical contingencies	511.644	1 306.674	1 818.317	0.686	1.752	2.438	72	7
Financial contingencies	406.422	1 647.890	2 054.312	0.545	2.209	2.754	80	8
TOTAL PROJECT COST	8 879.105	21 286.301	30 165.406	11.904	28.538	40.443	71	115

Table 2.4
Summary of Cost Estimates by Expenditure Category

Expenditure Category	CFAF million			UA million			% F.E.	% Base Cost
	L.C.	Foreign Exchange	Total	L.C.	F.E.	Total		
INVESTMENT	6 637.465	18 262.550	24 900.015	8.899	24.485	33.383	73	95
WORKS	3 773.204	13 333.971	17 107.174	5.059	17.877	22.935	78	65
GOODS	457.315	1 071.135	1 528.449	0.613	1.436	2.049	70	6
SERVICES	2 406.947	3 857.444	6 264.391	3.227	5.172	8.399	62	24
OPERATION	1 323.574	69.188	1 392.762	1.775	0.093	1.867	5	5
Base cost	7 961.039	18 331.737	26 292.776	10.673	24.577	35.251	70	100
Physical contingencies	511.644	1 306.674	1 818.317	0.686	1.752	2.438	72	7
Financial contingencies	406.422	1 647.890	2 054.312	0.545	2.209	2.754	80	8
TOTAL PROJECT COST	8 879.105	21 286.301	30 165.406	11.904	28.538	40.443	71	115

Table 2.5: Sources of Financing

Sources	UA million			CFAF million			USD million
	Foreign Exchange	L.C.	Total	Foreign Exchange	L.C.	Total	
GAFSP	16.927	4.093	21.020	12 625.531	3 052.777	15 678.308	33.00
Spanish Cooperation	5.851	3.707	9.558	4 364.144	2 765.055	7 129.199	15.00
ADF	5.760	3.580	9.340	4 296.626	2 669.935	6 966.561	14.66
Government	0	0.405	0.405	0	301.869	301.869	0.64
Beneficiaries	0	0.120	0.120	0	89.469	89.469	0.19
TOTAL	28.538	11.905	40.443	21 286.301	8 879.098	30 165.406	63.49

Table 2.6: Expenditure Schedule by Component (in UA million)

Components	2012	2013	2014	2015	2016	TOTAL
1. Water collection and mobilization infrastructure	1.254	12.616	10.335	5.801	0.595	30.601
2. Enhancement of output and support actions	0.594	1.871	1.564	1.549	1.079	6.657
3. Project management	0.539	1.049	0.540	0.502	0.556	3.185
TOTAL	2.387	15.536	12.438	7.852	2.229	40.443

2.4.3 GAFSP will finance water works (bunds, mini-dams, deepening of ponds, dykes), small-scale irrigation, access routes, final designs (FDs) and bidding documents (BDs) for the project structures. The ADF will finance water and soil conservation (WSC) and environmental protection works, river bank and gully protection, capacity building, rehabilitation of project buildings and seed centres, the procedures manual, audit, agreements with technical services and project operation. Spanish Cooperation will finance the village wells, storage infrastructure, individual consultancy services, works control and monitoring, agricultural equipment and inputs, income-generating actions (IGAs) for women, credit, vehicles and motorcycles, office furniture, training of project experts and project mid-term and final reviews.

2.5 Project Target Area and Beneficiaries

The project target area covers Maradi, Tahoua and Zinder regions situated in the country's Centre-South. Specifically, the project sites are situated mainly in the valleys and basins of Goulbi (Maradi), Koramas (Zinder) and Maggia (Tahoua) as well as in bottomlands and around certain ponds. The project area also includes a transfer sector zone upstream of

Mandarounfa in Maradi region from where water from Jibiya Dam in Nigeria will be released for water table replenishment and/or direct use for small-scale irrigation. The three project regions cover close to 56% of the country's total population, representing about 8.9 million persons, of which over 213,000 will benefit directly from PMERSA-MTZ and 460,000 indirectly. The population is mostly rural and mainly practises traditional rain-fed farming and stockbreeding activities that can generate substantial additional income for rural households. The poverty situation in the three regions is alarming. In Maradi, close to 80% of the population lives below the poverty line. Women and youth who make up 63% of the population are the poorest and most vulnerable group with inequitable access to various resources (land, education, training, etc.).

2.6 Participatory Approach for Project Identification, Design and Implementation

2.6.1 The communities in Maradi region were actively involved right from the project identification phase through participatory surveys conducted in various sites and the restitution workshops organised for the preparatory study conducted in 2006 and during the preliminary design study (PDS) of February and March 2011. In the Tahoua and Zinder regions, needs were identified and itemized during implementation of the PMET and PADAZ projects and during the completion report preparation missions of these projects in 2008 and 2009, respectively. The communities and the local and regional authorities concerned were also involved during the PMERSA-MTZ formulation mission of April 2011, making it possible to define project objectives, components and activities through a consultative approach involving all stakeholders. This approach will be pursued during the project implementation phase to guarantee ownership of project outcomes by the beneficiaries.

2.6.2 The proposed project was validated by the Inter-ministerial Steering Committee of the Rural Development Strategy Executive Secretariat and also presented at the GAFSP business meeting of June 2010, organized in Dakar under the aegis of ECOWAS. That meeting brought together the representatives of national, regional and sub-regional technical and financial partners. Throughout the preparation stages, the project was also discussed in Niger with all the development partners concerned. The final proposal forwarded to the GAFSP Steering Committee was endorsed by the TFP group with which consultations will be pursued during the implementation phase.

2.7 Bank Group Experience and Lessons Reflected in Project Design

The implementation of several irrigation development projects since the early 2000s in various regions of Niger (PMET Tahoua, PADAZ Zinder, PADL Diffa, PVDT Dosso Tillabéri) has yielded convincing results in water management and mobilisation, and transformed the Bank into a privileged partner in this area. The completion reports of PMET Tahoua and PADAZ Zinder confirmed the merit of water mobilization as a strategy for enhancing food security and poverty reduction. The last portfolio review conducted by the Bank in September 2010 highlighted the remarkable progress made in managing this portfolio; a score of 2.3, obtained after an overall portfolio review, reflects the progress and satisfactory quality of the portfolio. Thanks to these results, lessons were drawn and guidelines adopted; these are reflected in the design of the current project, namely: (i) give priority to projects that are simple in design and focused on priority poverty reduction and food security activities, and for which the communities can be mobilised; (ii) develop synergy between development programmes and encourage experience-sharing between projects; (iii) target zones with a relatively limited surface area to address problems of isolation and access in Niger, monitoring difficulties and costs, and ensure

consistency with the ongoing decentralization process; (iv) consider the integration of agriculture and stockbreeding, which calls for the systematic management of land issues and support to the various land-tenure commissions; (v) include infrastructure development under project implementation to help beneficiaries take ownership of various project infrastructure and start operating it under the right conditions; (vi) address difficulties of access to rural credit and the weakness of microfinance institutions in Niger by providing adapted support; and (vii) support capacity-building for beneficiaries and experience-sharing between similar projects through study trips to neighbouring and North African countries.

2.8. Key Performance Indicators

To measure the progress made in attaining set objectives, a monitoring/evaluation mechanism will be established within PMERSA-MTZ and managed by the project team and the monitoring/evaluation services of MAGEL (DEP and Technical Directorates). Monitoring/evaluation will also be conducted in close collaboration with the mechanism set up by the RDS (notably the Medium-Term Expenditure Framework), which will ensure overall consistency with national mechanisms provided for in this area by the PRSP, within and beyond the Strategy. For the key performance indicators, emphasis will be on targeting the most relevant indicators that can be monitored and data collected internally with the aid of technical services and other partners, and on defining those that specifically relate to gender (training, credit, land tenure, etc.). From the baseline situation that the project will establish, monitoring will mainly cover: (i) the infrastructure construction rate; (ii) the surface area reclaimed and developed; (iii) yields; (iv) output per crop (cereals and vegetables); (v) effective organisation of farmers' supervision and training; (vi) additional income generated by facilities and activities initiated by the project; (vii) women's involvement in decision-making and self-management bodies set up, as well as their access to credit; and (viii) reduction of post-harvest losses. All the target indicators will be presented in the periodic project progress reports and during joint monitoring and technical supervision missions.

III Project Feasibility

3.1 Economic and Financial Performance

3.1.1 Economic analysis was conducted using the baseline price method and comparing the "no-project" and "project" situations. Economic and financial performance was assessed based on an investment life of 20 years. The project costs relate to investments made including physical contingencies, repair and maintenance costs, production costs (seeds, fertilizer, pesticides, agricultural works, etc.). The analysis focused on six farming models. The additional income generated for various types of farming varies from CFAF 501,000 to CFAF 1,196,000 per hectare for vegetable farming, and CFAF 165,000 to CFAF 309,000 per hectare for flood-recession cereals.

3.1.2 The financial and economic rates of return are summed up below. The economic benefits of the project stem from an increase in agricultural output (15,000 tonnes of cereals and 16,000 tonnes of vegetables at full operation), facilitation of farm-to-market access as well as the construction of storage infrastructure which contributes to a reduction in post-harvest losses. Other project benefits, which are harder to quantify, are also worth mentioning: decline in soil erosion, capacity-building for farmers' cooperatives and a reduction in travel time.

ERR (baseline scenario): 15.0% - NPV amount: 3.956	CFAF billion
FRR (baseline scenario): 14.3% - NPV amount: 3.051	CFAF billion

3.2. Environmental and Social Impact

3.2.1 Environment: the project is classified under Environmental Category 2. The potential direct and indirect effects that the infrastructure planned under the project could generate are controllable. Major positive effects are expected, such as: job creation, increased agricultural and livestock production, replenishment of the water table, improvement in food security and the living conditions of vulnerable social classes, etc. Potential negative effects include: (i) during the works phase: destruction of the vegetation, risk of accident during infrastructure construction, risk of contracting STD/AIDS, soil degradation and fragility due to movement of machinery; and (ii) during the operational phase: risk of water-borne diseases, risk of conflict between users of water resources, risk of river bank degradation due to poor operation of the infrastructure, etc. An Environmental and Social Management Plan (ESMP) was prepared. It clearly outlines: (i) description of project impact; (ii) mitigation programme; (iii) environmental and social monitoring; (iv) institutional implementation mechanism and related costs; and (v) definition of a schedule for implementation of activities. The cost of the ESMP is estimated at close to CFAF 345 million. Implementation and environmental monitoring will be entrusted to the Environmental and Impact Assessment Bureau (BEEEI) - the recognized authority in this area in Niger. An agreement will be signed to that end between PMERSA-MTZ and BEEEI.

3.2.2 **Climate change:** a Sahelian country, Niger has a highly variable climate over time and space, especially with regard to rainfall. This situation accounts for the recurrent low rainfall that translates into severe droughts. According to the International Livestock Research Institute and based on a review of 14 indicators for all African countries, Niger is without doubt among the category of countries most vulnerable to climate change (Categories 3 and 4) on a scale of one to four (inventory of knowledge on climate resilience in Niger, November 2009). This situation of limited agricultural and pastoral potential, caused by intense climate variability and fragile ecosystems, has led farmers to cultivate marginal lands that are particularly sensitive to erosion and herders to engage in overgrazing especially, around water points and livestock concentration areas.

3.2.3 The dam construction sites selected under PMERSA-MTZ are situated in floodable valleys that are sometimes fairly wooded. Hence, flooding of the vegetation after irrigation of the basin could lead to its destruction and decomposition, thus producing greenhouse gases (GHGs). To mitigate this risk, the vegetation cover will be cleared beforehand in collaboration with the communities concerned, and the wood recovered for home use. The various irrigation areas to be developed around the dams could also contribute to the production of greenhouse gases generated by harvest residue submerged under annual floodwaters. This risk could easily be mitigated by using such residue as animal feed through the integration of agriculture and stockbreeding.

3.2.4 With respect to local climate change, the creation of water bodies and the development of plantations (wind breaks) under the project will have a beneficial effect on the ambient temperature and humidity in the irrigated areas. The temperature in these areas would be lower on average and the humidity greater. In general, given the modest size of the infrastructure built under the project, its contribution to global warming will be highly negligible. Nevertheless, in terms of the local climate, its implementation will constitute an excellent barrier against desert encroachment in the project target area.

3.2.5 The project will take all necessary measures to mitigate climate risks and will develop synergy with Niger's Strategic Programme for Climate Resilience (PSRC) being prepared with World Bank support. This programme will make a useful contribution in terms of providing climate data and information useful for managing the project's development activities. The project will follow the guidelines of the National Action Programme for Adaptation to Climate Change (PANA) which updated a whole range of data on climate change in Niger. Close collaboration will also be established with various climate sector stakeholders (AGRHYMET, ME/LCD, CNEDD, ACMAD) and the Programme for Establishment of Climate Change Early Warning Systems.

3.2.6 **Social impact:** the project will help communities to better secure and diversify agricultural output. The enhancement of food security brought about by project infrastructure will help to improve the nutritional status of the population, who will consume the required quantities of vegetable products rich in proteins and healthy calories. The increase in the people's purchasing power resulting from operating the facilities and developing income-generating activities will enable households, especially women, to have access to means for therapeutic care and disease prevention. Access to drinking water will also be increased through the construction of wells. Overall, the project will help to curb rural exodus by retaining the population, especially the youth, in rural areas.

3.2.7 The rehabilitation of farm-to-market roads, the construction of cereal banks and livestock feed shops, and the use of the warrantage credit scheme (loans granted against agricultural produce deposited as collateral in a warehouse) will contribute to reducing post-harvest losses and consequently to increasing agricultural output and household income. The new access roads leading to the project sites will facilitate the sale of agro-pastoral products and generally improve trade in the areas concerned. Increased economic activity in the three regions and the active involvement of the communities concerned will give a significant boost to local development. Details of the environmental and social impact are presented in Annex C of the implementation document (Volume II).

3.2.8 **Gender:** women and youth will join the men in the decision-making process and stakeholder capacity-building. They will be a privileged target and benefit fully from the positive impact of the project. Increasing the income of this target group will help to enhance the food security and wellbeing of households since women spend most of their income on the family, especially their children. Through institutional support to the most effective DFSs, the project will also facilitate access to credit for women to enable them carry out income-generating activities. To address the increase in tasks resulting from the expansion in farm size, the project also plans to provide women with demonstration farm equipment. Such equipment will comprise a multi-functional platform composed of a mill, a hulling machine and vegetable conservation facilities. Women and the youth will be provided with support in sales management and organization, and agricultural produce marketing.

3.2.9 The organisation of farmers into cooperatives will help them to manage WSC/SPR soil development techniques, maintain rural infrastructure, procure inputs and market their produce. Special emphasis will be laid on support to women and youths in the abovementioned activities. Hence, 60% of stockbreeding beneficiaries will be women and youths. Similarly, 50% of cooperatives supported by the project will be women's cooperatives. With respect to landed property, the project will contribute to land tenure security for women on farmlands by supporting the establishment of rural land management structures (COFOB). Information and sensitization campaigns on land rights will be

conducted in local communities to encourage recognition of land allocation to women and the landless poor.

3.2.10 **Forced resettlement:** Project activities do not involve any displacement or resettlement of people.

IV IMPLEMENTATION

4.1 Implementation Arrangements

4.1.1 **Implementation schedule:** In accordance with the Paris Declaration and in line with national country systems, the project will be implemented by the Directorate General for Rural engineering (DGGR) in close collaboration with the regional directorates concerned (Maradi, Tahoua and Zinder). Accordingly, these structures will be consolidated with experts selected on a competitive basis and who will be specially tasked with project implementation. At the national level, the operational team will comprise: one coordinator, one monitoring/evaluation expert, one agricultural engineer, one sociologist specialized in gender issues, one administration and finance officer and one agronomist – all appointed by the administration. The procurement expert, accountant and accounting assistant will be recruited. At the regional level, each team will comprise a branch manager, an agricultural technician and an accounting assistant. The project team was composed to address the construction needs of infrastructure planned and the geographic distribution of project sites. The project coordinator will sign a performance contract with the Director General for Rural engineering, while the three branch managers (the three regional directors of rural engineering) will sign their performance contracts for project-related activities with the Coordinator.

4.1.2 A Project Steering Committee (PSC) serving as the top managerial body will be set up, with the Secretary General of the Ministry of Agriculture as its chair. The PSC will comprise representatives of agencies involved in project implementation: DEP/MAG, DGGR, DGA (agriculture), DGPIA (stockbreeding), DEP/MPF/PE/P, Permanent Secretariat for the Rural Code, DGH/MHE, DGP/MP/AT/DC, SE-SDR, Deputy Secretaries-General for the Maradi, Tahoua and Zinder regions, federations of farmers and herders (3), representatives of women's groups (3), representatives of the traditional chiefdom (3), and representatives of NGOs. The project team coordinator will provide secretarial services to the steering committee.

4.1.3 **Procurement:** all goods, works and services financed by the ADF and GAFSP will be procured in accordance with the Bank's relevant rules and procedures on procurement (May 2008 edition), or the Bank's rules and procedures for the recruitment of consultants (May 2008 edition), as necessary, using the Bank's standard bidding documents. The Project Coordination Team (PCT) will be responsible for procurements. Given the large quantity and scale of the water works to be built, and the need to ensure quality of PMERSA-MTZ from the very start, plans have been made to use advance action on procurement (AAP) for the recruitment of consultants tasked with preparing the final designs and bidding documents for identified infrastructure. The DGR, which has sufficient experience in similar projects, has the requisite skills for implementing this AAP. Goods and works contracts below UA 50,000 and service contracts below UA 20,000 will be approved by the PCT and subject to *ex poste* review by the ADF. Detailed procurement arrangements and the procurement table for works, goods and services are presented in Annex B5, Volume II.

4.1.4 **Financial management and disbursement:** The Project Coordination Team will be charged with managing project financial resources. The Bank will assist the country in: (i) preparing an administrative, financial and accounting procedures manual prior to project commencement; and (ii) setting up an accounting system using software capable of handling budgetary, analytic and general accounting. The PCT will be strengthened with one accountant, one accounting assistant and three accounting assistants (for the three regional directorates of rural engineering). All the accounting staff above will be recruited based on terms of reference agreed with the Bank. Project accounting will follow commitment basis accounting (private).

4.1.5 The initiative for withdrawing allocated project funds will be taken by the Project Team Coordinator. In this regard, s/he will prepare all the necessary supporting documents and documents appended to fund withdrawal requests for national counterpart funds and Bank resources. S/he will submit disbursement requests addressed to the Bank for signature by the delegated authorizing officer of the Minister empowered to sign fund withdrawals from resources allocated or managed by the Bank (ADF, GAFSP, Spanish Cooperation) in accordance with the rules and procedures set forth in the ADB Disbursement Manual. Furthermore, the coordinator will co-sign expenditure settlement and fund withdrawal transactions with the project administrative and financial officer on the three special accounts (ADF, GAFSP, Spanish Cooperation). These special accounts will be opened in banks acceptable to the ADB Group. Depending on project needs, these special accounts could be replicated at the regional level with sub-accounts that will be managed separately to preserve the integrity of all financing contributed towards project implementation. In general, the project's financial management risk was deemed substantial.

4.1.6 **Audits:** Project accounts will be audited yearly by independent external auditors recruited on a competitive basis and in accordance with the Bank's terms of reference. This audit will also cover the microcredit component. The audit report should be submitted to the Bank not later than 6 months after the close of the relevant fiscal year. The project team will endeavour to implement audit recommendations to improve project governance. More detailed financial management arrangements are presented in Annex B6, Volume II.

4.2 Monitoring/Evaluation

4.2.1 The regional technical directorates concerned (water, environment, agriculture, stockbreeding, etc.) will be closely involved in activity implementation and monitoring. To be consistent with the programme approach and the sector strategy, project monitoring will take into account the performance indicators related to those defined in the SDR/PNIA. The Government and the Bank will closely monitor the entire project execution. Joint supervision, monitoring and mid-term review missions will be conducted by the Bank during project implementation. An administrative, financial and accounting procedures manual will be prepared before the project becomes effective to ensure that the activities commence smoothly.

4.2.2 The project implementation schedule is presented in the table below:

Table 4.2
Implementation and Supervision Schedule

No.	Activities	Responsibility	Deadline
1	Appraisal	ADF	April 2011
2	Negotiations	Government/ADF	August 2011
3	Loan approval	ADF	September 2011
4	Advance procurement for final design	ADF/Government	October 2011
4	Loan agreement signature	Gouvernement/ADB	October 2011
5	Authorization of first disbursement	ADB	November 2011
6	Launching of project	Executing Agency/ADB	December 2011
7	Validation of procedures manual	Executing Agency/ADB	December 2011
11	Commencement of final design studies	Executing Agency/ADB	February 2012
12	Agreements with technical services	Executing Agency/GVT	February 2012
13	Signature of contracts	Government	March 2010 to end-2014
14	Implementation of services	PT/GVT	January 2010/end 2016
15	Mid-term review	Government/ADB	Mid-2014
15	Completion of activities	Government/ADB	End 2016
16	Borrower's completion report	Government	Mid-2016
17	Bank's completion report	ADB	End 2016
18	Audits	Executing Agency	Yearly

4.2.3 Internal monitoring/evaluation of the project and the logical framework indicators will be conducted by the project team. Monitoring/evaluation activities will seek to ensure the application of measures provided for under the project in order to measure results and impact achieved. External monitoring/evaluation will be conducted by the Directorate of Studies and Programming (DEP/MAG), in conjunction with the Directorate General for Planning (DGP) and the Executive Secretariat of the Rural Development Strategy (SE/SDR). Such monitoring will be conducted together with indicators retained under RDS programmes/sub-programmes to which the project refers. This will make it possible to identify actions to be implemented and the results achieved, and thus adjust the sector's Medium-Term Expenditure Framework (MTEF).

4.2.4 The project will prepare quarterly and annual project progress reports in the appropriate format. The Bank will regularly forward such project progress reports to the GAFSP Committee. The reports will be accompanied with a project performance evaluation, an analysis of and proposed solutions to constraints encountered. Various partners intervening as technical operators in executing project components (INRAN, BEEI, technical services) will prepare periodic reports in accordance with contractual terms defined beforehand. A joint mid-term review mission will be conducted in the middle of Year 3 in coordination with Spanish Cooperation. At the end of the project, a project completion preparation mission will be fielded.

4.3 Governance

The project will be implemented in a climate conducive to the restoration and consolidation of democracy, governance and better public procurement management. Niger was ranked 174th out of 181 countries from 2009 to 2010 in the World Bank's Doing Business 2010 Report. This situation calls for reform of all regulations and greater effort to promote and enhance public-private dialogue. In the rural sector, there is a secretariat for the rural code at the national and regional levels. Land commissions have also been set up at the district, municipal

and local levels. These commissions together with the registration process help to clarify and secure access to landed property, and thus gradually develop private initiative in the agricultural investment sector. As concerns public finance management, studies conducted in 2008 and 2009 show that although some progress was made over the last few years, the public finance management system is still fraught with many shortcomings. To address these challenges, the Government hopes to embark on a three-stage approach, with the support of technical and financial partners, as follows: (i) validate the diagnosis of the Public Expenditure Management and Financial Responsibility Review (PEMFAR II); (ii) validate recommendations formulated; and (iii) prepare a reform programme.

4.4. Sustainability

4.4.1 The project was designed with the full participation of the communities and regional technical services. It will be implemented through a participatory approach in which all activities are conducted in close consultation with beneficiaries. Such an approach makes it possible to give greater consideration to community concerns, factor in local specificities, and encourage stakeholder participation in infrastructure management and maintenance. Within this framework, capacity-building actions through technical and managerial training, guidance of beneficiaries and structuring of farmers' cooperatives will be conducted by the project through technical services and specialized NGOs.

4.4.2 The irrigation and water mobilisation infrastructure planned under PMERSA-MTZ are simple and adapted to the local context, thus guaranteeing its operation and maintenance by beneficiaries. It should also be noted that there is an adequate institutional framework that relies on local committees and district services to carry out small-scale repairs. Maintenance committees will be set up on the new sites, while previous committees established under PMET and PADAZ will be revived. Monitoring and assistance agreements between the project, communities and maintenance committees will be established to promote grassroots development and thus guarantee sustainability and better infrastructure management. The environmental actions carried out will lead to land recovery and the sustainable use of areas flooded. The Niger GEF project to implement priority PANA operations aimed at strengthening agricultural sector resilience and capacity to adapt to climate change, and the Climate Information Development and Forecast Project (PDIPC) which will be implemented with Bank financing under the Climate Resilience Strategic Programme in Niger (PSRC/Niger) will help to address additional risks posed by climate change and thus secure the facilities and agricultural output.

4.4.3 Implementation of the credit component with the support of Spanish Cooperation will allow for strengthening the managerial capacity of decentralized financial services (DFS), help to consolidate the financial capacity of beneficiaries and ensure sustainable access to rural credit. Hence, the project approach will be based on partnership with local financial institutions selected on a competitive basis following the needs of the target communities. This approach will be implemented in coordination with other project area operators such as the United Nations Capital Development Fund (UNCDF) and the EU, and through tested mechanisms, namely: (i) the guarantee fund; (ii) allocated resources; and (iii) financing of costs related to the geographic expansion of DFS. The mechanism will be retained, depending on the methodology proposed by the selected DFS, its capacity to inject own resources and/or raise funds on the market, the scope of its geographic deployment and proven partnership experience in one or the other of the mechanisms.

4.5. Risk Management

4.5.1 A number of risks that affect the attainment of project objectives were identified. They relate to: (i) water shortage; (ii) possible implementation delays as well as infrastructure maintenance and management difficulties; and (iii) land conflicts.

4.5.2 **Water shortage:** Insufficient or irregular rainfall could reduce the amount of water and consequently affect output. The planned water management infrastructure will help to mitigate the impact of climate changes and secure production through surface water collection and use. Water inflow into the small dams was evaluated based on a ten-year frequency, which mitigates the risk of non-replenishment of the facilities. In Maradi region, the functioning of the irrigated areas in the transfer zone depends on the availability of water in Jibiya Dam situated upstream on Nigerian territory and on the possibility of using and transferring some of the retained water downstream. These risks of poor water supply are mitigated by the Framework Agreement signed in 1998 between Niger and Nigeria on the equitable development, conservation and use of their common water resources, and on consultations within the Nigeria-Niger Joint Commission for Cooperation (NNJC) setting the volume of water released from Jibiya Dam to Maradi at 23.7 million m³/year. This largely covers the 3 million m³/year needed for the irrigated schemes in the project target area.

4.5.3 **Implementation delays, maintenance and facility management difficulties:** A significant amount of the irrigation works may pose a risk in terms of compliance with the implementation schedule, given the average size and limited capacity of national enterprises. However, the conduct of studies through advance action on procurement (cf. paragraph 4.1.3) and, for large-scale works, project allotment tailored to the capacity of the contractors, will be requested in the bidding documents; furthermore, the number of works per contractor will be limited. Given the scope of the development programme and the number of facilities planned, there is the risk that the infrastructure could be poorly maintained over time. Hence, priority will be given to infrastructure that is simple in design and easy to maintain, and numerous awareness-raising and consultancy support activities will be conducted for farmers and management committees. Technical training will also be provided in infrastructure management, maintenance and repair.

4.5.4 **Land disputes:** The amount of pressure on land in the three regions could lead to land conflicts, especially if water resources improve in the lands developed. These risks are mitigated by: (i) restructuring of plots and institution of an optimum surface area for farming; (ii) involvement of COFOs at the local, communal and district levels in the villages and in the sites concerned; and (iii) existence of land laws and monitoring by the rural code permanent secretariat.

4.6. Knowledge Building

The project provides for water and soil conservation capacity-building for regional technical services. It also provides for training and knowledge-building for various local stakeholders, especially farmers in the irrigation areas, mainly through support provided by NGOs specialised in the structuring and organisation of management committees. In particular, the project will develop specific irrigation expertise within the administration through technical assistance missions based on targeted cooperation with neighbouring countries which have more experience in this area.

V. LEGAL FRAMEWORK

5.1 Legal Instrument

The legal framework of the project will be a loan agreement and a grant protocol agreement between the Republic of Niger and the Bank. The Agreement signed to the satisfaction of both parties in terms of format and content, will comprise the usual terms and conditions.

5.2. Conditions Associated with Bank's Intervention

The Bank's intervention is subject to fulfillment of the following special conditions:

5.2.1 Conditions precedent to loan effectiveness: Effectiveness of the loan agreement shall be subject to the Borrower's fulfillment of the conditions provided for in Section 12.01 of the Bank's General Conditions Applicable to Loan Agreements and Guarantee Agreements.

5.2.2 Conditions precedent to first disbursement: The first disbursement of loan resources shall be subject to fulfillment by the Borrower/Donee of the following conditions:

- i. Provide the Fund with proof of appointing a Coordinator and recruiting an accountant and a procurement expert;
- ii. Provide the Fund with proof of opening special accounts to receive the various funds.

5.2.3 Other conditions: Latest six months following the first disbursement of loan resources, the Borrower/Donee shall provide the Fund with:

- i. Agreements signed between the project and (i) BEEEI (environmental monitoring) and (ii) INRAN (research-development);
Proof of project co-financing by Spanish Cooperation;
- ii. Proof of the creation of a Steering Committee and the appointment of its members; and
- iii. The project's administrative, technical and financial management procedures manual, which will also set out the respective roles of the various donors.

5.3 Compliance Bank Policies and GAFSP Criteria

The project will be executed within the framework of the Bank's intervention strategy in Niger defined in RBCSP 2010-2012, whose pillars are: (i) rural development through water resource mobilisation; and (ii) development of infrastructure, including social infrastructure. These pillars are also consistent with the criteria defined by GAFSP.

VI RECOMMENDATION

Bank Management recommends that the Board of Directors approve the proposal to award a GAFSP grant of UA 21.02 million and grant an ADF loan not exceeding UA 9.34 million to the Republic of Niger for the purpose mentioned above and in accordance with the conditions set forth in paragraph 5.2 of this report.

Comparative Socio-economic Indicators of Niger

Social indicators	Niger		Africa	Developing countries
	1990	2010 *		
Area ('000 Km ²)	1 267		30,323	80,976
Total population (in millions)	7.9	15.9	1,031.5	5,658.7
Annual population growth (%)	3.1	3.9	2.3	1.3
Life expectancy at birth – total (years)	41.6	52.5	56.0	67.1
Infant mortality rate (per 1000)	154.1	83.7	78.6	46.9
Number of physicians (per 100000)	2.0	2.0	58.3	109.5
Births attended by skilled health staff (%)	...	32.9	50.2	64.1
Measles immunization rate (% of children between 12-23)	38.0	87.0	71.1	80.7
Gross primary enrolment ratio (%)	26.0	66.6	102.7	107.2
Girl/boy ratio in primary schools (%)	60.3	81.8	91.7	96.2
Literacy rate (% of pop. Aged above 15)	...	28.7	64.8	80.3
Access to drinking water (% of population)	41.0	48.0	64.5	84.3
Access to healthcare facilities (% of population)*	3.0	9.0	41.0	53.6
HDI score (ranking out of 169 countries)	...	167.0	n.a	n.a
Human Poverty Index (HPI-1) (% of the pop.)	...	55.8
Niger				
Macroeconomic indicators	2000	2008	2009	2010
GNI per capita, Atlas method (current USD)	170	330	340	...
GDP (current USD million)	1 667	5 380	5 264	5 700
Real GDP growth (annual %)	-2.6	9.3	-1.2	5.5
Real GDP growth per capita (annual %)	-5.8	5.2	-4.9	1.6
Gross domestic investments (% of GDP)	13.9	29.2	29.3	30.3
Inflation (annual %)	2.9	11.3	4.9	3.4
Budget balance (% of GDP)	-3.8	1.4	-6.6	-3.2
Trade, external debt and financial flows	2000	2008	2009	2010
Variation in export volume (%)	27.4	-1.1	1.9	3.0
Variation in import volume (%)	6.7	30.8	22.0	8.7
Terms of trade variation	-17.7	23.3	3.2	-11.9
Trade balance (in USD million)	-47.7	-438.4	-619.0	-874.4
Trade balance (% of GDP)	-2.9	-8.1	-11.8	-15.3
Current account balance (in USD million)	111.5	-697.6	-1233.6	-1033.2
Current account balance (% of GDP)	-6.7	-13.0	-23.4	-18.1
Debt servicing (% of exports)	73.4	1.8	2.0	1.7
Total external debt (% of GDP)	89.1	14.0	15.8	17.2
Net total financial flows (in USD million)	183.0	575.2	473.3	...
Net official development assistance (in USD million)	208.4	606.7	470.0	...
Net direct investments (in USD million)	8.4	565.9	738.9	...
Private Sector Development and Infrastructure	2000	2005	2009	2010
Time needed to start a business (days)	...	35	19	17
Investor protection index (0-10)	...	3.3	3.3	3.3
Fixed phone subscribers (per 1000 inhab.)	1.8	1.8	4.4	4.4
Internet users (per 1000 inhab.)	0.2	24.7	129.1	129.1

Source: ADB Statistics Department, from national and international sources.

Last update: May 2011

On-going Bank Group Operations in Niger
(Active portfolio as at 5 June 2011)

Project Title	Division	Status	Approval date	Closing date	Amount (UA)	Disb. rate (%)	Age (yr.)	Project risk
ROAD PROJECTS Tibiri-Dakoro and Madaoua-Bouza-Tahoua	OITC1	OnGo	19/12/2005	30/06/2012	22,000,000	49.60	5.46	Non PP/PPP
EMERGENCY HUMANITARIAN ASSISTANCE TO DROUGHT VICTIMS	ORWA	OnGo	20/07/2010		653,843	100.00	0.88	Non PP/Non PPP
DIFFA AGRO-PASTORAL DEVELOPMENT PROJECT	OSAN2	OnGo	22/10/2003	31/12/2011	15,000,000	92.34	7.62	Non PP/Non PPP
PROJECT TO DEVELOP WATER RESOURCES DOSSO AND TILLABERI REGIONS (PVDT)	OSAN2	OnGo	05/10/2006	31/12/2012	13,000,000	53.40	4.67	Non PP/Non PPP
KANDADJI PROGRAMME	OSAN4	OnGo	29/10/2008	31/12/2015	20,000,000	10.99	2.60	Non PP/Non PPP
KANDADJI PROGRAMME	OSAN4	OnGo	29/10/2008	31/12/2015	20,000,000	9.26	2.60	Non PP/Non PPP
AQUATIC INVASIVE PLANTS IN NIGER	OSAN4	OnGo	22/09/2004	31/12/2011	1,220,000	96.84	6.70	Non PP/Non PPP
DECENTRALISATION SUPPORT PROJECT	OSGE2	OnGo	29/11/2006	30/06/2011	3,000,000	72.64	4.52	Non PP/Non PPP
ACCELERATED DEVELOPMENT AND POVERTY REDUCTION STRATEGY SUPPORT PROGRAM	OSGE2	OnGo	06/12/2010	31/12/2011	23,970,000	59.12	0.50	Non PP/Non PPP
ACCELERATED DEVELOPMENT AND POVERTY REDUCTION STRATEGY SUPPORT PROGRAM	OSGE2	OnGo	06/12/2010		4,030,000	100.00	0.50	Non PP/Non PPP
VOCATIONAL AND TECHNICAL EDUCATION DEVELOPMENT SUPPORT (PADEFPT)	OSHD2	Ongo	15/12/2010	31/12/2016	7,870,000	0.00	0.47	Non PP/Non PPP
VOCATIONAL AND TECHNICAL EDUCATION DEVELOPMENT SUPPORT (PADEFPT)	OSHD2	OnGo	15/12/2010	31/12/2016	17,630,000	0.81	0.47	Non PP/Non PPP
Rural DWS Project in 3 Regions	OWAS1	OnGo	21/02/2007	31/12/2011	3,000,000	35.95	4.29	Non PP/Non PPP
Rural DWS Project in 3 Regions	OWAS1	OnGo	21/02/2007	31/12/2011	10,715,019	62.29	4.29	Non PP/Non PPP
					162,088,862	40.64	3.77	

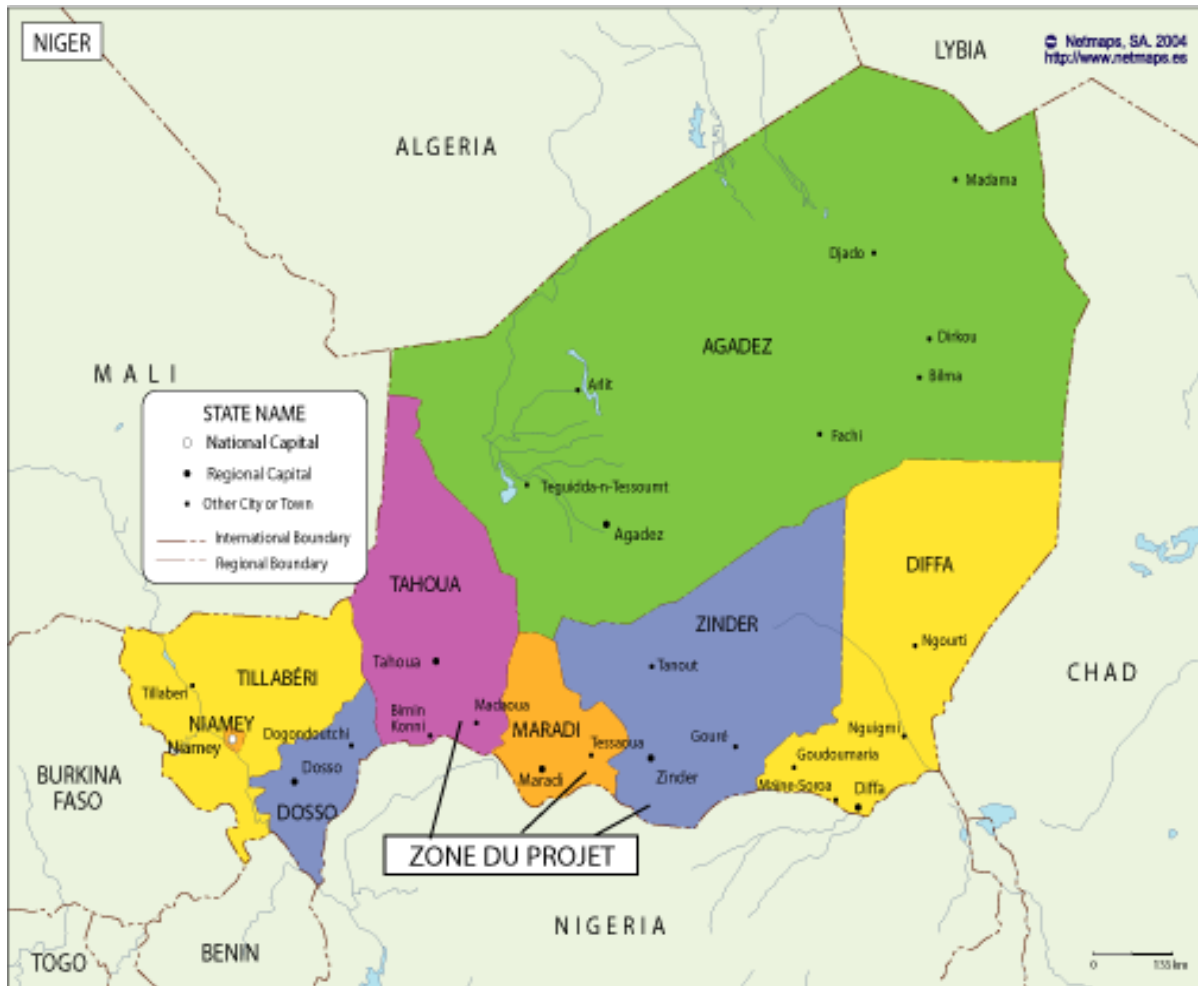
Major Related Projects Financed by the Bank and Other Development Partners

Niger's development depends largely on aid from external partners including the Bank Group. These partners make a significant contribution to the State's operating budget through budget support and ensure the execution of almost all development and capacity-building projects. The details are presented in Volume II of the report.

Priority Areas	Donors with On-going Operations	Comments
<u>Productive sector</u> Agriculture, forestry, stockbreeding, fisheries, trade, tourism and handicraft	<u>Lead agency:</u> European Union for the rural sector (agriculture, livestock and fisheries). <u>Other operators:</u> UNDP/WFP/EU/IFAD/ABEDA/IsDB/France/KFW/FAO/GTZ/Belgium/Denmark/Japan	- The European Union, the World Bank and the Bank support food security and the agriculture, stockbreeding and forestry sub-sectors. - The Bank, Belgium, the World Bank provide local development assistance; - IFAD supports microfinance promotion; - The Bank and IFAD complement each other in agricultural sector rehabilitation.
<u>Social sector</u> Education and health, gender	<u>Lead agency:</u> France for education <u>Other operators:</u> World Bank, ADB/ADF, France, AFD /ADF/IDA/IsDB/EU/UNDP/France/Japan/Switzerland/UNFPA/Canada/Denmark/UNICEF/UNDP/WFP/UNFPA/GTZ/KFW/Holland/OXFAM <u>Lead agency:</u> Belgium for health; Spain for gender <u>Other operators:</u> ADB/ADF, France, EU, Japan, UNFPA, WHO, Luxemburg, World Bank.	- Synergy exists between the World Bank, ADF, UN System agencies and bilateral donors. However, coordination is firmly established and maintained in the area of education.
<u>Infrastructure and public utilities</u> Public works, mines, industry, water, energy, sanitation and town planning	<u>Lead agency:</u> European Union (Transport) : Switzerland (water supply) <u>Others:</u> ADB, EU, IDA, France, UNDP, WADB	The main partners operating in this sector are the World Bank, the European Union and the ADB.
<u>Cross-cutting issues</u> Women's empowerment, governance, decentralization, capacity-building	<u>Lead agency:</u> France (local governance) : UNDP (capacity-building) <u>Other operators:</u> ADF, IDA, AFD Germany, Switzerland, IMF-Afritac, Afristat, World Bank, French Cooperation, Belgium, AFD, UNDP	Actions need to be coordinated by the authorities in this sector
<u>Economic reforms</u> Reform support and debt relief	<u>Lead agency:</u> IMF (macroeconomic framework) : World Bank (structural reforms) IMF, IDA, ADF, EU, France, Belgium, WADB, Paris Club countries	Close coordination is maintained.
<u>Multinational/Shared Niger Basin Vision</u> Priority investment programme of the NBA	<u>Lead agency:</u> World Bank EU, France, Canada, ADB with the NBA and executing agency.	Close coordination is maintained under the NBA 2008-2012 priority investment programme
Kandadji Programme	<u>Lead agency:</u> African Development Bank BIB/OFID/ABEDA/KFAED/WADB/BIDC/SDF/ABU DHABI	Close coordination is maintained.

Source: Table prepared by Bank experts from collected information.

Map of the project area



This map has been prepared by the African Development Bank Group for the convenience of the readers of the report to which it is attached. The denominations used and the boundaries shown on this map do not imply on the part of the Group and its affiliates, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries..