



AFRICAN DEVELOPMENT FUND

CHAD: NATURAL RESOURCES MANAGEMENT PROJECT AND DEVELOPMENT IN THE SUDAN REGION (NRMP)

PROJECT APPRAISAL REPORT FOR A SUPPLEMENTARY LOAN December 2010

Appraisal Team	Mr. V. GUINEO	Rural Dev. Expert	TDFO	Ext. : 6606
	Mr. A. DAGAMAISSA	Principal Forestry Expert	OSAN.4	Ext. : 2495
	M. L. GBELI	Senior Ag.Economist	OSAN.4	Ext : 3646
	Mr. Ken B. JOHM	Division Manager	OSAN.4	Ext. : 2468
	Mr. A. ABOU-SAABA	Director	OSAN	Ext. : 2037
	Mr. J. M. GHARBI	Regional Director	ORCE	Ext. : 2060
Peer Reviewers	Mrs..A SOW	Senior RI Infrast Expert	OSAN.3	Ext: 3888
	Mr. J.L. MOUBAMBA	Agric. Economist	GAFO	Ext: 6606
	Mr. S.B. TOUNKARA	CPO	CMFO	Ext. : 6822
	Mr. B. KADIATA	Agonomist	CDFO	Ext. : 6339
	Mr. S. KITANE	Rural Dev. Expert	SNFO	Ext. :-----
	Mr. M. TARHOUNI	Irrigation Engineer	OSAN.2	Ext : 2235

TABLE OF CONTENTS

EXECUTIVE SUMMARY	vi
I. INTRODUCTION	1
II. INITIAL PROJECT	1
III. PROJECT REAPPRAISED	5
3.1 Justification of the Supplementary Loan	5
3.2 Objectives and Description	6
3.3 Project Supplementary Cost and Financing Arrangements	6
3.4 Implementation Arrangements	6
IV. PROJECT FEASIBILITY	8
4.1 Financial and Economic Performance	8
4.2 Environmental and Social Impacts	8
4.3 Project Sustainability	9
4.4 Key risks and mitigation measures	10
V. JUSTIFICATION IN RELATION TO BANK POLICIES FOR SUPPLEMENTARY LOANS	10
5.1 Justification with regard to the General Conditions	10
5.2 Justification with regard to Specific Conditions	10
VI. CONCLUSIONS ET RECOMMENDATIONS	11
6.1 Conclusions	11
6.2 Recommendations	11

Currencies and Exchange Rates
(November 2010)

Currency Unit	=	FCFA
1 UA	=	744.049 FCFA

Fiscal Year

January 1–Decembre 31

Weight and measures

1 ha	=	10.000 m ²
1 ha	=	2,47 acres
1 ton (T)	=	1.000 kg
1 kilogramme (kg)	=	1.000 grams

Abbreviations and Acronyms

BADEA	:	Arab Bank for Economic Development in Africa
IsDB	:	Islamic Development Bank
LNRM	:	Local Natural Resources Management Committee
PIU	:	Project Implementation Unit
LSC	:	Loans and Savings Cooperative
VNRM	:	Village Natural Resources Management Committee
BD	:	Bidding Document
CSP	:	Country Strategy Paper
ADF	:	African Development Fund
CARID	:	Chad Agronomic Research Institute for Development
ONDR	:	National Rural Development Agency
NRMP	:	Natural Resources Management Project

Project Information

Client Information

BORROWER	:	Republic of Chad
IMPLEMENTING AGENCY	:	Ministry of Agriculture and Irrigation

Financing Plan

Sources	Amount	Funding Instrument
ADF	4.27 UA Million	ADF Loan
ADF	2.00 UA Million	ADF Grant
BADEA	7.94 UA Million	Loan
IsDB	8.80 UA Million	Loan
GOVERNMENT	2.05 UA Million	Counterpart Fund
BENEFICIARIES	0.60 UA Million	
COUT TOTAL	25.66 UA Million	

Important Bank financial information

Amount of Supplementary Loan	9.57 UA Million (7.120 Billion CFAF)
ERR	18.8%

Duration – Majors Steps (expected)

Approval of Concept Note	:	December 2010
Approval of Supplementary Funding	:	December 2010
Last Project Disbursement	:	December 30, 2012
Project Completion Date	:	December 30, 2013

REPUBLIC OF CHAD
Project Simplified Result-based Matrix

CHAD : Natural Resources Management Project (NRMP)						
PURPOSE OF THE PROJECT: To increase productivity of natural resources in the Sudanian Region						
RESULTS CHAIN		PERFORMANCE INDICATORS			MEANS OF VERIFICATION	RISKS AND MITIGATION MEASURES
		INDICATORS (Including CSI)	BASELINE	TARGET		
IMPACT	Contribute to food security	1. Reforestation ratio	TBD	25%	Annual Agricultural Statistics Report	
		2. Anti-erosion works ratio	TBD	15%		
OUTCOMES	1. Productivity of natural resources increased through land area rehabilitation, development and protection	1. Change in size of area	150 ha	2.350 ha	Annual Agricultural Statistics Report	Risk: Insufficient ownership of the project Mitigation Mesures: Participatory approach and sensitization activities to raise awareness and promote ownership
	2. Productivity of natural resources increased through improved crop yield	2. Shift in crop yield	5 T/ha	7 T/ha		
OUTPUTS	1.1 Committees established at village and Chiefdoms levels	1.1 Number committees established at chiefdom and village levels	0 and 0	100 and 1,000	Progress reports	Risk: delays in project implementation and inadequate mobilization of counter-part resources Mitigation Mesures: Participatory approach and government commitment in mobilization counterpart resources is condition prior to first disbursement
	1.2 NRM Committees organized at village and Chiefdoms levels	1.2 Number of workshops organized at chiefdom and village levels	0	200	Training reports	
	1.3 Leaders of farmers organizations trained	1.3 Numbers or farmers organization leaders trained	0	1,800	Cropping season reports	
	1.4 NRM plans established at village and Chiefdoms levels	1.4 Number of NRM plans established at chiefdom and village levels		100 and 1,000	NRM reports	
	1.5 Seed producing farmers trained	1.5 Number of seed producing farmers trained		90	Quarterly progress report	
	1.6 Workers skilled trained for maintenance of agricultural equipment	1.6 Numbers skilled workers trained		90	Audit reports	

1.7 Farmers trained in NRM techniques	1.7 Number of farmers trained in NRM techniques		75		
1.8 Study tours and experience exchange trips effected	1.8 Number of study tours organized		2,250		
2.1 Rice growing land plots rehabilitated and used	2.1 Size of rice growing plots rehabilitated and used		2,350 ha		
2.2 Performing crop seed varieties are made available for farmers	2.2 Number of trials and studies undertaken, number of technological packages disseminated		6,200 trials and 12 studies, 37 TPD		
2.3 Seedlings are made available for farmers	2.3 Quantity of performing crop seeds produced		150T		
2.4 Rain-fed and irrigated crop yields are increased	2.4 Quantity of seedlings produced		10,000		
2.5 Community forests created, protection and protection and fire-breaks established	2.5 Number of ha of community forest plantation created		500 ha		
2.6 Degraded lands are reclaimed and soil fertility is restored	2.6 Number ha of degraded land reclaimed and of soil restored		1,000		
2.7 Dam slopes are protected from erosion	2.7 Length of dam slope protected		33 km		
2.8 Plot A rice land are rehabilitated and	2.8 Size of plot A rice land rehabilitated		3,350 ha		
2.9 Neighboring populations are protected from Logone river flooding	2.9 Length of dam constructed		73 km		
2.10 Technical feasibility studies and bidding documents of the Bongor dam and the hydro-agricultural land development	2.10 Number of feasibility studies completed and bidding documents prepared		1 and 1		
3.1 Project Management is effective	3.1 Progress in annual work program implementation				

ACTIVITIES BY COMPONENTS	<u>INPUTS BY COMPONENTS (Million UA)</u>	
	Component A : Institutional Capacity Building	A:
Component B : Natural Resources Productivity Improvement	B:	18.91
Component C : Project Management	C:	2.25

EXECUTIVE SUMMARY

1. The Chad natural resources management project began its operations in 2006 and aims primarily to ensure a sustainable increase in the productivity of the natural resources. It is a practical response to the problem of food insecurity which the country is often confronted. The Chadian agriculture is essentially dependent on climatic conditions and this has resulted in low agricultural production. In the absence of sustainable management of agricultural land, the project area is facing increased degradation of soils. Tree planting activities, the actions of erosion control and land reclamation and those of water and soil conservation will recover degraded soils and ensure their fertility.

2. The NRMP project has received funding from several donors. This is an ADF loan amounting to UA 4.27 million, an ADF grant amounting to UA 2.0 million, a loan from the Arab Bank for the Development of Africa (BADEA) an amount of 7.94 million UA, a loan from the Islamic Development Bank (IDB) for an amount of UA 8.8 million and the Government of Chad and beneficiaries for a total of 2.65 million UA. The total project cost is UA 25.66 million of which 58.8% is devoted to hydro-agricultural works (3,350 hectares), construction of the dam (73 km), construction of a trail connecting the areas of production to consumption centers and community infrastructures. The project has launched the bidding documents for the construction of small village perimeters and that of the dam, but the amount allocated to these works is insufficient, following the updating of technical studies and costs. This is why the Government of Chad introduced a request for a supplementary loan of UA 9.57 million, representing the balance of the country's allocations on ADF XI.

3. The additional funding is intended to Pillar II in the 2010-2014 CSP of Chad aiming at the development of basic infrastructures to create the conditions for sustained growth and diversified economy. It is also aligned with certain activities such as water management for agricultural production. The supplementary loan will meet the financing gap found to build the entire dam and achieve the planned 8 small village perimeters (500 ha). The Government will contribute to the financing gap for an amount of UA 3.31 million.

4. Management recommends that the Board approve the proposed supplementary loan for an amount of UA 9.57 million to the Government of the Republic of Chad to allow the Natural resources project (NRMP) to achieve its original goals, according to the conditions outlined in this report.

CHAD

NATURAL RESSOURCES MANAGEMENT PROJECT (NRMP).

Management submits this report and recommendations on a proposal for granting a supplementary loan amounting to UA 9.57 million to the Republic of Chad to finance the natural resources management project (NRMP).

I. INTRODUCTION

1.1 The natural resources management project (NRMP) aims mainly at food security. The specific objective is to ensure a sustainable increase in the productivity of natural resources in the Sudan region. After four (4) years of project implementation, the NRMP has begun to realize the hydro-agricultural infrastructures, namely the rehabilitation of 3,350 ha of lowlands in the perimeters of Bongor (1,000 ha), Satégui-Deressia (1,850 ha) and small villages perimeters along the Djoumane-Lai axis (500 ha). After the updating of the technical studies and the preparation of the works documents of the dam in the rice production areas and for the protection of villages along the Logone river on 57 km, it emerged a financing gap of 9.58 billion FCFA between the available funding from BADEA and the new costs.

1.2 The construction of the Bongor dam is very important to the achievement of the NRMP objectives. Without it, the rehabilitation of 1,000 ha of the Bongor perimeter could not be done and the local population in the Logone neighborhood risk to abandoning their villages because of damage caused each year by floods. The tender for the compartments M1 and M2 of the Satégui-Deressia perimeter was launched and BADEA approved the award of a contract for 1,700 ha. Works have started. The resources available for the rehabilitation of the dam and the management of the Bongor production area and the small village perimeters are not sufficient to fund all the works. In this context, the Government of Chad has introduced in late October 2010 at the Bank, a request for a supplementary funding of 9.57 million UA, the remainder of the ADF-XI allocation for the country. The proposed supplementary funding addresses directly the second pillar of the 2010-2014 CSP for Chad related to the strengthening of rural infrastructures contributing to water resources management for agricultural production.

II. INITIAL PROJECT

2.1 Description and background information

2.1.1 The NRMP with an estimated duration of six (6) years will be implemented following three (3) main components: (i) Component A: Institutional Capacity Building (ii) Component B: Improving the productivity of natural resources, and (iii) Component C: Project Management.

2.1.2 The following table identifies the key basic data of the project.

Table 1: General Information

<p>Objectives and components :</p> <p>The project aims at contributing to food security. The project specific objective is to increase productivity of natural resources in the Sudanian region. The project is articulated around three (3) components: Strengthening of institutional capacities, natural resources productivity improvement and project management.</p>	Loan N°	2100150009645
	Grant N°	2100155004669
	Date of approval	24/04/2005
	Date of signature	19/05/2005
	Date of loan effectiveness	12/02/2006
	Date of grant effectiveness	19/05/2005
	Date of 1 st disbursement	04/09/2006
	Initial completion date	30/12/2012
	Total Project Cost	25.66 Million UA
	ADF loan amount	4.27 Million UA
	ADF grant amount	2.00 Million UA
	BADEA loan amount	7.94 Million UA
	IsDB loan amount	8.80 Million UA
	Government + beneficiaries	2.65 Million UA
	Rate of disbursement	
	ADF Loan	16.95%
	ADF Grant	56.77%
BADEA Loan	3.19%	
IsDB Loan	13.04%	
Gouvernement and Beneficiaries	13.51%	

Table 2 : Summary Project Formulation

N°	COMPONENTS	COST (Million UA)	DESCRIPTION
01	Component A : Institutional Capacity Building	4.50	<p>Strengthening capacities in management of public institutions, communities and existing loans & savings cooperatives (LSC), training, provision of extension services to producers, equipment and technical assistance thru:</p> <ul style="list-style-type: none"> ❖ Support to establishment of 100 and 1,000 NRM committees at Chiefdom and village levels, respectively; ❖ Organization of 200 NRM chiefdom and village workshops; ❖ (i) Methodological assistance and training of 3,600 professional organizations' leaders (20% of which are females) in formulation, implementation, monitoring and evaluation of NRM projects at village chiefdom levels, (ii) Organization of 200 workshops aiming at the formulation of 1,000 and 100 village and chiefdom NRM management plans, respectively; ❖ Technical assistance in promotion of savings and loans associations; and ❖ Capacity building in NRM project and program planning, implementation and supervision of projects and programs NRM for agriculture sector institutions, thru through computer equipment, procurement of vehicles and training of 4,500 rural producers' organizations leaders
02	Component B : Natural Resources Productivity Improvement	18.91	<p>Sustainably improvement of productivity in the main farming production systems (agro-forestry-pastoral through improvement soil fertility, introduction of improved planting materials and production security, including such activities as:</p> <ul style="list-style-type: none"> ❖ Rehabilitation and development of 3,350 ha of lowland in the plot A of Bongor (1,000 ha), Satégui-Deressia (1,850 ha) and 500 ha of village irrigation schemes of the road Djoumana-Lai;

N°	COMPONENTS	COST (Million UA)	DESCRIPTION
			<ul style="list-style-type: none"> ❖ Undertaking an intensive participatory research based on 6200 on-farm trials; ❖ Soil and water conservation with green cover of 33,000 m of embankment dams, bunds filter, hedges, windbreaks and firebreaks; ❖ Improvement of soil fertility by using organic farming based on different types of bio-techniques, such as agroforestry and crop-livestock integration on 7500 ha; ❖ Protection of 1,000 ha through soil and water protection and restoration activities; ❖ introduction of improved varieties of main crops grown in the area; ❖ production of 350 tons of breeder seeds based on MOU with the Chad Agronomic Research Institute for Development (CARID) and 5,000 tons with a network of private producers; ❖ Undertaking of tree planting over 500 ha, protection of 2,000 ha, establishment of 200 km of firebreaks, 100 biogas units and 10,000 units of demonstration of improved stoves.
03	Component C : Project Management	2.25	Establish an effective management system aiming at preparation and monitoring of required procurement processing, coordination of activities, including those implemented by partner institutions by agreement or contract, as well as training of national staff involved in the project
	OVERALL PROJECT	25.66	

2.2 Cost and financing

2.2.1 The total estimated cost of NRMP is UA 25.66 Million (19.09 Billion FCFA), excluding taxes and customs duties, of which 17.87 Million UA (13.29 Billion CFAF) in foreign currency and 7,80 Million UA (5.80 Billion FCFA) in local currency. The cost in foreign currency is 68.73% of total costs excluding taxes. The project cost also includes a provision for financial and physical contingencies estimated at 9.7% of total cost. Financial contingencies have been estimated on the basis of annual local inflation on the share of local costs, and international inflation on the share of the foreign cost. The summary of project costs is captured in Tables 3 and 4 below:

Table 3: Summary Cost by Component of Chad NRMP

COMPONENTS	Million CFAF			Million UA			% Base Cost	% For. Exch.
	Local Currency	Foreign Exchange	TOTAL	Local Curre.	Foreign Exch.	TOTAL		
Institutional Capacity Building	914.06	2 132.80	3 046.86	1.23	2.87	4.10	17.53	70.00
Natural Resources Productivity Improvement	4 106.18	8 725.62	12 831.80	5.52	11.73	17.25	73.75	68.00
Project Management	426.04	1 095.53	1 521.57	0.57	1.48	2.05	8.76	72.00
TOTAL BASELINE COST	5 446.27	11 953.96	17 400.24	7.32	16.08	23.39	100.00	68.73
Physical Contingencies	245.08	576.35	821.43	0.33	0.77	1.10	4.70	70.04
Financial Contingencies	108.93	761.75	870.68	0.15	1.02	1.17	5.00	87.48
TOTAL	5 800.28	13 292.06	19 092.34	7.80	17.87	25.66	109.71	69.64

Table 4: Summary Cost by Expenditure Accounts of Chad NRMP

EXPENDITURE ACCOUNTS	Million CFAF			Million UA			% Base Cost	% For. Exch.
	Local Currency	Foreign Exchange	TOTAL	Local Curre.	Foreign Exch.	TOTAL		
INVESTMENT COSTS	4 908.67	10 955.33	15 864.00	6.60	14.72	21.32	91.15	69.03
WORKS	3 369.00	7 861.00	11 230.00	4.53	10.56	15.09	64.51	70.00
GOODS	397.25	1 191.75	1 589.00	0.54	1.61	2.14	9.15	75.00
SERVICES	1 142.42	1 902.58	3 045.00	1.54	2.55	4.09	17.49	62.32
RECURRENT COSTS	537.60	998.40	1 536.00	0.72	1.34	2.06	8.81	65.00
TOTAL BASELINE COST	5 446.27	11 953.96	17 400.24	7.32	16.08	23.39	100.00	68.73
Physical Contingencies	245.08	576.35	821.43	0.33	0.77	1.10	4.70	70.04
Financial Contingencies	108.93	761.75	870.68	0.15	1.02	1.17	5.00	87.48
TOTAL	5 800.28	13 292.06	19 092.34	7.80	17.87	25.66	109.71	69.64

2.2.2 The Project financing will be jointly provided by Government of Chad and the beneficiaries: UA 2.65 million, the Arab Bank for Economic Development in Africa (BADEA): UA 7.94 million, the African Development Fund (ADF): loan of UA 4.27 million and a grant of UA 2.00 million, and the Islamic Development Bank (IsDB): UA 8.8 million.

2.3 Status of Implementation

2.3.1 Achievement of conditions attached to the project: The Loan Agreement with the ADF was signed on 19th May 2005 and entered in force on 12th February 2006. The start of the project has been delayed by the time taken for the satisfaction of conditions precedent to first disbursement that intervened on 4th September 2006, 1 year and 5 months after project approval. These conditions were four in number and were all met. As for "other conditions", they were: (i) submission, six months after the loan entry into force of the loan projects of cooperation agreements to be concluded with the ITRAD for the implementation of participatory research and production of selected seeds, (ii) submission, six months after loan effectiveness, of the draft collaboration agreements to be concluded with ITRAD for the implementation of the participatory research and the improvement of selected seeds; (ii) submission; six months after loan effectiveness, the deed granting user's rights to associations of rice growers farming the 2,350 ha to be rehabilitated in the irrigation areas of Bongor, Satégui-Deressia and the village irrigation areas along the Djoumane-Lai axis to rice producers associations of these areas, (iii) the transmission, twelve months after the loan effectiveness, of the rehabilitation program and financing plan for the Djoumane-Lai highway; and (iv) the rehabilitation of the Djoumane-Lai highway, three years after the first disbursement. The first three other conditions were met and for the fourth, the works for the rehabilitation of the Djoumane-Lai highway should start during the fourth quarter of 2010.

2.3.2 **Current implementation status of the project activities:** The first three years of the project helped to prepare the various tender documents for the procurement of equipment, the rehabilitation of the project headquarters, the recruitment of consulting engineers and the technical assistance. It also helped to update the technical studies and to prepare the tender documents for various rehabilitation works of hydro-agricultural infrastructures. The recruitment of an operator responsible has been done for the establishment of one hundred (100) cantonal committees and one thousand (1000) village committees for the management of natural resources. Some activities were conducted such as the rehabilitation of the project headquarters in Lai, the procurement of vehicles, computers and office equipment. The contracts for the

rehabilitation of 1,700 hectares of the M1 and M3 perimeters in Satégui-Deressia and the 500 ha of small village perimeters were approved. Works are starting.

2.3.3 Following the midterm review conducted in September 2010, among the results include six (6) contracts performed, twelve (12) contracts approved, one (1) signed agreement, and over 120 hectares sown by ITRAD for the production of basic seed and pre-base. The supervision of seed producers will be carried out under the agreement signed with ITRAD. The baseline of the project area was established by ONDR, the 100 cantons and 1,000 villages have been identified for the establishment of the natural resources management committees, 52 COOPECs whose capacity should be strengthened were identified after the diagnostic study. The training of group leaders, the organization of workshops and the mentoring of producers will be insured under the contract signed with ONDR. The study of the environmental and social management plan (ESMP) was conducted with support from the technical assistance. For the hydro-agricultural infrastructures to be financed by BADEA, contracts for the rehabilitation of the M1 and M2 perimeters in Satégui-Deressia were awarded. For the financing from the IDB, the results of the tenders for the socio-economic infrastructures and the management of the eight village irrigation perimeters are awaiting approval. The contract for the rehabilitation of the Djoumane-Lai highway, to be financed by the Government, was awarded to a Chinese company and the work will start during the fourth quarter of this year. Some companies, beneficiaries of contracts, are now setting up their bases for the installation of their personnel and equipment. The rehabilitation of the PIU offices in Lai and the N'Djamena Antenna has been fully executed and the works for the accommodation of the personnel are on-going.

III. PROJECT REAPPRAISED

3.1 Justification of the Supplementary Loan

3.1.1 The NRMP was evaluated in 2004. The technical studies for the rehabilitation of hydro-agricultural infrastructure had been completed before the project evaluation. At startup, it was necessary to refresh their view of the many changes over the years and new needs. After the updating of technical studies and the cost of working with the Consulting Engineer hired for that purpose, it emerged a financing gap on the construction of the dam and rehabilitation of those small village irrigation schemes of an amount of 9.58 billion. This is the construction of the dam-Bongor Katoa and development of eight boundaries between villagers and Djoumana Lai, whose loan will fill some additional funding. Without the supplementary loan, the Bangor dam will not be built, the A gates and small perimeters of the villagers will not be rehabilitated and the production targets will not be met. Also, if the dam is not constructed, whole villages may be washed away by floods.

3.1.2 **Acuteness of the problems associated with climate change:** In the design and implementation NRMP, special attention was paid to the sustainable management of natural resources and adaptation to climate change. The drought in Chad for decades has altered both water regime, the profile of plant formations but also the quality of soil by gradually reducing the productive capacity of the medium. In recent years, Chad, like other Sahelian countries, knows floods almost every year. Regarding the dam Bongor-Katoa, it was built in 1953 to protect the hydro-agricultural trap A and protect the local population who tend to immigrate to Cameroon in case of flooding. But since its construction, no regular maintenance has been carried out and the dam is now completely degraded and no longer responds to any technical standard to encourage production and to protect crops and the local populations.

3.2 Objectives and Description

3.2.1 The supplementary loan will cover a period of 2 years (2011-2012) and cover the same initial geographical areas, i.e. the sudanian zone of Chad. Given the focus is more on rural infrastructure, retained in the new CSP 2011-2014 of Chad, the objectives assigned to the NRMP through the supplementary funding will be the same as the original project. That is, the project will contribute to food security by increasing productivity of natural resources in Sudan zone based on sustainable management of these resources.

3.2.2 The supplementary loan essentially targets the Component “B -improved productivity of natural resources.” The main activities covered by the supplementary financing are summarized as follows: (i) rehabilitation of the Bongor Katoa dam to equip and protect 1,000 hectares of rice paddies ‘A’ of Bongor and rehabilitation of 500 ha of 8 small village perimeters along the Logone located on the axis Djoumana-Lai. The initial matrix of the project was revised to conform to the new results-based log-frame adopted by the Bank

3.3 Project Supplementary Cost and Financing Arrangement

3.3.1 The additional cost, excluding taxes and customs, is estimated at CFAF 9.58 billion, or about 12.88 million of which UA 8.88 million (6.37 billion FCFA) in foreign cost, UA 4.00 million (3.21 billion FCFA) in local currency. The foreign cost is 68.73% of total costs excluding tax. The project cost also includes a provision for financial and physical contingencies estimated at 9.7% of the total cost. Financial contingencies have been estimated on the basis of annual local inflation on the share of local costs and international inflation, on the foreign cost share. The summary of project costs is captured in Tables 5 and 6 below:

Table 5: Summary Cost by Component of Chad NRMP

COMPONENTS	Million CFAF			Million UA			% Base Cost	% For. Exch.
	Local Currency	Foreign Exchange	TOTAL	Local Curre.	Foreign Exch.	TOTAL		
Institutional Capacity Building	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural Resources Productivity Improvement	3 108.93	5 704.61	8 732.91	3.76	7.98	11.74	100.00	68.00
Project Management	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
TOTAL BASELINE COST	3 028.30	5 704.61	8 732.91	3.76	7.98	11.74	100.00	68.00
Physical Contingencies	125.75	284.69	410.45	0.17	0.38	0.55	4.70	69.36
Financial Contingencies	55.89	380.75	436.65	0.08	0.51	0.59	5.00	87.20
TOTAL	3 209.94	6 370.06	9 580.00	4.00	8.88	12.88	109.71	68.93

Table 6: Summary Cost by Expenditure Accounts of Chad NRMP

EXPENDITURE ACCOUNTS	Million CFAF			Million UA			% Coût % Base Cost	% For. Exch.
	Local Currency	Foreign Exchange	TOTAL	Local Curre.	Foreign Exch.	TOTAL		
INVESTMENT COSTS	3 028.30	5 704.61	8 732.91	3.76	7.98	11.74	100.00	68.00
WORKS	3 028.30	5 704.61	8 732.91	3.76	7.98	11.74	100.00	68.00
GOODS							--	--
SERVICES							--	--
RECURRENT COSTS							--	--
TOTAL BASELINE COST	3 028.30	5 704.61	8 732.91	3.76	7.98	11.74	100.00	68.00

EXPENDITURE ACCOUNTS	Million CFAF			Million UA			% Coût % Base Cost	% For. Exch.
	Local Currency	Foreign Exchange	TOTAL	Local Curre.	Foreign n Exch.	TOTAL		
Physical Contingencies	125.75	284.69	410.45	0.17	0.38	0.55	4.70	69.36
Financial Contingencies	55.89	380.75	436.65	0.08	0.51	0.59	5.00	87.20
TOTAL	3 209.94	6 370.06	9 580.00	4.00	8.88	12.88	109.71	68.93

3.3.2 The ADF supplementary loan is 9.57 million UA and will cover about 74.3 % of the total gap of additional funding needed, amounting to 7.13 billion CFAF. The Government's contribution will amount to about 2.45 billion FCFA, or about 3.31 million UA. A summary of the project costs financing estimates by source of funding is shown in Table 6 below:

Table 6: Estimated Financing Plan

FINANCING SOURCE	Billion CFAF			Million UA			Percent
	Local	Foreign	Total	Local	Foreign	Total	
ADF Loan	1.00	6.13	7.13	1.34	8.23	9.57	74.3
Gouvernement	2.21	0.24	2.45	2.66	0.65	3.31	15.7
Total	3.21	6.37	9.58	4.00	8.88	12.88	100.0

3.4 Implementation Arrangement

3.4.1 **Implementation Modalities:** The Implementation Unit of NRMP under the Ministry of Agriculture and Irrigation will be in charge of the implementation of the supplementary loan. The operational arrangement currently in place will remain unchanged, both at the national coordination as well as at the regional level (Offices in the 5 regions). The Steering Committee and Regional Action Committees remain the same, with regard to their missions and their compositions. The external monitoring and evaluation will be under the responsibilities of the Permanent Unit of the Mechanism for Monitoring of the Sectoral Body for Rural Development, the Ministry of Economy and Planning and the Ministry of Agriculture and Irrigation, in line accordance with the initial arrangement. They will provide the technical and financial monitoring of the project, organize periodic supervision missions on the ground and produce mission reports.

3.4.2 **Procurement:** Procurement of all goods, works and consultant services financed from ADF resources will be undertaken according to the relevant Bank rules and procedures, and the use of standard documents tendering Bank. In compliance with these rules and procedures (May 2008 edition), modes of procurement of works, goods and services that had been adopted for the initial loan of the project remain unchanged. The supplementary loan is fully intended to fund work for which the tender bid documents have already been prepared.

3.4.3 **Disbursement:** Disbursement of supplementary loan resources will be made through direct payments to bid winning enterprises, as the entire supplementary loan is to finance rehabilitation works of the dam and the development the of Bongor A plot and small irrigated village perimeters. Regarding the financial management of the supplementary loan, the administrative and computerized accounting system implemented under the original loan will be used, but the two special accounts will be separated (the original loan and additional financing of the NRMP). The administrative, financial and accounting Manual approved by the Bank will be reviewed and amended to include specific aspects relating to the management of supplementary loan.

3.4.4 **Audits:** Keeping the project accounting records will continue to be subject to routine control in place from of the control structures of the state. An external audit firm will be

recruitment to conduct the annual audit in accordance with the Bank rules and procedures. The project accounts audit will also cover the supplementary loan.

IV. PROJECT FEASIBILITY

4.1 Financial and Economic Performance

4.1.1 **Financial Performance:** The financial analysis focuses on two production models: (i) the model including irrigated rice and sorghum crops as a major recession; and (ii) the rain-fed model with major crops like sorghum, millet, maize and peanuts. The analysis of these two models illustrates the productivity of different type crops and the diversity of situations encountered in the project area through increased use of adapted technological packages. One of the assumptions is that producers use family labor for all crops. The outcome of the analysis leads to the conclusion that the income of farmers will increase with the project.

4.1.2 On the basis of crop budgets and farm management results per hectare, the net margin of shifts from 320,250 to 541,800 FCFA for rice (69%), from 132,000 to 198,000 FCFA (50%) for millet, 30,000 to 39,000 CFA francs for sorghum (30%), from 37,500 to 50,000 CFA francs for corn (33.33%) and from 44,500 to 67,000 CFA francs for peanuts (50.56%), from the situation without project to completion of the land development.

4.1.3 **Economic Analysis:** The economic analysis is carried-out based on the overall assessment of direct economic benefits of the project. These economic benefits are quantified by comparing the situation "without project" and "with project" to identify additional benefits resulting from the implementation of the project and especially by adding the additional loan. Benefits considered include mainly the values of additional production of cereals has benefited from inputs of improved seeds. The assessment project's contribution to the national economy is based on the following assumptions: (i) the assessment of net benefits of the project is estimated over a period of 20 years, (ii) expenses include costs of investment, maintenance costs and recurrent costs related to infrastructure, the cost of equipment replacement and selected crop prices (investment costs, equipment replacement and crop prices are used in constant prices, excluding taxes, duties of customs, physical contingencies and price contingencies), (iii) the amortization period of hydro-agricultural infrastructures is 40 years, hence the residual value at the end of the 20-years period; and (iv) prices used for rice is the price of import substitution.

4.1.4 The project will contribute, at full operational capacity, to increased production and increased income. The total additional revenue that will so be generated from at the level of agricultural production alone will be 2.9 billion FCFA per year at full operation. The project will also contribute to the creation of 9,600 permanent and temporary jobs, equivalent to an annual payroll of 2.4 billion FCFA. Based on the above assumptions, the economic rate of return (ERR) of the project is estimated at approximately 18.8%.

4.2 Environmental and Social Impacts

4.2.1 **Environment:** The NRMP is classified as Category II in accordance with Bank guidelines on environmental assessment. The project was prepared with the support of technical assistance, and an environmental management plan (ESMP) is being implemented during project execution. The negative impacts identified are those related to rehabilitation of irrigation schemes, production of seeds, and management of irrigation water. The ESMP

developed has planned mitigation measures that can be applied especially by farmers who will be responsible for the management of irrigation water. The construction of the dam, which will protect the villages against the flooding, will also reduce water-borne diseases such as cholera which is common in flooded areas

4.2.2 Adaptation to climate change: Project interventions in response to climate change are based on a two-tiered approach including: (i) the implementation of activities involved in reducing emissions of greenhouse gases (the measures mitigation related activities including community reforestation, development of grazing land, woodland regeneration and forest enclosures; and (ii) the promotion of irrigated crops from improved seeds that protect farmers from climatic vagaries. Combating against erosion through land reclamation works and (LRW) and soil and water conservation (SWC) provided under the project, are measures that can also adapt to climate change.

4.2.3 Gender and social: Women are largely involved in the implementation of the NRMP and will continue to be closely associated with the implementation of all project activities. They constitute a prime target in rice production, gardening **groups**, for training, participation in the management of facilities and receives monies from the SACCO supported by the project. They also participate in the work of seedling production, planting and maintenance, as well as in the preservation and processing garden produce with the support of the project. Traditionally, women are the main players in agricultural production in the intervention area of NRMP. By encouraging participation and beneficiary access to decision-making, operations and investment operation and maintenance of infrastructure on the one hand, and, secondly, by increasing the organizational capacity of communities and producer groups, the project plays a strategic role in the development of social capital and satisfaction in a process of sustainable economic needs of rural populations of the four regions covered by the Project.

4.3 Project Sustainability

4.3.1 Recurrent Costs: Recurrent costs generated by the project's physical achievements relate to the maintenance of hydro-agricultural infrastructures and operating costs associated with plant and animal production. The maintenance of hydraulic facilities is supported by the local people in the form of collective work and the payment of fees fueled by contributions from producers groups. Committees are set up in each perimeter to ensure the daily management of the perimeter. The project, through the support in structuring and organizing communities, helps to train users in management and maintenance. Expenses are calculated according to the services charges (inputs, plowing, maintenance, depreciation of infrastructure, etc.), some of which are supported by operators in the form of physical work and others by the payment of fees set annually.

4.3.2 Sustainability: The hydro-agricultural infrastructures will be rehabilitated to be works that have already functioned before and do not constitute new technologies for the farmers in the project area. Most users of these facilities are former operators. For the sustainability of the achievements, the project has planned several training sessions for both operators and technicians responsible for supervision. The local support provided by the project through active mentoring, part of an approach aimed at creating favorable conditions for support by operators of the facilities desired and implemented. The project also showed that the massive involvement of women in project activities (rice and vegetables production) and their reliability in the collective management of affairs, were also pledges of sustainability of the envisaged measures.

4.4 Key risks and mitigation measures

4.4.1 The potential risks that were identified during the appraisal of NRMP were; in the one hand, the continuation of economic reforms, price stability, the rural exodus, the availability of financial resources and on the other hand, climatic conditions that are not favoring agricultural production. For further economic reforms, the Government has embarked on a process that continues. The risk of losing agricultural labor in favor of the oil industry will be mitigated by the economic and social policy of the Government which holds agriculture and rural development among the priority sectors for investment. The Government's strategy aims to make agriculture profitable and competitive enough. The Government has shown its willingness to take on the budget part of the cost of the project works. To mitigate the risk associated with climatic conditions, the project will undertake the rehabilitation of existing production compartments and undertake actions for the sustainable management of natural resources and environment. The sub-compartment of the production areas in smaller hydraulic units and the technical supervision of producers will allow better water management of the plot.

4.4.2 On the other hand, the implementation of NRMP has identified a new risk, initially underestimated, due to the time of the procurement process for goods, services and works very long in Chad for which urgent and sustainable solutions must be found. This risk will still be mitigated under the supplementary loan, because the feasibility studies and bidding documents related to facilities and infrastructure to achieve are all available, and that the project team and the authorities have pledged to accelerate the process and to address these operational constraints.

V. JUSTIFICATION IN RELATION TO BANK POLICIES FOR SUPPLEMENTARY LOANS

The proposed supplementary loan meets the general and specific conditions set out in the policies and procedures of the Bank Group for supplementary financing (ref. ADF/BD/WP/97/90 of August 11, 1997).

5.1 Justification with regard to the General Conditions

As regards the general conditions, it should be noted that: (i) the NRMP is at an advanced stage, all studies were carried out, most contracts were awarded under the limit of funding from BADEA and these works will start shortly; (ii) the amount requested for the supplementary loan (UA 9.57 million) does not exceed the allocation of ADF XI for the country, and (iii) the supplementary loan will be subject to the same service charges attributable to ADF loans and the repayment terms for ADF loans will apply.

5.2 Justification with regard to Specific Conditions

The supplementary loan also meets specific conditions set out in the policies and procedures of the Bank Group for additional funding, viz. (i) project supervision is rated satisfactory (classified project non-problematic with a rating of 2.0 out of 3); (ii) the country is eligible for ADF resources, based on the evaluation of its institutions and policies, (iii) the cost overruns are due to circumstances beyond the control of the borrower and result largely of rising commodity prices, fluctuation of the UA, the best technical options for sustainability, the many and urgent needs identified for adaptation to climate change following a participatory approach; (iv) the Government has honored its contribution under the NRMP

(about 200 million FCFA annually awarded to the project), but these contributions are not enough to cope with the cost overruns encountered; (v) the extent of works cannot be reduced without substantially affecting the project objective in terms of food security of populations affected and meeting local needs, (vi) the extent of the project cannot be reduced without affecting its ability to achieve all its objectives, particularly those related to additional production, the number of affected communities and the sustainability of investments, (vii) there are no other exogenous constraints that may hinder the completion of the project, studies related to activities carried out are available and have demonstrated the technical and financial viability of proposed interventions, and (viii) the project is economically viable and financially despite the cost overrun (see 4.1).

VI. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The NRMP, although there were delays to its launch and in its implementation, is moving towards achieving results that will contribute to food security in the project area in particular and in the country in general. The construction of 73 km of the dam along the Logone river, for which the country is requesting a supplementary loan is crucial to achieving results. The NRMP has raised many hopes for the local population and operators of the production perimeters along the Logone river. The supplementary loan will enable the project to address the financing gap found, and thus to undertake all the facilities for which studies have been updated and are available. The loan will also further boost the positive impact of ongoing activities and achieve the set goals.

6.2 Recommendations

Management recommends that the Board approve the proposed supplementary loan for an amount of 9.57 million UA to the Government of the Republic of Chad to allow the Natural resources management project (NRMP) to achieve its original goals, according to the conditions outlined in this report.

Conditions precedent to first disbursement of the supplementary loan:

The obligation of the Fund to make the first disbursement of the supplementary loan resources shall be conditional upon the fulfillment by the Borrower, in form and substance satisfactory to the Fund, of the conditions set forth below:

- (i) Provide evidence of the opening of an escrow account that the bank hosting the account shall commit to disburse all resources from account deposits solely for the purpose of the of the Project expenditures, which account will serve to receive counterpart resources to the tune of half of the total required amount (2.45 billion CFA francs) before June 30 of each year from 2011 to 2012; and,
- (ii) Submit before June 30 of each year the audit reports of project accounts, including audit reports on the supplementary loan.

**CHAD: NATURAL RESOURCES MANAGEMENT AND DEVELOPMENT IN THE
SUDAN REGION PROJECT (NRMP)**

OUTCOME OF NEGOTIATIONS

The negotiations between the delegation representing the Government of Chad and that of the African Development Bank, concerning the proposal for financing the Chad: natural resources management and development in the Sudan region project (NRMP), took place on 15 December 2010 in Ndjamena and by video conference at the ADB Temporary Relocation Agency, Tunis. These negotiations were concluded to the satisfaction of both parties.

The Chad delegation made general observations for revisions in the appraisal report and raised no objections with respect to the draft Loan Agreement and Disbursement Letter.

With revision of the report in line with these minor observations, the Chad delegation accepted the terms of disbursement of the grant and of the loans deriving from the reappraised project, as reflected in the project appraisal report.