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Report No: 1745

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 78.8 MILLION
(US$111 MILLION EQUIVALENT)

TO THE

REPUBLIC OF NIGER

FOR A

CLIMATE-SMART AGRICULTURE SUPPORT PROJECT

May 5, 2016

Agriculture Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 31, 2016)

Currency Unit = CFA Francs

CFA 576.51 = US$1
1SDR = US$1.40882

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

3N	Nigeriens Nourish Nigeriens (*Nigériens Nourrissent les Nigériens*)
AFOLU	Agriculture, Forestry, and Other Land Uses
ANR	Assisted Natural Regeneration
AWPB	Annual Work Plan and Budget
BDS	Business Development Service
BEEEI	Agency for Environmental Evaluation and Impact Assessment (*Bureau des Evaluations Environnementales et des Etudes d'Impact*)
CAIMA	*Centrale d'Approvisionnement en Intrants et Matériels Agricoles*
CAP	Community Action Program
CAP3	Community Action Program, Phase 3
CAP-RC	Community Action Project - Climate Resilience
CCAFS	Research Program on Climate Change, Agriculture, and Food Security
CCS	Communal Monitoring Committee
CIRAD	French Agricultural Research Centre for International Development (*entre de coopération internationale en recherche agronomique pour le développement)*
CPS	Country Partnership Strategy
CRAP	Subprojects Regional Approval Committee (*Comité Régional d'Approbation des Sous-projets*)
CSA	Climate-smart Agriculture
DA	Designated Account
DGA	Agriculture General Directorate
DVTT	Extension and Technology Transfer Department (*Direction de la Vulgarisation et du Transfert de Technologies*)
EFA	Economic and Financial Analysis
EIRR	Economic Internal Rate of Return
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EX-ACT	Ex-ante Carbon Balance Tool (of FAO)
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmers Field School
FIRR	Financial Internal Rate of Return

FISAN	Food Security and Nutrition Fund (*Fonds de la Sécurité Alimentaire et Nutritionnelle*)
FM	Financial Management
FMNR	Farmer Managed Natural Regeneration
GAC	Governance and Anti-Corruption
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoN	Government of Niger
GPN	General Procurement Notice
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HC3N	3N High Commission (*Haut Commissariat à l'Initiative 3N*)
ICB	International Competitive Bidding
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICSIP	Integrated Climate-Smart Agriculture Investment Plan
IFAD	International Fund for Agricultural Development
INDC	Intended Nationally Determined Contribution
INRAN	National Institute for Agronomic Research in Niger (*Institut National de la Recherche Agronomique du Niger*
IPCC	Intergovernmental Panel on Climate Change
IPPMP	Integrated Pest and Pesticides Management Plan
IRM	Immediate Response Mechanism
IRR	Internal Rate of Return
ISP	Implementation Support Plan
IUFR	Interim unaudited Financial Statement
LSMS	Living Standards Measurement Study
M&E	Monitoring and Evaluation
MCC	Millennium Challenge Corporation
MoA	Ministry of Agriculture
MSMEs	Micro, Small, and Medium Enterprises
NCB	National Competitive Bidding
NCU	National Coordination Unit
NGO	Nongovernmental Organization
NPV	Net Present Value
ODI	Overseas Development Institute
PASEC	Climate-Smart Agriculture Support Project (*Projet d'Appui àl'Agriculture moins Sensible aux risques Climatiques*)
PDC	Communal Development Plan (*Plan de Développement Communal)*
PDES	Economic and Social Development Plan (*Plan de Développement Economique et Social)*
PDO	Project Development Objective
PDIPC	Climate Information Development and Forecasting Project
PFM	Public Financial Management
PIM	Project Implementation Manual
PIU	Project Implementation Unit

PP	Procurement Plan
PRAPS	Regional Sahel Pastoralism Support Project (*Projet Régional d'Appui au Pastoralisme dans le Sahel*)
ProDAF	Family Farming Development Programme
PRODEX	Agro-Sylvo-Pastoral Exports and Markets Development Project (*Projet de Développement des Exportation des Produits Agro-sylvo-pastoraux)*
PSC	Project Steering Committee
RAP	Resettlement Action Plan
RECA	Network of Agriculture Chambers (*Réseau des Chambres d'Agriculture)*
RGAC	General Census of Agriculture and Livestock (*Recensement General de L'Agriculture et du Cheptel*)
RPF	Resettlement Policy Framework
RSU	Regional Support Unit
SESFP	Social and Environmental Safeguards Focal Points
SLM	Sustainable Land Management
ToR	Terms of Reference
TFCU	Technical and Fiduciary Coordination Unit
UNDB	United Nations Development Business
WAAPP	West Africa Agricultural Productivity Programme
WP	With Project
WPB&PP	Work Plan and Budget and Procurement Plan
WOP	Without Project

Regional Vice President:	Makhtar Diop
Country Director:	Paul Noumba-Um
Senior Global Practice Director	Juergen Voegele
Practice Manager:	Simeon K. Ehui
Co-Task Team Leaders:	Amadou Ba, Vikas Choudhary

REPUBLIC OF NIGER
Climate-Smart Agriculture Support Project

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Niger

Climate-Smart Agriculture Support Project (P153420)

PROJECT APPRAISAL DOCUMENT

Report No.: PAD1745

Basic Information		
Project ID P153420	EA Category B - Partial Assessment	Team Leader(s) Amadou Ba, Vikas Choudhary
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [X] - Fragile within a non fragile country	
	Financial Intermediaries [ ]	
	Series of Projects [ ]	
Project Implementation Start Date 26-May-2016	Project Implementation End Date 30-Sep-2022	
Expected Effectiveness Date 30-Sept-2016	Expected Closing Date 31-Dec-2022	
Joint IFC No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Simeon Kacou Ehui	Juergen Voegele	Paul Noumba Um	Makhtar Diop

Borrower: Government of Niger					
Responsible Agency: Ministry of Agriculture					
Contact:	Illa Djimrao		Title:	General Secretary	
Telephone No.:	0022720723939		Email:	illadjimrao@yahoo.fr	

Project Financing Data(in US$ Million)					
[ ]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[X]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	117.80	Total Bank Financing:	111.00
Financing Gap:	0.00		

Financing Source	**Amount**

BORROWER/RECIPIENT	0.00
BENEFICIARIES	6.80
International Development Association (IDA)	111.00
Total	117.80

Expected Disbursements (in US$ Million)

Fiscal Year	2017	2018	2019	2020	2021	2022				
Annual	11.00	22.00	25.00	30.00	15.00	8.00				
Cumulative	11.00	33.00	58.00	88.00	103.00	111				

Institutional Data

Practice Area (Lead)

Agriculture

Contributing Practice Areas

Cross Cutting Topics

[X] Climate Change

[ ] Fragile, Conflict & Violence

[X] Gender

[ ] Jobs

[ ] Public Private Partnership

Sectors/Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Agriculture, fishing, and forestry	Irrigation and drainage	10%	82%	18%
Agriculture, fishing, and forestry	General agriculture, fishing and forestry sector	52%	71%	29%
Agriculture, fishing, and forestry	Crops	19%	58%	42%
Agriculture, fishing, and forestry	Animal production	19%	58%	42%
Total		100		

☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Rural development	Rural services and infrastructure	30

Financial and private sector development	Micro, Small and Medium Enterprise support	20
Rural development	Rural markets	20
Environment and natural resources management	Climate change	20
Rural development	Rural policies and institutions	10
Total		100

Proposed Development Objective(s)

The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency

Components

Component Name	**Cost (US$ Millions)**
Investments for Scaling Up Climate-Smart Agriculture	68.00
Innovative Practices and Improved Service Delivery for Mainstreaming Climate-Smart Agriculture	33.00
Contingency Emergency Response	0.00
Project Coordination and Management	10.00

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	**Rating**
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	
OVERALL	Substantial

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
Does the project require any waivers of Bank policies?	Yes [ ] No [X]

Have these been approved by Bank management?	Yes [ ]	No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [ ]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No [ ]

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

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Accounting software		26-Dec-2016	

Description of Covenant

The recipient shall acquire and install, and thereafter maintain through the Project implementation, accounting software acceptable to the Association not later than three (3) months after the Effective Date

Name	**Recurrent**	**Due Date**	**Frequency**
External auditor		26-March-2017	

Description of Covenant

The recipient shall recruit an external auditor whose qualifications, experience and terms of reference shall be acceptable to the Association, not later than six (6) months after Effective.

Conditions

Name	**Recurrent**	**Due Date**	**Frequency**
Disbursement condition (category 4)			

Description of Covenant

No withdrawal shall be made under Category (4), for Emergency Expenditures under Part C of the Project, unless and until the Association is satisfied, and notified the Recipient of its satisfaction, that all of the following conditions have been met in respect of said activities:

(i) the Recipient has determined that an Eligible Crisis or Emergency has occurred, has furnished to the Association a request to include said activities in the IRM Part in order to respond to said Eligible Crisis or Emergency, and the Association has agreed with such determination, accepted said request and notified the Recipient thereof;

(ii) The Recipient has prepared and disclosed all safeguards instruments required for said activities, and the Recipient has implemented any actions which are required to be taken under said instruments, all in accordance with the provisions of Section I.I of Schedule 2 of the Financing Agreement;

(iii) The Recipient's Coordinating Authority has adequate staff and resources, in accordance with the provisions of Section I.I of the Schedule 2 of the Financing Agreement, for the purposes of said activities; and

(iv) The Recipient has adopted an IRM Operations Manual in form, substance and manner acceptable to the Association and the provisions of the IRM Operations Manual remain - or have been updated in accordance with the provisions of Section I.I of the Schedule 2 of the Financing Agreement so as to be - appropriate for the inclusion and implementation of said activities under the IRM Part.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Amadou Ba	Team Leader (ADM Responsible)	Senior Agriculture Economist	Team Leader	GFADR
Vikas Choudhary	Team Leader	Senior Economist	Co-Team Leader	GFADR
El Hadji Adama Toure	Team Member	Lead Agriculture Economist	Lead Agriculture Economist	GFADR
Ibrah Rahamane Sanoussi	Procurement Specialist (ADM Responsible)	Senior Procurement Specialist	Senior Procurement Specialist	GGODR
Celestin Adjalou Niamien	Financial Management Specialist	Senior Financial Management Specialist	Senior Financial Management Specialist	GGODR
Pierre Gerber	Team Member	Senior Livestock Specialist	Senior Livestock Specialist	GFADR
Abdoulahi Garba	Team Member	Economist	Economist	GMFDR
Myriam Chaudron	Team Member	Livestock Specialist	Senior Livestock Specialist	GFADR
Amadou Alassane	Team Member	Senior Agricultural Specialist	Senior Agricultural Specialist	GFADR
Bougadare Kone	Team Member	Environmental Specialist	Monitoring & Evaluation	GENDR

			Specialist	
Cheikh A. T. Sagna	Safeguards Specialist	Senior Social Development Specialist	Senior Social Development Specialist	GSURR
Fatoumata Den Lamari Fadika	Team Member	E T Consultant	Financial Sector Specialist	GFMDR
Hadidia Diallo Djimba	Team Member	Program Assistant	Program Assistant	AFMNE
Josue Akre	Team Member	Financial Management Specialist	Financial Management Specialist	GGODR
Juvenal Nzambimana	Team Member	Senior Operations Officer	Operations and Quality Assurance	GFADR
Medou Lo	Safeguards Specialist	Consultant	Senior Environmental Consultant	GENDR
Pierrick Fraval	Team Member	Senior Water Resources Mgmt. Specialist	Senior Water Resources Specialist	GWADR
Ruxandra Costache	Legal	Senior Counsel	Counsel	LEGAM
Aissatou Diallo	Finance	Senior Finance Officer	Senior Finance Officer	WFALA
Issa Thiam	Finance	Finance Analyst	Finance Analyst	WFALA
Samuel Taffesse	Team Member	Senior Economist	Senior Operations Officer	GFADR
Sossena Tassew	Team Member	Operations Analyst	Operations Analyst	GFADR
Soulemane Fofana	Team Member	Senior Rural Development Specialist	Senior Rural Development Specialist	GFADR
Yeyande Kasse Sangho	Team Member	Senior Agribusiness Specialist	Senior Agribusiness Specialist	GFADR

Extended Team

Name	Title	Office Phone	Location
Julien Vallet	Agriculture Economist		FAO – Italy
Michel Dinosama	Finance Office		FAO – Italy
Mouhamadou Magha	Consultant		Niamey – Niger

Locations

Country	First Administrative	Location	Planned	Actual	Comments

	Division				
Niger	Dosso, Tahoua, Tilabery, Maradi, Zinder	60 communes			
Consultants (Will be disclosed in the Monthly Operational Summary)					

I. STRATEGIC CONTEXT

A. Country Context

1. **Niger is a large, landlocked country in the arid Sahel region.** The country's relatively young population (<15 years old representing 48.6 percent of the total) is estimated at 17 million and growing rapidly at about 3.8 percent per year. Two-thirds of the country is inhospitable desert and more than 84 percent of the population is concentrated in rural areas along the Niger River in the southwestern part of the country and along its long southern border with Nigeria. The climate is mostly arid (in 85 percent of the total area, annual rainfall is less than 350 mm).

2. **Niger's political institutions have strengthened since the restoration of constitutional order in 2011, and the country is rebuilding its democratic governance mechanisms.** The Government of Niger (GoN) is pursuing important measures to combat organized crime and terrorism and to promote the safety and property rights of its citizens. Military and law enforcement agencies have created new crisis response units and border security has been strengthened in close coordination with regional and international partners. As a result, both unrest in Niger's tribal areas and the threat posed by the conflict in neighboring Mali have diminished. Nevertheless, the country continues to face significant risks related to domestic and regional instability, as well as organized crime and transnational terrorism. The rise of Boko Haram in Nigeria and the recent expansion of its operations to neighboring countries including Niger is cause for particular concern.

3. **Even if poverty incidence is declining, Niger remains among the poorest countries in Africa, with an average US$410 per capita gross national income (GNI, Atlas method) in 2014,** well below the average GNI in constant prices of US$1,638 for Sub-Saharan Africa.[1] Niger is ranked last out of 187 countries in the 2014 Human Development Index. The most recent poverty assessment from 2011 estimated the national poverty headcount rate at 48 percent, down approximately 5 percentage points from 2006. Poverty is heavily concentrated in rural areas. The rural poverty rate stands at 66 percent versus 39 percent in urban areas.

4. **Niger is extremely vulnerable to severe climate shocks, with drought the most important risk in terms of frequency and impacts.** Economically, a strong correlation exists between changes in gross domestic product (GDP) and the meteorological situation, demonstrating the extreme fragility of the economy and particularly the agriculture sector. A 2013 World Bank agriculture sector risk assessment report indicated that Niger's GDP growth rate dipped into negative territory eight times between 1984 and 2010, and drought was largely responsible for the negative GDP growth rate in six years. Between 1980 and 2012, 10 major episodes of drought were recorded, of which 5 led to severe food crisis. The food crisis resulting from the 2011 drought affected more than 7 million people, or almost half of the country's total population at that time.

[1] Source: World Development Indicators 2015.

5. **Food insecurity and malnutrition are major concerns for Niger.** Overall, growth of major food production was slightly less than the population growth over the period 1980-2011, with the increase in the food deficit being filled in by imports. An estimated 2.5 million people in Niger are chronically food-insecure and unable to meet their basic food requirements even during years of average agricultural production. During periods of constrained access to food, millions more can quickly fall into acute transitory food insecurity. Over the past years, Niger made progress on nutrition indicators, but the country still lags substantially behind other low-income countries and Sub-Saharan African counterparts. Malnutrition accounts for more than one-third of child mortality in the country and remains high due to a host of health, sanitation, and behavioral factors, worsened by recurrent food shortages.

6. **Climate change is likely to exacerbate Niger's food security situation.** While uncertainty remains regarding longer-term climate change projections (2050-2100), short- to medium-term rainfall deficits will most likely continue to plague Niger's agriculture sector and the frequency and severity of droughts may remain the same or increase.

7. **In Niger, the agriculture, forestry, and other land uses (AFOLU) sector accounts for 89 percent of total greenhouse gas (GHG) emissions while the energy sector accounts for 9 percent**. Since Niger is a non-Annex 1 party to United Nations Framework Convention on Climate Change, it does not have a quantitative obligation in terms of mitigation, but its ambition is to limit its emissions from 2.8 t CO_2e (base year 2000) to 2.1 t CO_2e per inhabitant in the 2030 horizon. The national priority for the AFOLU sector in Niger's Intended Nationally Determined Contribution **(**INDC) relates to improving the resilience of the agriculture, animal husbandry, and forestry subsectors. For Niger, the adaptation options considered as top priority are those that will permit higher co-benefits with respect to climate change mitigation, particularly those good adaptation practices and techniques that will permit carbon sequestration and reduction of GHG emissions at the same time. Niger's climate change strategy is based on the vision of climate-smart agriculture (CSA) and access to modern energy services for everyone in 2030.

B. Sectoral and Institutional Context

8. **Agriculture is the most important sector of Niger's economy, accounting for over 40 percent of national GDP and the principle source of livelihood for over 80 percent of the country's population.** About 96 percent of Niger's agriculture is based on production of rainfed staple crops, mainly millet, sorghum, and cowpeas integrated with livestock production. The imbalance between population growth (3.9 percent) and agricultural growth (2.2 percent) in the country has contributed to increased land pressure and the expansion of crops to marginal land (Poverty Reduction Strategy Paper 2010). Despite continued expansion of the area cultivated, per capita land use is declining. Farms are small (average 4.1 ha) and getting smaller because Niger's high population growth rate exceeds the rate of area expansion. The consequent pressure on agricultural land resources has risen in the last decades and is now very high.

9. **Agriculture remains today, as in the past, a key engine of economic growth and poverty reduction in Niger.** The GoN's Economic and Social Development Plan (PDES 2012-2015) reaffirms the central role of agriculture and the economic growth target of 8 percent per year to reach Millennium Development Goal (MDG) 1 in 2020. The PDES represents a unique operational framework for the GoN's mid-term development agenda, in line with the MDGs. It covers the following strategic axes: (i) creation of conditions conducive to sustainable, equitable, and inclusive development; (ii) food security and sustainable agricultural development; (iii) promotion of a competitive and diversified economy; and (iv) promotion of social development. To operationalize the PDES in the agriculture sector, the GoN adopted in April 2012 the "Nigeriens Nourish Nigeriens" (3N) Initiative as its national strategy to boost agricultural development and definitively resolve the problem of food and nutrition insecurity.

10. **Mixed crop-livestock systems dominate food production in Niger.** While the northern part of Niger is dominated by pastoral systems, mixed crop-livestock systems prevail in the southern belt, below the 400 mm rainfall isohyet. These systems ensure the bulk of the country's food production, hosting about two-thirds of the ruminant population of Niger, and producing over 80 percent of the millet and sorghum output. Farm production is generally intended to ensure households' food security but the majority of households sell their agricultural produce after harvest to get access to much-needed cash and many buy food back during the lean period. Crop-livestock integration allows an efficient use of natural resources through the cycling of nutrients and energy within the system, thus reducing dependence on mineral fertilizers, mechanization, and imported feed. Mixed systems also offer opportunities for income diversification and agricultural risk mitigation.

11. **The Niger fertilizer market is very small, which is around 30,000 MT.** The *Centrale d'Approvisionnement en Intrants et Matériels Agricoles* (CAIMA) is the major program in provision of subsidized fertilizers to farmers in the country. The few professional fertilizer firms existing face numerous issues to expand their business. CAIMA has played a crucial role in improving the awareness of fertilizer use in the country at large and ensure quality of fertilizer. There are a few issues associated with CAIMA: weakness of the national markets for inputs and fertilizer distribution network and delays in placing inputs at farm gate. The operational effectiveness of CAIMA could be improved further through effective private sector participation – improved competitive markets and technology transfers.

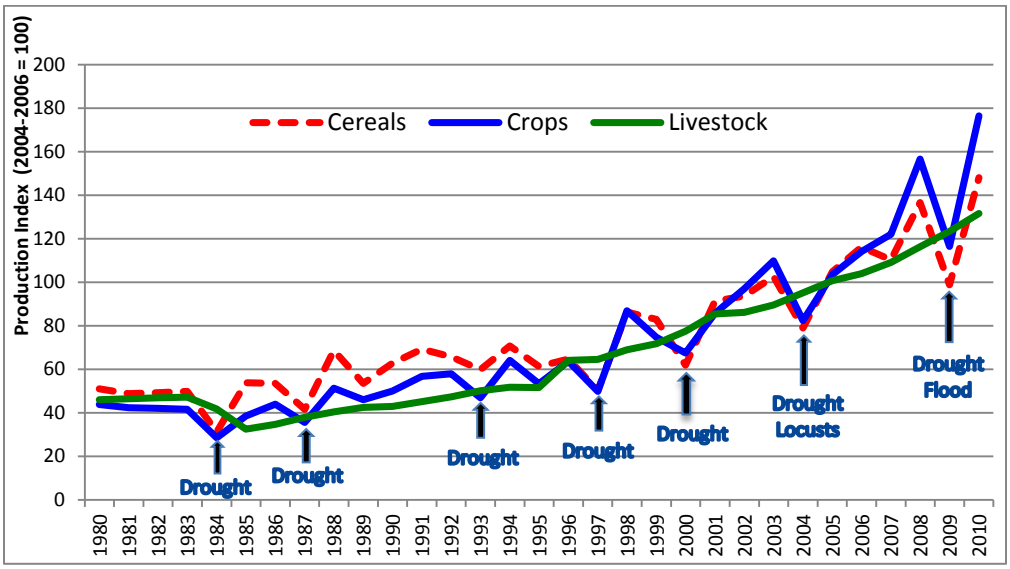
12. **The seed market in Niger is very small (12,000 MT/ year, less than <10 percent farmers using improved or modern varieties)**, with 'relief' seeds or government supplied seeds (for free or heavily subsidized) dominating the market. Purchased seeds are limited to irrigated areas, predominantly for vegetables crop and rice. In the rain fed system, the major distortion towards the rapid development of the seed industry is 'government interventions' and other donor related initiatives, which are not sustainable. In spite of the above, the seed market in Niger has grown in the last 7-8 years, and the demand for good quality seeds is increasing. This has resulted in entry of private firms that see an opportunity in the seed business. The approval of Niger seed law in 2015 in tune with ECOWAS regulations also have created an enabling environment in Niger for further development of the sector. Niger has a comparative advantage to its neighbors—in

agricultural research capacity (National Institute for Agronomic Research in Niger [Institut National de la Recherche Agronomique du Niger, INRAN]) with highly skilled scientific human resources and also the presence of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), with established infrastructure.

13. **Niger's INDC highlights sustainable land management (SLM) at the core of its adaptation efforts**. The document highlights that the co-benefits in the AFOLU sector consist of the results of implementing and upscaling CSA activities: strengthening good practices of assisted natural regeneration (ANR) and recovery of degraded land; improving the balance sheet of cereals and fodder, along with food and nutritional security; developing local agro-climate information; and creating jobs, reducing the rural exodus, and strengthening social cohesion.

14. **The World Bank's agriculture sector risk assessment, conducted in Niger in 2013, serves as the analytic underpinning of the proposed project.** This risk assessment highlighted Niger's exposure and vulnerability to frequent risks, primarily drought (Figure 1), and indicated that risk and volatility might be seen as a new normal under the context of changing climate. Following the risk assessment, the GoN developed an Agriculture Risk Management Plan (PAGRA 2014-2023). This 10-year action plan's overriding goal is to help build the resilience of rural and semi-urban communities to the main agricultural risk factors. The plan prepares a shift from *ex-post* crisis response to *ex-ante* risk management and resilience building. It aims to put in place structures and measures that allow farmers to better manage risks and to enhance resilience among agricultural households and the agriculture sector in general.

Figure 1: Major Shocks to Crop and Livestock Production in Niger, 1980-2010



Source: Agriculture Risk Assessment, The World Bank, 2013.

15. **Niger's agriculture sector can be characterized by two fundamental problems: low productivity and low resilience.** Through an integrated approach, the proposed Climate-Smart Agriculture Support Project (PASEC) will contribute to addressing the following binding constraints that affect the productivity and resilience of Niger's crop-livestock sector:

- **Continuous degradation of cultivated and pasture lands.** Soil infertility and land degradation are the main biophysical factors that contribute to declining per capita food production in the country. These are increasingly exacerbated by seasonal droughts associated with climate change and weather variability. In a similar way, pasture and rangeland degradation are a serious constraint to livestock productivity;

- **Inadequate and inefficient seed systems.** Most Nigerien farmers practice low-input agriculture. Despite the frequency of droughts, the adoption rate of improved and drought-tolerant seeds is very low. For example, improved seeds produced in 2011 cover only 2.88 percent of the area planted in 2012. Yet the majority of farmers still rely on their own saved seeds, which are no longer adapted to the climatic conditions;

- **Limited expansion of affordable small-scale irrigation solutions.** Niger is well-endowed with shallow renewable groundwater and a strong tradition of and demand for small-scale irrigation exists wherever a high population density, market opportunities, and the resource are present. The country recently adopted a strategy for the sustainable development of small-scale irrigation. Yet financial resources and an adapted approach to anchor water resources mobilization into local development strategies still fall short of the growing demand;

- **Low capacity of public or private structures to deliver services to the satisfaction of producers.** The limitation of extension services significantly affects the dissemination and adoption of new technologies in the country; and

- **Low productivity among female peasants.** The "Gender Differentials and Agricultural Productivity in Niger" report (World Bank Policy Research Working Paper 7199, February 2015) indicates that "In Niger, as in many other African countries, productivity is even lower among female peasants." The analysis finds that in Niger, plots managed by women produce 19 percent less per hectare on average than plots managed by men. It also finds that the gender gap tends to be widest among Niger's most productive farmers. The primary factors that contribute to the gender productivity gap in Niger are: (i) farm labor, with women facing significant challenges in accessing, using, and supervising male farm labor; (ii) the quantity and quality of fertilizer use, with men using more inorganic fertilizer per hectare than women; and (iii) land ownership characteristics, with men owning more land and enjoying higher returns to ownership than women.

Box 1: Climate-Smart Agriculture

Climate-smart agriculture (CSA) contributes to the achievement of sustainable development goals. It integrates the three dimensions of sustainable development (economic, social and environmental) by jointly addressing food security and climate challenges. It is composed of three main pillars: (i) sustainably increasing agricultural productivity and incomes; (ii) adapting and building resilience to climate change; and (iii) reducing and/or removing greenhouse gases emissions.

The CSA approach is designed to identify and operationalize sustainable agricultural development within the explicit parameters of climate change. This approach also aims to strengthen livelihoods and food security, especially of smallholders, by improving the management and use of natural resources and adopting appropriate methods and technologies for the production, processing, and marketing of agricultural goods. CSA seeks to support countries in putting in place the necessary policy, technical, and financial means to mainstream climate change considerations into agriculture sectors and to provide a basis for operationalizing sustainable agricultural development under changing conditions.

CSA is not a single specific agricultural technology or practice that can be universally applied rather it is about 'triple-outcomes'. It is an approach that requires site-specific assessments to identify suitable integrated agricultural production technologies and practices that could deliver the 3 outcomes of improved productivity, enhanced resilience, and reduced emissions**.** A key element is the integrated landscape approach, which follows the principles of ecosystem management and sustainable land and water use.

Niger is one of the founding members of the Global Alliance of Climate Smart Agriculture launched in September 2014. The Alliance aims to improve the food and nutrition security of populations to adapt agricultural practices, food chains, and social policies to take into account climate change and use natural resources more efficiently.

Focus on productivity and resilience. Niger's specific context requires an emphasis on two of the three outcomes of CSA: productivity and resilience. Mitigation remains an objective to be fulfilled mostly as a co-benefit. In a context of scarce food resources, mitigation is achieved through the changes in technology and management practices that allow reduction of GHG emission intensity per unit of production, while boosting productivity and improving resilience.

16. **The project will coordinate closely with other IDA-financed projects and projects being implemented by other partners to ensure effective synergies on the ground.** Close relationships and coordination of activities will be established with other

Bank-supported projects in Niger. For example, the project will: (a) contribute to disseminate technologies and scale up the Innovation Platform (IP) under the West Africa Agricultural Productivity Program (WAAPP); (b) continue value chain development approaches implemented by PRODEX[2] and use the same matching grant mechanism to develop agricultural value chains, promote innovation and technology transfer, and enhance access to extension and support services; (c) support resilience-building measures at village and household level to complement community-based actions implemented by Community Action Program – Phase 3 (CAP3) and Community Action Project– Climate Resilience (CAP-RC); and (d) complement the Regional Sahel Pastoralism Support Project (PRAPS) interventions in pastoralism management. The project will support mixed crops and livestock systems in agro-pastoral zones while PRAPS will target purely pastoral regions. In addition, the agricultural water management interventions of the project are informed by both past small-scale, irrigation-focused Bank projects and by the directions set as part of the Sahel Regional Irrigation Initiative.

17. **The Millennium Challenge Corporation (MCC) of the United States government is currently developing a broader compact with the GoN**. The compact will comprise two interventions: a) irrigation development support in selected perimeters to be implemented by the Millennium Challenge Account Project Coordination Unit and b) provision of parallel financing to two World Bank funded operations (PASEC and PRAPS). The compact co-financing to the proposed project (PASEC) will be focusing on commune subprojects and inclusive enterprise development in 16 communes for an amount of US$ 51 million. MCC will follow the approach developed by this project; to ensure synergies with IDA financing, MCC activities in 16 communes will be implemented by a common Project Implementation Unit (PIU).

C. Higher Level Objectives to which the Project Contributes

18. **At national level, the project is aligned with the 3N Initiative adopted by the GoN in April 2012 as its national strategy to boost agricultural development and to ultimately resolve the food and nutrition insecurity situation.** The 3N Initiative's Investment Plan comprises a set of priority measures that the government intends to implement with a view to: (i) increasing and diversifying agro-sylvo-pastoral and fishery production; (ii) guaranteeing regular supply of farm produce and agri-food products; (iii) improving the population's resilience to climate changes, crises, and disasters; (iv) improving Nigeriens' nutrition situation; and (v) supporting reforms and driving and coordinating the 3N Initiative. The project also fits the National Decentralization Policy (NDP), which repositions the government in its regulatory functions and its catalytic role of support to decentralization reforms. CSA is at the core of Niger's climate change strategy and this project figures prominently in the INDC submitted at the Conference of Parties (COP) 21 held in December 2015 in Paris.

19. **Ultimately, the project will contribute to the World Bank Group's twin goals of ending extreme poverty and promoting shared prosperity.** By supporting the

[2] *Projet de Développement des Exportation des Produits Agro-sylvo-pastoraux* (Agro-Sylvo-Pastoral Exports and Markets Development Project.

provision of key community-based infrastructure for CSA, and productive assets to farmers and other supply chain actors, the project will contribute to increased production, food security, and competitiveness as well as to improved livelihoods and reduced poverty for extremely poor beneficiaries. The share of the population below the national poverty line in the targeted rural communes are amongst the highest in the country (66 percent). The direct and indirect effects of the project will contribute to reducing poverty as measured by increased household income. Through increased access to finance, growth, and job creation, the new operation will also promote shared prosperity, measured by monitoring employment within the project.

20. **The Niger Climate-Smart Agriculture Support Project will contribute to the implementation of the Africa Climate Business Plan**: The World Bank has prepared an Africa Climate Business Plan (2015) which will boost the region's ability to adapt to the changing climate while reducing greenhouse emissions through a number of concrete actions. The ambition of the plan is to raise US$16 billion in climate finance by 2020, US$5.1 billion of which is from IDA, and the rest from a variety of sources. The Africa Climate Business Plan highlights that for African Governments, promoting climate-smart agriculture is also a priority. Niger Climate-Smart Agriculture Support Project will finance a range of agricultural management solutions, which will improve crop productivity, enhance resilience to climate shocks and reduce carbon emissions, thereby contributing to the implementation of the Africa Climate Business Plan.

21. **The *Projet d'Appui à l'Agriculture Sensible aux risques Climatiques* (Climate-Smart Agriculture Support Project/PASEC) is well aligned with the objectives of the 2013-2016 Niger-Country Partnership Strategy (CPS), which are to assist Niger to achieve resilient growth, reduce vulnerability, and strengthen capacity for service delivery.** Accordingly, the CPS supports actions aimed at strengthening the macroeconomic foundation, the investment climate, and access to finance to build resilient growth, improve agricultural productivity and marketing of selected crops, and promote risk management in agriculture to mitigate the impacts of climatic change and weather variability. The proposed project is included in Pillar I (Promoting Resilient Growth) of the CPS and will contribute to building resilience of the agriculture sector while increasing the productivity of selected crops. In addition, the project contributes to Pillar II (Reducing Vulnerability) and will result in increased adoption of CSA practices in targeted communities.

II. PROJECT DEVELOPMENT OBJECTIVE

A. **PDO**

22. The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency.

23. The project will deliver on CSA's "**triple outcomes**" through:

(i) Sustainable increases in productivity and farm incomes (**food security**);

(ii) Adaptation of and strengthened resilience to the impacts of climate (**adaptation)**;

(iii) Reduced GHG emissions per unit of product, and increased carbon sequestration (**mitigation**).

24. In the targeted area, the project will promote sustainable landscape management with coordinated interventions at spatial scales (communes) that attempt to optimize the interactions among a range of land cover types, institutions, and activities. This sustainable landscape management will: (i) optimize the management of different activities depending on natural resource (agriculture, livestock, forestry); (ii) take into account the external environment (decentralization context, policies, regulations, markets, etc.) that might alter the relationship between the stakeholders; and (iii) encourage inclusive stakeholder consultations to maintain and enhance the services they provide.

B. **Project Beneficiaries**

25. Project direct beneficiaries are estimated at about 500,000 farmers and agro pastoralists who will benefit from integrated commune sub-projects. Producer organizations, women, youth, and vulnerable groups, and micro small and medium enterprises will also directly benefit from the project activities. It is anticipated that 40 percent of the total direct beneficiaries will be women.

26. The indirect beneficiaries will be the representatives of local government and technical services of Ministries of Agriculture, Livestock, Public Administration and Rural Development. Representatives of these institutions will benefit from technical and institutional capacity-building initiatives under the project.

27. The project intervention area covers the regions of Dosso, Maradi, Tahoua, Tillabery, and Zinder. The project's activities will be concentrated in 60 communes located in the bioclimatic zone between 400 mm and 600 mm, highly vulnerable to food insecurity due to frequent drought and rainfall variability but with huge potential for increasing agricultural productivity. These communes cover an area of 54,810 km² (4 percent of the territory) and are home to 3.9 million inhabitants (23 percent of Niger's total population) distributed in 529,789 households (86 percent of them rural). The IDA financing will cover 44 communes while MCC will provide parallel financing to support investments in 16 other communes.

28. In each commune, the project will intervene in selected clusters of villages which will be identified based on vulnerability to climate risks, irrigation potential, and potential for improving the agricultural sector. Areas of concentration of investments in each commune or group of communes will be identified in a participatory manner and on the basis of commune climate smart investment plans which will be developed from the exiting *Plan de Développement Communal* (Communal Development Plan - PDC).

29. The project will contribute to improved nutritional outcomes by promoting diet and crop diversification, food processing, and meat and milk consumption and by

improving the availability and affordability of agricultural produce. The project will also contribute to strengthening agricultural value chains and transitioning farmers from subsistence agriculture to quasi-commercial agricultural production.

C. **PDO Level Results Indicators**

30. The PDO indicators for the proposed project include:

- The **direct beneficiaries of the project** (number), of which female (percentage)
- **Productivity Indicator**: Agricultural productivity increase in the project area
- **Mitigation Indicator**: Reduced net GHG emissions per unit of food (energy and protein equivalent)
- **Resilience Indicator**: Increased adoption of new agricultural and management practices promoted by the project[3]

III. PROJECT DESCRIPTION

A. **Project Components**

31. To reach the PDO, the project will develop a demand-driven and integrated approach focusing on activities that will: (i) improve the utilization rate of selected and drought-tolerant seeds; (ii) increase the number of farmers using irrigation; (iii) increase the use of agroforestry and conservation agriculture techniques to minimize climate risks and enhance food security; (iv) promote the reclamation of degraded agro-pastoral land; (v) protect the watershed from erosion and secure irrigation potential; (vi) promote livestock and other high potential value chains (dairy, poultry, crops, vegetables, aquaculture, fruits trees, animal feeds and mechanization); and (vii) improve market access. Meanwhile, the project will enhance the capacity of local governments, farmers' organizations, national information systems, rural and agricultural advisory service providers, training institutes, incubation centers, and financial institutions to provide goods and services to meet the needs of communities and farmers.

32. The project is organized into four components: (i) Investments for scaling up climate-smart agriculture; (ii) Innovative practices and improved service delivery for mainstreaming climate-smart agriculture; (iii) Contingency Emergency Response; and (iv) Project coordination and management.

[3] Resilience is multifaceted phenomenon which is difficult to capture using a single indicator. In addition to the core indicator, there are number of intermediate results indicators (annex 1) which capture different aspect of resilience. Namely,: i) Area provided with irrigation and drainage services; ii) Land area where sustainable land management practices have been adopted as a result of the project; iii) Percentage of targeted communes that have constructed pastoral infrastructure to support CSA; and iv) Percentage of farmers using climate information for agricultural production help capture the resilience outcomes of the overall project

Component 1: Investments for Scaling up Climate-smart Agriculture (US$68 million)

33. **The objective of Component 1 is to provide financing to scale up proven technologies and practices, both at commune and individual level,** leading to increased agricultural productivity and income while building resilience to climate change in the project area and reducing/removing carbon emissions. In each commune, the project will support preparation of an Integrated Climate-Smart Agriculture Investment Plans (ICSIP) by a specialized NGO, drawing on the existing PDC developed under the decentralization process by the GoN. They will integrate investments by communes to create business opportunities for farmers' groups, and Micro Small and Medium Enterprises (MSMEs). This comprises two subcomponents:

Subcomponent 1.1 - Financing CSA-integrated subprojects at the commune level (US$53 million)

34. The purpose of this subcomponent is to provide investment grants to communes for supporting CSA-integrated subprojects. Building upon the existing Commune Development Plan (PCD), PASEC will support the preparation of ICSIP for each commune through a bottom-up, participatory approach. Each ICSIP will comprise a number of integrated subprojects that will support a combination of the following five principal intervention categories: (a) improving soil fertility and water management for rainfed crops; (b) supporting small- and medium-scale irrigation; (c) supporting the consolidation of high potential value chains; (d) improving market access; and (e) improving agroforestry and natural resource management. The subprojects are public investments that are of collective interest, generate public good and business opportunities, benefit vulnerable populations, and are implemented at commune level.

Subcomponent 1.2 - Inclusive enterprise development for sustainability of CSA (US$15 million)

35. To sustain and scale up the adoption of CSA-integrated approaches within and beyond the project, it is important to stimulate business opportunities and create incentives for women and youth groups, producers' groups and MSMEs to undertake activities that strengthen input and outputs markets and support conditions for successful adoption of improved agricultural practices. Under this subcomponent, the project will support investments in the following areas:

- Business development services support for matching grant recipients (US$ 5 million) to undertake entrepreneurial activities using proven business models and technologies to support rainfed production systems, irrigation schemes, livestock and high value chains. The actors will receive training in technical and business management skills to enable the conversion of innovation into successful business; training in post-harvest loss reduction methods including food processing;

- Establishment of a matching grant facility in the amount of US$10 million to promote development of inclusive enterprise in the agriculture sector.

Component 2: Innovative practices and improved service delivery for mainstreaming Climate-Smart Agriculture (US$ 33 million)

36. To help support the financial investments in Component 1 and adopt innovative practices to achieve the triple outcomes of CSA, farmers' capacity needs to be strengthened and they will need access to a number of services from private and public institutions. This component will focus on improving service delivery by national and local institutions and farmers adoption of innovative practices. It will also focus on public sector institutions to improve the policy and enabling environment and facilitate delivery of relevant services by national and local public sector institutions. In addition, this component will work directly with the private sector and attempt to develop market mechanisms for sustained service delivery during and after the project.

Subcomponent 2.1 - Technology transfer (US$9 million)

37. This subcomponent constitutes the second major source of investment leads, the first being the proven technologies and practices which could be translated into quick wins delivered from the project inception. It is designed to showcase transformative technologies and innovations that could be adopted and scaled up by value chain operators to improve productivity and product quality and reduce climate change risks and carbon emissions. This subcomponent will focus on technology transfer and will use the demand-based Farmers Field School (FFS) approach developed by the Food and Agriculture Organization (of the United Nations) (FAO) as well as the innovation platform approach implemented in Niger under the WAAPP, to establish demonstration schemes and facilitate multistakeholder participatory processes for the adoption of new technologies. The communes' specific needs will be articulated through ICSIPs and technical packages will be developed and delivered by national institutions (Extension and Technology Transfer Department [Direction de la Vulgarisation et du Transfert de Technologies, DVTT], DGPIA, DGGR, and Network of Agriculture Chambers [Réseau des Chambres d'Agriculture, RECA]) in partnership with technical international institutions (FAO and ICRISAT/Research Program on Climate Change, Agriculture, and Food Security [CCAFS]) and on the basis of a critical review of past experiences in the region. Through their demand-based, demonstration-focused, and peer-to-peer learning approach, FFSs will help large-scale dissemination and adoption of improved agricultural practices in the project site and complement commune and enterprise investments made in Subcomponent 2.1. The project will use the innovation platform to support value chain development and facilitate dialogue between all stakeholders of considered agricultural value chains, including farmers, training institutions, extension workers, traders, processors, private enterprises, policy makers, NGOs, financial service providers, and researchers. The innovation platform will bring together the various stakeholders and provide them a space to interact, facilitate knowledge flows, and identify and disseminate best practices. The innovation platform will, therefore, be able to identify challenges and opportunities for the adoption of agricultural technologies and value chain development solutions. In each commune, the innovation platform will generate site-specific solutions to align production

with market requirements, which will in turn ensure better prices for smallholder producers.

Subcomponent 2.2 - Improved access to information (US$13 million)

38. Access to improved information for decision making is a critical element of the CSA package. Under this subcomponent, the project will: (a) collaborate with the Directorate of Meteorology, RECA, and INRAN (*Institut National de la Recherche Agronomique du Niger*/National Institute for Agronomic Research in Niger) to invest in commune level weather forecast (seasonal and short term) and advisory; (b) strengthen information delivery to farmers through upgrading and expanding RECA's web platform, supporting RECA in compilation of existing content on good agriculture and livestock practices and preparing dissemination material in local language (Hausa and Zarma), support community rural radios, and leveraging rural markets for information dissemination; and (c) deliver weather forecast and crop price information to farmers in selected communes through cellphones.

Subcomponent 2.3 - Support to national institutions for improved service delivery and policy dialogue (US$6 million)

39. To mainstream CSA in Niger's broader institutional landscape, the project needs to coordinate with a large number of ministries and institutions and to build strong coalitions. In addition, project performance is contingent on active participation and support of a number of institutions directly engaged in service delivery in the agriculture and livestock sectors. The project will finance a number of activities to strengthen national institutions' capacity, including: (a) organizing workshops, meetings, and field visits and developing and delivering a training program for building awareness and knowledge sharing on CSA; (b) supporting development of policies, projects, and programs for CSA, which might entail undertaking technical studies, organizing workshops and meetings, exposure visits, etc.; (c) supporting national institutions to help implement PASEC; (d) supporting national universities to develop curriculum on CSA; (e) supporting Investment Fund for Food Security and Nutrition (FISAN) for organizing workshops, undertaking training, financing analytic studies and strategy development, and other support activities; and (f) supporting INRAN for production of foundation seed for staple grains; provide support for distributing foundation seed to seed breeders; provide support for technical assistance, quality control, and monitoring of seed; and support for maintaining genetic material.

Subcomponent 2.4 Supporting Innovations for Agriculture Development (US$5 million)

40. While the focus of the project is to scale-up proven interventions, at the same time, to keep providing space for new innovations that have potential for scaling-up in future, this sub-component will pilot a number of innovations. These activities are already being implemented, and scaled up in neighboring countries and can play a big role in strengthening resilience and improving productivity. Under this sub-component, the following activities will be supported: a) Piloting of e-vouchers for agricultural input

distribution for vulnerable populations in selected communes; and b) Piloting the use of remote sensing, application for monitoring crop performance.

Component 3: Contingency Emergency Response (US$0 million)

41. This component will finance emergency works in case of another disaster event by including a "zero-dollar" Contingency Emergency Response Component (CERC). This will help reduce damage to infrastructure, ensure business continuity, and enable early rehabilitation. In parallel, following an adverse event that causes a major disaster, the GoN may request the Bank to channel resources from other components into an Immediate Response Mechanism (IRM). The IRM will enable the use of a portion of uncommitted funds from the overall IDA portfolio to respond to emergencies. To mobilize resources from the component, it will use the "Immediate Response Mechanism Operational Manual," approved by the Bank on March 17, 2015, and the GoN on June 16, 2015.

Component 4: Project Coordination and Management (US$10 million)

42. The project will be implemented under the 3N Initiative's institutional arrangements. This component has two subcomponents: (a) Coordination, management, and implementation support; and (b) Monitoring and evaluation (M&E), communication, and knowledge production and sharing.

a) Coordination, management, and implementation support

43. This subcomponent will support: (i) establishment and operation of the National Coordination Unit (NCU) and five Regional Support Units (RSUs) in Dosso, Maradi, Tahoua, Tillaberi, and Zinder; (ii) establishment and operation of the Project Steering Committee (PSC); and (iii) coordinated implementation support and services provided by national technical entities, consultants, research institutions, etc. The subcomponent will particularly include management of staff (including national and international consultants) and equipment, financial management (FM), procurement activities, management of environmental and social safeguards aspects, and organization of work, including joint supervision missions.

b) Monitoring and evaluation (M&E), communication, and knowledge production and sharing

44. A framework for assessing resilience to drought in mixed crop-livestock systems of the Sahel will be defined. Specific metrics will be established for the project areas and monitored during project implementation. Activities will draw on panel data from the LSMS (Living Standards Measurement Study) program.

45. The M&E system will be established to collect and process appropriate information and to verify the output, effects, and eventually the impacts of project activities over time.

46. Information sharing and stakeholder involvement and participation at all stages of the project cycle will be a core of the project's accountability for results. A communication

and knowledge-sharing strategy will be designed and implemented to appropriately disseminate all information concerning approaches, processes, results, and lessons learned by the project to key ministerial departments and national agencies, communes, the private sector, farmers' organizations, farmers, and NGOs.

B. Project Financing

47. Total project costs are estimated at US$117.8 million, which will be financed through: (i) an IDA17 credit of US$111 million; (ii) beneficiaries' participation for sub-projects financing a maximum total of US$ 6.8 million (in-kind).

48. The IDA project will be structured as an Investment Project Financing (IPF) in the amount of US$111 million over six years. MCC has expressed interest to provide parallel financing of US$51 million to support implementation of CSA-integrated subprojects at commune level and matching grants for adoption and scaling up of CSA activities. MCC financing is not tied to IDA financing and will target separate communes.

49. The project's cost summary is presented in table 1.

Table 1: Project Costs Summary (in US$ Million)

Project Activities	**Project Cost (US$ million)**	**Beneficiaries (US$ million)**	**IDA (US$ million)**
Component 1: Investments for Scaling up Climate-Smart Agriculture			
1.1 Financing of CSA communal integrated subprojects	55.40	2.40	53
1.2 Inclusive enterprise development for sustainability of CSA	19.40	4.40	15
Subtotal 1	**74.80**	**6.80**	**68**
Component 2: Innovative Practices and Improved Service Delivery for Mainstreaming Climate-Smart Agriculture			
2.1Technology transfer	9	-	9
2.2 Improved access to information	13	-	13
2.3 Support to national institutions for improved service delivery and policy dialogue	6	-	6
2.4 Supporting innovation for agriculture development	5	-	5
Subtotal 2	33	-	33
Component 3: Contingency Emergency Response	**0**	**-**	**0**
Component 4: Project Coordination and Management	**10**	**-**	**10**
Total Project Cost	**117.80**	**6.80**	**111**

C. Lessons Learned and Reflected in the Project Design

50. PASEC was developed based on past and ongoing experience from IDA-financed operations in agriculture, agribusiness, and natural resource management.

51. The Independent Evaluation Group (IEG) review of Bank-funded projects in Niger, Burkina Faso, and Nigeria revealed certain critical activities/measures for improving local development and sustainable agriculture development. Lessons learned include:

(i) **Promoting the value of natural resource management and environmental improvements requires tangible incentives.** To incentivize poor people in long-term issues of the environment (e.g., maintenance of trees), tangible incentives (food or cash for work) are necessary.

(ii) **Women can be more successful at specific types of micro-projects.** In Niger, women proved to be more energetic and responsible in their commitments for financial and in-kind contributions, and better at making their micro-projects profitable than men, mixed groups, or commune administrations.

(iii) **Capacity building is more effective when it focuses on sustainable institutions and occurs through learning-by-doing.** Partnering with legally mandated entities such as Village Development Councils, local municipalities, decentralized agencies, civil society, and the private sector has great potential to enable skills transfer to established institutions.

(iv) **Clear selectivity, targeting, and beneficiary selection criteria can enhance project impact**.

52. The proposed project will draw important lessons from the strengths and weaknesses of other programs/projects operating in Niger in the areas of institutional development, decentralization and local governance, community development, capacity building, and sustainable management of natural resources. Key lessons reflected in the project design are the following:

(i) **The significant potential for scaling up technologies to achieve CSA's triple outcomes***:* Past and ongoing CSA interventions (agricultural research developed by INRAN, ICRISAT, and CCAFS) and outputs of ongoing operations (CAP3, CAP-CR, PRODEX) have shown the potential to significantly improve yields and agricultural production if a participatory and integrated approach is adopted for dissemination of technologies and techniques sensitive to climate change.

(ii) **CAP3 and CAP-RC experiences reveal the need for strong capacity building** and improved service delivery channels for agriculture sector stakeholders, with special emphasis on women and youth.

(iii)**The previous experience of the World Bank and other partners (FAO, IFAD)** in Niger showed that application of simple water efficiency techniques combined with sustainable soil fertility management, the use of drought-tolerant seeds, and other conservation farming methods have the potential to significantly increase cereal productivity and to enhance households' resilience to climate change. Moreover, investing in small Sustainable Land and Water Management infrastructure, agroforestry techniques, pastoral areas' protection, and development of low-cost measures for the integrated management of soil fertility

as well as promotion of community-based natural resource management practices helps to build resilience by generating considerable monetary and nonmonetary benefits for smallholders and communities.

53. The proposed project is also enriched by lessons learned and recommendations from the World Bank flagship report ***Enhancing resilience in African dryland: towards a shared development agenda.*** This report focused on making current livelihood strategies (especially pastoralism, agro-pastoralism, and crop farming) more productive and more resilient and putting in place appropriate safety nets.

Box 2: Highlights of World Bank Flagship Report "Enhancing Resilience in African Drylands: Towards a Shared Development Agenda"

The reports recommends the following four major pathways to improve current livelihood strategies: (i) Productivity-enhancing interventions– such as providing improved animal health services, ensuring early off-take of young male animals, destocking quickly in the face of approaching droughts, and ensuring improved access to grazing areas– could raise the share of resilient pastoral and agro-pastoral households; (ii) Improved crop production technologies (e.g., use of drought and heat-tolerant varieties, improved fertility management, rainwater harvesting) can deliver sizable benefits on the productivity and resilience of key staples; (iii) Incorporation of trees (especially Farmer Managed Natural Regeneration) can increase resilience of many dryland farming systems; and (iv) Irrigation can provide an important buffer against drought. In addition, the flagship report suggested two cross-cutting interventions, both of which could make significant contribution to improving resilience in drylands: (i) restoring degraded dryland by addressing the drivers of land degradation, discouraging unsustainable use of natural resources, and scaling up improved land and water management; and (ii) reducing barriers to trade.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

Overall Implementation Oversight and Management

54. *Project Oversight*. The Borrower is represented by the Ministry of Economy and Finance (MEF). Overall responsibility for project implementation will be delegated to the Ministry of Agriculture (MoA). Implementation is envisaged to take place over six years.

55. *Implementation.* The project implementation mechanism will comprise: (i) a National Project Steering Committee (PSC); (ii) a National Coordination Unit (NCU) and five Regional Support Units (RSUs); (iii) a Regional Approval Committee (CRAP) for the approval of subprojects and a Communal Monitoring Committee (CCS). The implementation mechanisms are described in Annex 4 and in more detail in the Project Implementation Manual (PIM).

- *The ongoing Bank funded project PRODEX will be responsible for the implementation of PASEC until the establishment of the new National Coordination Unit.* During this period, PRODEX will recruit individual consultants to support the PASEC work

program implementation. The PRODEX will transfer the management of the Project to the NCU once the latter will be operational;

- *Project Steering Committee (PSC)*: The PSC has been established by the MoA. The PSC will ensure close coordination of the Project with other Bank-supported operations in the area of local development and climate change adaptation (CAP3, CAP-RC, and Safety Nets Project). The PSC will mainly be responsible for: (a) approving the Project's Annual Work Plan and Budget (AWPB), prepared by the NCU; (b) overseeing overall performance of the project and providing policy guidance; and (c) suggesting necessary project adjustments based on M&E results. The PSC will comprise representatives of, *inter alia* (as set forth in the PIM): (i) Ministries in charge of agriculture, finance, livestock, environment, and water; (ii) farmers' and women's apex organizations; (iii) the Association of Mayors; (iv) the Association of Financial Institutions; and (v) the National Network of Chambers of Agriculture;

- *National Coordination Unit (NCU).* It will be directly responsible for all activities related to Component 4. The Implementation Manual and the Manual of Procedures of PASEC will be approved and disseminated prior to effectiveness, to take into account new institutional configurations. The NCU will be reporting to the General Secretary of the Ministry of Agriculture. The respective roles and composition are elaborated in Annex 4;

- *Regional Support Units (RSUs)*: Five RSUs will be set up (in Tilaberi, Dosso, Tahaoua, Maradi, and Zinder). RSUs will support and follow up project delivery at the regional level. Each RSU will include one Field Support Coordinator and three assistants (M&E, Procurement, and Accountant). RSUs will screen initial applications to the matching grant fund and the integrated subprojects before submitting them to CRAPs for further analysis and approval;

- *Regional Approval Committees (CRAP initially created under CAP3).* CRAPs will analyze integrated subprojects selected by commune councils to be financed under the project and matching grant application requests screened by the RSU to ensure their compliance with sectoral policies, contribution to CSA's triple outcomes, technical standards, economic effectiveness, and social and environmental safeguard policies. CRAP members will receive necessary technical support and capacity-building activities to perform their functions; and

- *Communal Monitoring Committees (CCS):* A CCS is created by regulatory act of the Commune Mayor and advises on the CSA investment plan and integrated subprojects. It also reviews the implementation reports of communal or community interest operations in the project. It ensures consistency, complementarity, and synergy between the project and other partners in the commune. Each CCS will include representatives of local women's groups and youth associations.

56. The PIM details the organizational and technical procedures that govern the project, including FM, procurement, and the Grievance Redress Mechanism (GRM). The GRM will allow the NCU to address issues in a timely manner.

B. Results Monitoring and Evaluation

57. **General characteristics.** The results monitoring framework summarizes: expected results; indicators and related baseline data of outputs and outcomes; milestones; and a timeline for progress. Based on the M&E guidance prepared, the project's M&E system is designed to inform the results monitoring framework. The M&E system will: provide information to verify progress toward and achievement of results (outputs, outcomes, and impacts); support learning from experience; and promote accountability for results.

58. **Results measurement for project performance.** The baseline study remains the starting point for PASEC results measurement. It will serve as a benchmark for routine project monitoring (quarterly report, Annual Project Report) during project implementation. The project evaluation will be conducted through a mid-term evaluation and an end-of-project evaluation.

59. **Learning from experience.** As scaling up the most promising CSA technologies and interventions is key for the project, learning from experience based on evidence generated through the M&E system remains key for reinforcing project results. Therefore, the project will strengthen the link between M&E and knowledge management and communication. The M&E evaluation system will support knowledge products and services that will be disseminated through a wide communication channel, targeting project beneficiaries and focusing on user-friendly communication tools.

60. **Accountability for results.** In addition to the M&E reporting requirement, the PASEC M&E system will involve an accountability mechanism and process (PSC meetings, stakeholder consultations, a Mid-term Review). Information-sharing and stakeholder involvement and participation at all stages of the project cycle will be a core component of the project's accountability for results. The project will ensure that stakeholders/ beneficiaries have access through various channels to timely, relevant, and clear information about the project's M&E findings and will incorporate their views in the project review and decision-making process.

61. **Institutional arrangements.** At the national level, the M&E Officer (NCU) will lead all aspects of M&E and will provide operational tools and instruments for data collection at the regional and local levels. NCU will collect and validate upstream reports and monitor information from the regional M&E specialists (RSUs) and from each of the national institutions involved in project activities to facilitate decision-making processes.

62. **Harmonization and integration with national and sectoral M&E systems.** PASEC will develop consistent efforts to empower national institutions in the M&E of project outcomes, ensuring that the system is strongly linked to the national M&E system for the 3N Initiative.

63. **Importance of the M&E system.** By producing timely and pertinent information, the M&E system will be a key management instrument aimed at helping the decision-

making process. Outcomes/results of activities will be measured by qualitative and quantitative indicators.

C. **Sustainability**

64. Project sustainability relies on a number of key considerations. First, the GoN is strongly committed to pursuing its key sectoral strategies, including the 3N Initiative and advancing the CSA agenda, as the country is a founding member of the CSA Global Alliance. Second, the project will: (i) contribute to increased competitiveness in the agriculture sector by improving productivity and resilience through access to improved agricultural technologies that will be demonstrated in FFSs; (ii) ensure sustainable support to farmers' access to agro-meteorological information and best practices for decision making; and (iii) support farmers' access to rural finance by establishing a matching grant mechanism for financing CSA packages. Third, the project will provide investments, through the integrated commune subprojects, to develop basic public infrastructure that will lead to the achievement of CSA's triple outcomes and address specific challenges such as improving connectivity between production basins and markets, protecting watershed against erosion, and reducing harvest losses. Fourth, the project will empower local-level stakeholders through trainings and capacity-building activities well-tailored to their specific needs. Fifth, an efficient knowledge management and sharing system will be defined and implemented to efficiently capitalize on lessons learned and mainstream them into national policies. Last, support to FISAN's operationalization will ensure sustainable funding for communes and the matching grant mechanism.

V. KEY RISKS AND MITIGATION MEASURES

A. **Risk Ratings Summary Table**

65. The overall project risk rating is *Substantial*. Risks associated with the project and inherent to its operating environment were identified during project preparation and mitigations measures are discussed in detail in the "Systematic Operations Risk-Rating Tool" (SORT) in Annex 4. The ratings are summarized in table 2.

Table 2: Systematic Operations Risk-Rating Tool (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	

OVERALL	Substantial

B. Overall Risk Rating Explanation

66. **The overall project risk is rated as *Substantial***. The integrated approach of the project is complex considering the lack of implementation capacity. The capacities of the MoA and communes will be strengthened to sustain project outcomes. To mitigate the high risk of "Institutional Capacity for Implementation and Sustainability," an intensive capacity-building process will be conducted along the project lifetime for farmers, farmers' organizations, communes, and national stakeholders. The project will fund technical assistance and training for identified gaps in knowledge and practices related to the project's objectives. Dialogue with development partners will ensure proper coordination in support of the overall government objectives.

67. **Political and governance risks are *Substantia***l. The *substantial* risk rating is based on current political developments that may impact the GoN's priorities (political interference in selection of beneficiaries and service providers, security concerns in the bordering areas of Mali, and the Boko Haram threat in Diffa region). The risk to security will remain a challenge and will likely affect World Bank implementation support to the project. To reach some target areas, the Bank will use third parties, including NGOs, to help monitor and provide effective implementation in insecure areas. The proposed project will mitigate political risks by delegating selected tasks to technical selection committees, and ensuring that those strictly abide by the selection procedures set forth in the PIM.

68. **Macroeconomic risks are *Substantial***. These risks stem from Niger's vulnerability to volatile commodity prices, its unpredictable climate, and the region's fragile security situation. A drought would exacerbate the threat of food insecurity and potentially require emergency food imports and would increase budgetary pressures. A new and significant deterioration of the security situation would challenge fiscal stability by both diminishing public revenues and increasing spending on security and on supporting refugees. The World Bank is collaborating with other UN agencies and bilateral partners to closely monitor the security situation.

69. **Institutional Capacity for Implementation and sustainability risks are *Substantial.*** The key risk associated with the institutional capacity for implementing and sustaining the project is related to the uncertainty regarding the client's capacity to sustain the outcomes of the operation beyond the World Bank's support as the country does not have adequate agricultural extension and advisory services. However, this issue is recognized as a top priority at the MoA, which has plans to allocate more staff in extension services. The implementation arrangements will ensure proper inter-sectoral coordination and multi-stakeholder mobilization.

70. **Fiduciary risks are *Substantial***. Perception of corruption is still high in the country. Niger was ranked 103 of 175 countries surveyed in Transparency International's 2014 corruption ranking. Risks of misappropriation and elite capture exist for the matching grant fund. As such, the fiduciary risks are *substantial*. The capacity-building efforts included in project design and strengthening of the sector accounting and auditing systems

should mitigate the risk. Procurement and FM arrangements are designed to mitigate fiduciary risks through regular financial and procurement planning and reporting, following Bank and GoN guidelines and practices.

71. **Environmental and social risks are *Substantial*.** The activities supported by the project are expected to have minimal environmental implications. However, because of the rehabilitation of irrigation infrastructure and the likely use of pesticides by farmers, the project was rated as Category B and eight safeguard policies are triggered: OP/BP 4.01 (Environmental Assessment), OP 4.09 (Pest Management), OP/BP 4.04 (Natural Habitats), OP/BP 4.36 (Forests), OP/BP 4.11 (Physical Cultural Resources), OP/BP 4.12 (Involuntary Resettlement), OP/BP 4.37 (Safety of Dams), and OP/BP 7.50 (Projects in International Waterways). To ensure compliance with Bank safeguards policies, the GoN prepared an Environmental and Social Management Framework (ESMF), which includes an Environmental and Social Management Plan (ESMP), an Integrated Pest and Pesticides Management Plan (IPPMP), and a Resettlement Policy Framework (RPF). These documents have been disclose before appraisal (March 15th, 2016 in-country and March 17th, 2016 in Infoshop).

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

72. **Rationale for public sector provision.** There is a strong economic rationale for the Bank to invest in climate change adaptation and mitigation. According to the Stern Review on the Economics of Climate Change (2006), the cost of climate change to the Global Economy is huge, resulting in a 7 percent gross domestic product (GDP) loss in Africa by 2100. The Stern Review highlights that given the strong correlation between growth and poverty reduction, a climate-driven reduction in GDP would increase the number of people below the USD 2 per day poverty line by 2100, and raise the child mortality rate compared with a world without climate change (Stern, 2006).

73. **Value added of World Bank's support in CSA in Niger.** The World Bank brings a long-term global and local experience and knowledge on climate change adaptation and mitigation, sustainable agriculture and support to local development planning in Sub-Saharan Africa in general and Niger in particular. Through the various phases of the Community Action Program (PAC), the World Bank strengthened Niger's capacity in local development planning and implementation, including the capacity to respond promptly and effectively to eligible crisis or emergencies. The Bank also financed the Community Action Project for Climate Resilience (PAC-RC) contributing to improving the resilience of populations and production systems to climate change.

74. **The Project activities are expected to generate three main benefit streams**: (i) farmers-, community- and commune-level benefits, such as increased crop yields, increased animal productivity, increased revenues, resilience to climate change risks, together with more intangible social benefits[4] such as improved nutrition, human capital

[4] These intangible benefits, that are difficult to quantify in monetary terms, were not quantified.

strengthening and women empowerment, (ii) public benefits, such as capacity development and institutional support to decentralized authorities to promote CSA interventions and mainstream them into communal investment plans; and (iii) more global benefits, such as natural resources protection and reduced GHG emissions which will contribute to achieve the INDC discussed at COP21 and the internationally accepted global goal of limiting global warming to 2°C above pre-industrial temperatures.

75. **Adaptation benefits**. Adaptation to climate change involves making changes that strengthens project beneficiaries to anticipate, avoid, absorb, accommodate or recover from the effects of adverse climate events, more particularly droughts in the context of Niger. Climate change adaptation and enhanced resiliency to shocks are dynamic concepts; hence, the analysis of adaptation activities has been modelled dynamically, more particularly for rain-fed systems that are more vulnerable to weather's vagaries. Assumptions and related bibliography are described in Annex 3.

76. **Mitigation benefits**. The EX-ACT tool was used to assess the mitigation impact of PASEC. The tool, developed by FAO, provides estimations of the impact of AFOLU projects on the carbon-balance. The carbon-balance is defined as the net balance from all GHGs expressed in CO2 equivalents (CO2e) that were emitted or sequestered due to project implementation as compared to a business-as-usual scenario. The main assumptions used are summarized in Annex 3.

77. **Economic analysis of PASEC**. The economic analysis assesses the overall project's net impact on economic welfare. To calculate the total incremental benefit stream resulting from the project, the analysis aggregated benefits arising from (i) sustainable increase of agricultural production (irrigated and rain-fed systems), (ii) sustainable increase of livestock production, (iii) increased carbon sequestration in soils and biomass (mitigation co-benefits) and, (iv) public infrastructures, such as rural roads.

78. **Results suggest the overall project is economically profitable, with an economic IRR of 16.4 percent and a NPV of US$ 98.2 million**[5]. Financial analysis performed on a wide sample of sub-projects (rain-fed and irrigated systems) also shows satisfactory results. Results are detailed in Annex 3. However, given the demand-driven nature of the project, results should be considered as indicative, rather than final. Good practice would be to re-run the EFA with actual figures during project implementation, more particularly at mid-term review.

79. **Sensitivity analysis.** A sensitivity analysis was performed using some of the main variables affecting the model, namely: (i) output prices, (ii) yields, (iii) adoption rates, (iv) drought severity, and (iv) social price of carbon. The sensitivity analysis also tested the impact of a decrease in the expected total benefit stream, for example due to more frequent shocks. Results, which are presented in Annex 3, show that results remain robust against changes in these variables, with positive NPVs and IRR above the opportunity cost of capital.

[5] With a 6 percent discount rate as per the recent "Technical Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects" (2015)

B. **Technical**

80. The project's design is based on the recommendations of the Agriculture Risk Assessment Study carried out by the Bank in 2013 as well as successful approaches developed under past and/or ongoing projects (for agriculture, climate resilience, rural finance, local development, technology dissemination, and access to information for farmers) that have already been replicated in other donor-funded projects (including Bank-supported projects). The priorities in national sector strategies for agriculture development and adaptation to climate change were taken into account. Communal integrated subprojects are demand-based and will cover all rural subsectors (agriculture, livestock, and natural resource management). Matching grant subprojects mixed with business advisory services will stimulate private sector development in the agriculture and agribusiness sectors. Overall, PASEC's interventions will increase yields of rainfed and irrigated crops, grow livestock systems in agricultural areas, and build farmers' resilience to climate change by facilitating access to information for decision making and agricultural services. The proposed CSA-integrated subprojects are inspired by the Climate Smart Village model tested on a small scale by CCAFS in Niger (Kampa Zarma site) and adapted to local conditions.

81. Attention will be given to the integrated aspect of the project, ensuring that comprehensive and relevant packages are financed for communes and that matching grant beneficiaries have access to business development services (including access to information and technology transfer). Adequate support and capacity-building services will be provided to communes to ensure that they effectively undertake all aspects related to the planning and implementation of integrated subprojects as well as to M&E with adequate support from deconcentrated technical services and other public and private service providers.

C. **Financial Management**

82. The financial management arrangements for the proposed Climate-Smart Agriculture Support Project will be implemented by the newly created National Coordination Unit (NCU) to be anchored at the General Secretary of the Ministry of Agriculture (MoA) which will be responsible for overall coordination and implementation of the activities under the proposed project.

83. The MoA is currently implementing three Bank financed projects, including: (i) Agro-Pastoral Export and Market Development Project (PRODEX) (P095210), (ii) Community Action Program Phase 3 (PAC3) (P132306), and (iii) the regional West Africa Agricultural Productivity Program APL (WAAPP-1C) (P122065) through three separate PIUs. These existing PIUs have a good track record and qualified and well experienced FM staff. The FM performance and FM risk were rated as following, moderately satisfactory and substantial, respectively, for the three projects, following the last supervision missions conducted in August 2015 for PRODEX, in September 2015 for PAC3, and in October 2015 for WAAPP-1C. Fiduciary compliance is deemed satisfactory for the three projects. In general, the interim non-audited financial statements (IFRs) have been submitted on time for the above projects, with acceptable quality. The last audited financial statements,

for the period ending December 31st, 2014, were submitted to the Bank in a timely manner, except the ones for PAC3 which were delayed, but all the three with an unqualified opinion.

84. Until the recruitment of the NCU staff, the Niger Agro-Pastoral Export and Market Development Project (PRODEX) (P095210) coordination unit will be responsible for the project implementation.

85. The MoA has already taken the following measures to mitigate the inherent weaknesses and financial management constraints related to the newly created NCU: (a) the ministerial order establishing and staffing of the newly created NCU, including the Regional Support Unit (RSU) has been signed; (b) the administrative, financial and accounting procedures manual is prepared and validated; (c) preparation and adoption of the Project Implementation Manual (PIM), including: (i) the detailed Matching Grants procedures; (ii) the detailed communes subprojects procedures; and (iii) the M&E aspects.

86. The other measures are: (a) appoint a Financial Management (FM) officer based on ToRs acceptable to the Association; (b) recruit a Principal Accountant, and an accountant based on ToRs acceptable to the Association; (c) recruit a principal internal auditor, and a junior internal auditor whose qualifications and experience and terms of reference (ToRs) are acceptable to the Association.

87. The dated covenants are: (a) recruit, not later than six (6) months after the Effective Date of the Financing Agreement, the external auditor referred to in Schedule 2 of the Financing Agreement and pursuant to terms of reference (ToRs) satisfactory to the Association; (b) acquire, and install, not later than three (3) months after the Effective Date of the Financing Agreement, and thereafter maintain accounting software acceptable to the Association, for the Project.

88. The conclusion of the assessment is that FM arrangements meet the Bank's minimum requirements under OP/BP 10.00. The residual FM risk of the project was rated as Substantial mainly due to the project design combination of size, complexity and innovation. The other factor explaining the substantial risk is in the control environment including – establishment of a new PIU to be duly staffed which could delay the start of the project implementation.

89. The "Guidelines on Preventing and Combating Fraud and Corruption in projects Financed by IBRD Loans and IDA Credits and Grants," dated October 15th, 2006 and updated January 2011, shall apply to the project.

D. **Procurement**

90. Procurement for the proposed project will be carried out in accordance with the World Bank's: "Guidelines: Procurement of Goods, Works and Non Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers," dated January 2011 and revised July, 2014; "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers," dated January 2011 and revised July, 2014; and "Guidelines on Preventing and Combating Fraud and

Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants," dated October 15, 2006 and revised January 2011; and the provisions stipulated in the Legal Agreement. The Borrower will prepare and submit to the Bank a General Procurement Notice (GPN) and will publish this additional GPN in United Nations Development Business (UNDB) online and in local newspapers of wide national circulation. The Bank will arrange for its publication in UNDB online and on the Bank's external website.

91. An assessment of the capacity of the Ministry of Agriculture, to implement procurement activities of the Project was carried out during the Project preparation and finalized during the appraisal. The assessment reviewed the organizational structure of the Ministry, the procurement capacities (past procurement experience, staff in charge of procurement, tools including manuals, procurement reporting, filing, use of software, etc.) and the interaction between the different ministries and agencies involved in the implementation of Project.

92. **The overall project risk for procurement is rated Substantial**. The residual risk is assessed as Moderate after the following measures are adopted:

- A qualified and experienced procurement specialist to be located at the NCU will be appointed to fully support all procurement activities for the Project, notably to ensure quality control and compliance with World Bank procedures. Qualified procurement assistants to be located at the NCU and regional levels within RSUs, depending of the volume of activities, will be appointed to support procurement activities.

- Complex procurement (all ICB, NCB, consultant selections) will be handled at the central level; procurement activities at the regional level will mainly be selected shopping and community based procurement.

- The PRODEX Unit will carry out all procurement activities of the PASEC until the recruitment of the NCU staff.

- A Procurement Plan (PP) for the first 18 months of program implementation was prepared during appraisal and the final version was discussed and approved during negotiations. During implementation, the PP will be updated as required - at least annually - to reflect actual program implementation needs and improvements in institutional capacity.

- The PRODEX manual of administrative, financial, and accounting procedures will be updated to take into account this project and notably to clarify the role of each team member involved in the procurement process of the project and the maximum delay for each procurement stage, specifically with regard to the review, approval system, and signature of contracts.

- The NCU will monitor closely the procurement plans and will exercise quality control on all aspects of the procurement process, including evaluation, selection and award on a monthly basis.

- A workshop will be organized at the beginning of the project to train/update all key stakeholders involved in procurement on World Bank procurement procedures and policies. Hands-on training of identified high level staff on Bank procurement procedures will be organized during the life of the Project.

- An adequate filing system will be set up for the project records at the level of NCU. The Project will finance appropriate equipment and the Procurement specialist will ensure compliance with Bank procurement filing manual.

93. Procurement capacity assessment and project procurement arrangements are detailed in Annex 4

E. **Social (including Safeguards)**

94. **The project was rated Category B** mainly due to: (i) the level of social risks and impacts anticipated in this operation as a result of the implementation of proposed Component 1 activities; and (ii) the site-specific nature of the anticipated risks and impacts of the project. Though the project does not anticipate physically displacing people, some of its proposed sub-activities under Component 1 may require acquisition of land plots or restriction of access to productive natural resources, and/or loss of incomes and livelihood resources that without proper precautionary measures taken in time could potentially lead to the involuntary resettlement of project affected persons (PAPs). Consequently, the World Bank's Policy on Involuntary Resettlement (OP/BP 4.12) is triggered. An RPF was prepared by the GoN and amply consulted upon. After validation by the National Bureau of Environmental Evaluation and Impact Assessment (BEEEI) and the World Bank, the RPF has been publicly disclosed in compliance with the principles set forth by the World Bank Group policy on disclosure (OP/BP 4.50); i.e., both in-country and at the InfoShop prior to project appraisal.

95. The RPF provides basic guidelines and prerogatives to be followed by project implementers to properly deal with any negative social impacts and risks associated with land acquisition that leads to the loss of access to livelihood resources with or without the involuntary physical or economic displacement of PAPs. The RPF provides clear principles and detailed guidance on how to avoid or minimize land acquisition and subsequent physical or economic displacement; it offers a valuation process, a consultation and participation component, a cut-off date by which deadline beneficiaries, especially PAPs, and compensation packages are defined; a user-friendly GRM, deeply grounded on local experience and habits/customs; an implementation arrangement to process the RPF including, wherever necessary, the need to prepare site-specific Resettlement Action Plans (RAPs) as deemed necessary; as well as an M&E process and an estimated budget to properly comply with the policy's core requirements.

96. To ensure proper implementation of the RPF and future site-specific RAPs, the project will include a Social Scientist/Development Specialist to be trained on social safeguards policies by the World Bank Safeguards Specialists of the project. The NCU social safeguard specialist will oversee both the screening process of subproject/sites, and the development of additional site-specific safeguards documents and ensure compliance

with the project's environmental and social safeguards instruments during implementation. Likewise, the Social Scientist/Development Specialist will monitor and evaluate the overall social development outcomes to ensure project performance.

F. Environment (including Safeguards)

97. The environmental and social impacts and risks of the project activities are expected to be *moderate* to *low*, mostly site-specific, and easily manageable to an acceptable level, typical of **Category B** projects. Activities proposed under Component 1 suggest the triggering of the following environmental and social Safeguard Policies: OP/BP 4.01 (Environmental Assessment), OP 4.09 (Pest Management), OP/BP 4.04 (Natural Habitats), OP/BP 4.36 (Forests), OP/BP 4.11 (Physical Cultural Resources), OP/BP 4.12 (Involuntary Resettlement), OP/BP 4.37 (Safety of Dams), and OP/BP 7.50 (Projects in International Waterways).

98. To comply with the above triggered policies' core requirements, the Borrower prepared an ESMF and an RPF, which includes an ESMP, an IPPMP, and a RAP. These were initially reviewed by the World Bank Safeguards Specialists and validated internally by the BEEEI through a national consultation process. Preparation of these safeguards instruments was indeed consistent with the overall approach to environmental and social issues in the project. More precisely:

- **Environmental And Social Management Framework**: Since the precise locations and potential impacts of future subprojects cannot be identified in advance , the ESMF provides the basis for the environmental and social preparation needed for the subproject investments. The ESMF/ESMP outlines an environmental and social screening process for future subprojects to ensure that they are environmentally and socially sound, sustainably implementable, and in line with GoN and World Bank operational safeguards policies and guidelines. A two-person team of Social and Environmental Safeguards Focal Points (SESFP) will be established at the NCU to adequately handle the implementation of social and environmental recommendations. The SESS will work in tandem with the World Bank Group Safeguards Specialist to ensure due compliance with core safeguards policies' requirements. Nonetheless, provisions are being made in the ESMF to address issues related to Physical Cultural Resources (OP/BP 4.11), Natural Habitats (OP/BP 4.04), and Forestry (OP/BP 4.36). Similarly, mitigation measures to avoid any pressure on the project's neighboring ecosystems (e.g., activities that could affect natural habitats and/or pristine forests are ineligible for project financing; adoption of reforestation actions in compliance with OP/BP 4.36 on Forestry) will be encouraged.

- **Integrated Pest and Pesticide Management Plan:** Project funds will not be used to purchase and distribute agrochemicals, nor will farmers' groups be encouraged to use more inorganic fertilizers and pesticides. Rather, the project will encourage farmers to do intensive agriculture using climate-smart and socio-environmentally friendlier methodologies. To ensure safe pest and pesticides management, the Borrower prepared an IPPMP that includes: (i) a survey of local bio-pesticides and agronomic technical practices to reduce the impacts of pests on agriculture value chains in project areas; (ii)

appropriate actions to reduce farmers' groups' exposure to pesticides used in agricultural production systems; (iii) guidelines to be adopted on the possibility of agrochemical application and disposal; (iv) training sessions to strengthen the capacity of different actors (farmers, local vendors, regional agricultural agents, etc.) on the proper use, storage, and disposal of agrochemical products; and (v) a coherent budget available in the project financing. The IPPMP was amply consulted upon and a participatory Grievance Redress Mechanism (GRM) was embedded to guide the steps to be followed to peacefully settle grievances.

- **Resettlement Policy Framework:** Some proposed project activities in Component 1 may lead to the acquisition of land that could result in the loss of assets and/or means of livelihood that could lead to the involuntary resettlement of people. Thus the Borrower prepared an RPF that sets forth the basic principles and procedures that both the Borrower and the World Bank must follow once the physical footprints of project activities are known in detail to properly mitigate any potential adverse social impacts (e.g., preparation of site-specific RAPs). As stated above, the RPF was extensively consulted upon and includes specifics such as valuation of assets, public consultation and participation, institutional arrangements, capacity building, M&E, a GRM, a budget, and a source of financing.

99. **Riparian Notification Letters** were sent to all riparian countries of the Niger River Basin in compliance with the triggering of OP/BP 7.50 to inform them of the intended project objective of drawing a certain negligible amount of water the Niger River and/or its adjacent river bodies as part its agriculture sector development objective. It also sensitizes riparian countries on the low-level risks and impacts of project activities. No objection from the Niger Basin Authority was received on February 3, 2016.

100. In its final design, the Project is not considering intervening in communes located in Lake Chad basin (Diffa region). There will not be any water withdrawal from Lake Chad and its tributaries.

101. The Bank staff have considered these aspects and are satisfied that the other riparians have given a positive response to the beneficiary state, in the form of consent, no objection, support to the project, that the project will not harm their interests.

102. **Project preparation and implementation**. Prior to project start, as soon as the implementation sites are better known, each subproject activity will be screened for social and environmental impact and risks; the systematic environmental and social screening as well as the subproject classification procedures are detailed in the ESMF. The screening and classification process of eligible subprojects will be carried out by the NCU's social and environmental safeguards specialists. To ensure consistency throughout the process, results of the environmental and social screening will be processed according to the national regulations and World Bank Group policies' core requirements. The ESMF and RPF include institutional arrangements outlining the roles and responsibilities for the various stakeholder groups involved, for screening, review, and approval of activities, as well as implementation and monitoring of their mitigation measures, including the proper usage of social and environmental clauses. The environmental and social mitigation

measures summarized in the ESMF, RPF, and IPPMP as well as the specific mitigation measures envisioned for the subprojects will be executed, monitored, and reported upon in the Environmental and Social Safeguards section of the overall project periodic report.

103. **Public disclosure of safeguards instruments**. In compliance with the disclosure of information policy (OP/BP 4.50) and national regulations' core requirements, the PIU, at the beginning of the project, initiated a series of public consultations and participation that continued throughout preparation of the safeguards instruments. BEEEI undertook a national validation workshop during which both the main technical reports and non-technical executive summaries were made available in both English and French. The three approved standalone safeguards instruments (ESMF, IPPMP, and RPF) have been made available on time in the form and language(s) needed to be understandable and accessible to the groups consulted. They were properly disclosed publicly both in-country (March 15th, 2016) and at the Infoshop (March 17th, 2016) prior to appraisal.

G. **Other Safeguards Policies Triggered**

104. OP 4.07(Water Resources Management) is triggered since the integrated subprojects may include water resources management and small/medium scale irrigated schemes. Proper water resources management is the whole purpose of the Niger's Water Code, which aims to promote "Integrated Water Resources Management" (IWRM).

105. The project will ensure that integrated subprojects will be economically viable, environmentally sustainable, and socially equitable. Screening will further be carefully applied on each individual subproject to determine: (i) subproject categories; (ii) policies to be triggered; and (iii) additional safeguards instruments to be prepared prior to their physical implementation.

H. **Public Consultation and Participation (including Gender & Citizen Engagement)**

106. PASEC's overall activities are expected to provide huge positive socioeconomic and environmental benefits to hundreds of thousands of Nigerien beneficiaries whose main livelihoods depend largely on agricultural sector. This operation aims to help cope with the country's environmental challenges and food scarcity. As described in the standalone safeguards instruments (ESMF, RPF, and IPPMP), transparent and engaging stakeholder participation workshops were well-organized throughout the project intervention areas in the country. Women, youth, and vulnerable groups (the disabled, the elderly, etc.) were systematically identified and freely engaged throughout the process. Because of the central role women play in agriculture, and given the government's ambitious program on youth involvement in the agriculture sector, the project will ensure that these two social subgroups are kept fully engaged throughout the project lifecycle.

107. Consultants, together with GoN officials and local leaders, held a series of intensive stakeholder meetings (open and/or focus group discussions) that allowed groups and/or individuals to freely engage in the strategic thinking about the project's objectives and activities. These ideas were adequately consolidated and project beneficiaries' concerns, visions, and needs were carefully and adequately incorporated into the draft-final

standalone safeguards instruments. These were carefully reviewed and vetted by the two World Bank Group Social and Environmental Safeguards Specialists, and underwent a final round of public consultation and participation through a national validation workshop led by BEEEI in December 2015. Outcomes of these rounds of participatory citizen consultation and engagement have influenced the final design and framing of CSA activities to create Ownership (beneficiaries "own" the PDO and buy into it) and foster Social Accountability (in showing ownership, beneficiaries express their full determination to ensuring that the project is successfully implemented), which together are meant to encourage the project's Sustainable Development among and within beneficiary communities in the country.

108. Once this final round of public consultation was completed, the Borrower submitted the final draft of the three standalone safeguards instruments to the World Bank Group's acting-regional safeguards advisor (RSA) for concurrence and approval. These instruments were publicly disclosed both in-country (March 15th, 2016) and at the Infoshop (March 17th, 2016) prior to appraisal. Since consultation and participation is an iterative process, all stakeholders will be kept engaged at different stages and throughout the project lifecycle.

I. World Bank Group Grievance Redress Mechanism

109. Communities and individuals who believe that they are adversely affected by a World Bank–supported project may submit complaints to existing project-level GRMs or the World Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project-affected communities and individuals may submit their complaints to the World Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of World Bank noncompliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention and Bank management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate GRS, please visit www.worldbank.org/grs. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

ANNEX 1: RESULTS FRAMEWORK AND MONITORING
NIGER: CLIMATE-SMART AGRICULTURE SUPPORT (P153420)

The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency

PDO Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values (Year)					Frequency	Data Source/ Methodology	Responsibility for Data Collection 1	Description (indicator definition etc.) 2
				1	2	3	4	5				
Direct project beneficiaries Of which female	X	Number of beneficiaries	0	50,000	100,000	200,000	400,000	500,000	Annual	Survey	NCU M&E	Number of beneficiaries, on the basis of 15% of the population of the considered communes
	X	%female	0	40	40	40	40	40	Annual	Survey	NCU M&E	Percentage of female out of total beneficiaries
CSA Triple Outcomes Indicators **1. Productivity:** Agricultural productivity increase in the project areas		Percentage	Millet: 320 kg/ha Sorghum: 205 kg/ha Cowpea: 120 kg/ha Irrig. Rice: 4t/ha	0	5	10	30	50	Annual	Survey	NCU M&E	Percentage of increase in agricultural yield
2. Mitigation: Reduced net GHG emissions per unit of food (energy and protein equivalent)		Percentage	NA (baseline study)	0	10	15	20	30		Study	NCU	The GHG emission intensity (emission per unit of product) includes all direct and indirect emissions, as well as changes in soil carbon stocks
3. Resilience: Increased adoption of new agricultural and management practices promoted by the project		Percentage	NA (baseline study)	5	10	15	20	25		Survey	NCU	The adoption rate of improved agronomic and management practices by project beneficiaries
INTERMEDIATE RESULTS												
Component 1: Investments for Scaling Up Climate-Smart Agriculture												
Subcomponent 1.1 - Financing for CSA-integrated subprojects at commune level												
Number of communal subprojects granted with environmental and social management plan that have been implemented		Number of sub-projects	0	15	44	69	88	88		Project reports		Integrated CSA subprojects prepared by communes and financed by the project
Percentage of communes whose approved subprojects integrate gender equity		Percentage	0	100	100	100	100	100	Annual	Project Reports Subprojects Assessment	NCU	This refers to initiatives addressing: (i) the specific needs of women and men (well-tailored training programs gender sensitive, etc.); and (ii)

The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency												
PDO Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values (Year)					Frequency	Data Source/ Methodology	Responsibility for Data Collection 1	Description (indicator definition etc.) 2
				1	2	3	4	5				
												interventions specifically targeting women as main beneficiaries
Area provided with irrigation and drainage services	X	HA	NA	200	1000	1800	2800	3400	Annual	Supervision missions and Annual Report	NCU	Total area covered with irrigation systems (works and/or equipment)
Land area where sustainable land management practices have been adopted as a result of the project	X			5,000	30,000	60,000	80,000	100,000	Annual	Supervision missions and Annual Report	NCU	Sustainable land management practices identified are assisted natural regeneration, tree planting on agricultural land, Pasture rehabilitation using demies-lunes, afforestation of dunes, Living hedges protecting croplands and irrigated perimeters, afforestation
Number of communes that have developed Integrated Climate-Smart Investment Plans		Number	0	22	44	44	44	44	Annual	Supervision missions and Annual Report	NCU	Communes that have prepared and validated an Integrated Climate-Smart Investment Plans satisfactory to the NCU
Percentage of targeted communes that have constructed pastoral infrastructure to support CSA		Percentage	NA	5	20	40	50	60	Annual	Supervision missions and Annual Report	NCU	Pastoral infrastructure: watering points, animal health infrastructures, animal feed warehouse Market infrastructure: roads, market, cattle market
Subcomponent 1.2 - Inclusive enterprise development for sustainability of CSA												
Number of matching grants implemented		Number	0	250	250	1000	1500	2000	Annual	Supervision missions and Annual Report	NCU	Number of matching grants financed and implemented
		% female	0	40	40	40	40	40	Annual	Supervision missions and Annual Report	NCU	Percentage of women benefiting from the matching grant facility
Component 2: Innovative Practices and Improved Service Delivery for Mainstreaming Climate-Smart Agriculture												
Subcomponent 2.1 - Technology transfer												

The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency												
PDO Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values (Year)					Frequency	Data Source/ Methodology	Responsibility for Data Collection 1	Description (indicator definition etc.) 2
				1	2	3	4	5				
Number of Farmers Field Schools implemented		Number		60	90	180	180	180	Annual	Supervision missions and Annual Report	NCU	Number of farmers field schools (FFS) established and operational
Number of facilitators trained		Number		60	90	180	180	180	Annual	Supervision missions and Annual Report	NCU	Number of farmers trained as facilitators for the FFS operation
Subcomponent 2.2 - Improved access to information												
Percentage of farmers receiving agricultural information through community rural radios		Percentage	0	10	50	60	60	60	Annual	Supervision Missions, surveys, and Annual Report	NCU	Number of farmers receiving agricultural advisory information out of total farmers
Percentage of farmers using climate information for agricultural production			0	0	10	15	20	25	Annual	Supervision Missions, surveys and Annual Report	NCU	Number of farmers receiving and using climate information out of total farmers
		% female	0	40	40	40	40	40	Annual	Supervision missions and Annual Report	NCU	Number of female out of total farmers receiving and using climate information
Targeted Beneficiaries are satisfied with specific project interventions (e.g. improved service delivery, farmer field school, trainings etc.) ,		Percentage	0	80	80	80	80	80	Annual survey	Supervision Missions, surveys, and Annual Report	NCU	Number of beneficiaries that are satisfied with the Project's interventions out of total beneficiaries
		% female	0	80	80	80	80	80	Annual survey	Supervision missions and Annual Report	NCU	Number of female out of total beneficiaries that are satisfied with the Project's interventions
Subcomponent 2.3 Support to national institutions for improved service delivery and policy dialogue												
Number of commune officials and technical staff trained		Number	0	220	440	440	440	440	Annual	Supervision missions and Annual Report	NCU	Communes officials and staff trained with the Project support to better prepare and implement CSA plans and corresponding integrated sub-projects

The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency												
PDO Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values (Year)					Frequency	Data Source/ Methodology	Responsibility for Data Collection 1	Description (indicator definition etc.) 2
				1	2	3	4	5				
Subcomponent 2.4 Supporting innovation for agriculture development												
An e-voucher agricultural input subsidy platform is established and operational		Y/N	N	N	Y	Y	Y	Y	Annual	Supervision missions and Annual report	NCU	An agricultural inputs subsidies electronic management platform based on surveys and targeting vulnerable farmers.
Number of vulnerable farmers receiving subsidies from the e-voucher agricultural input subsidy platform		number	0	0	5000	10000	20000	20000	Annual	Supervision missions and Annual report	NCU	Farmers that are receiving agricultural subsidies from the e-voucher platform
		% female	0	40	40	40	40	40	Annual	Supervision missions and Annual Report	NCU	Number of female out of total farmers that are receiving agricultural subsidies from the e-voucher platform
A remote sensing, application for monitoring crop performance is established and operational		Y/N	N	Y	Y	Y	Y	Y	Annual	Supervision missions and Annual report	NCU	Application for crop performance monitoring
Component 3: Contingency Emergency Response												
Time taken to make funds available as requested by GoN for an eligible crisis or emergency	X	Week	-	4	4	4	4	4	Annual	Supervision missions and Annual Report	NCU	Target of four weeks to make funds available, as needed. Values are not cumulative
Component 4: Project Coordination and Management												
Percentage of management reports (M&E, safeguards, procurement, FM) presented within 45 days of the end of the relevant period		Percentage	-	100%	100%	100%	100%	100 %	Annual	Supervision missions and Annual assessments/survey	NCU	Number of management reports submitted on due time out of the total reports.
Percentage of procurement activities executed in conformity with the procurement plan, the implementation manual, and IDA procedures		Percentage	0	100	100	100	100	100	Annual	Supervision missions and Annual report	NCU	Percentage of procurement activities implemented without exception
Number of annual audit reports submitted on time with no major qualifications		Number	0	1	2	3	4	5	Annual	Supervision missions and Annual Report	NCU	Number of financial audit reports

The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency												
PDO Level Results Indicators	Core	Unit of Measure	Baseline	Cumulative Target Values (Year)					Frequency	Data Source/ Methodology	Responsibility for Data Collection 1	Description (indicator definition etc.) 2
				1	2	3	4	5				
A national M&E system is established and operational		Y/N	N	Y	Y	Y	Y	Y	Annual	Supervision missions and annual report	NCU	Approaches and tools to capture project implementation progress and impacts are functional.
Grievance Redress Mechanism established and operational		Y/N	N	Y	Y	Y	Y	Y	Annual	Supervision missions and Annual report	NCU	Mechanism to ensure that complaints are being promptly reviewed and addressed

ANNEX 2: DETAILED PROJECT DESCRIPTION

Niger: Climate-Smart Agriculture Support Project (PASEC- P153420)

I. Background and General Project Features

1. **Agriculture is the most important sector of Niger's economy, accounting for over 40 percent of national GDP and the principle source of livelihood for over 80 percent of the country's population.** The performance of the agriculture sector, however, has been quite volatile, and as a result, food insecurity and malnutrition remain big concerns for Niger. Climate change is likely to exacerbate the food security situation in Niger.

2. **The agriculture sector risk assessment conducted by the World Bank in Niger in 2013 serves as the analytic underpinning of the project**. The risk assessment highlighted the exposure and vulnerability of Niger to frequent risks, primarily drought, and indicated that risk and volatility might be seen as the new normal under the context of a changing climate. A shift from *ex-post* crisis response to *ex-ante* risk management is required in Niger, and this project aims to put in place structures and measures that will allow farmers to better manage risks and will enhance the resilience of farming households and the agriculture sector.

3. **The proposed Niger Climate-Smart Agriculture Support (PASEC) project is seen as an anchor operation under the Government of Niger's (GoN) 3N Initiative**, and will contribute to achieving the GoN's objectives in agriculture as defined in policy and action areas of the 3N Initiative. The proposed project aims to deliver on the "triple outcomes" of climate-smart agriculture (CSA) through:

(i) Supporting sustainable increases in productivity and farm incomes **(food security)**;

(ii) Contributing to strengthening resilience to the impacts of climate **(adaptation**); and

(iii) Reducing greenhouse gas (GHG) emission intensity and increasing sequestration (**mitigation)**.

4. **The project follows a flexible, demand-driven, bottom-up approach to drive investments at the commune and household levels to deliver on the triple outcomes of CSA**. It also follow a value chain approach and intervenes at relevant points in the system to improve service delivery. The project design is based on the following core principles:

(i) **Flexibility**: Considering the fragile environment and limited capacity, the project will incorporate flexibility to adapt to the changing environment and be able to respond to emerging needs of beneficiaries and clients.

(ii) **Scalability**: The project will scale up the most promising technologies and interventions from Bank-funded and other donor projects in Niger.

(iii) **Value chain approach**: The project will work across the commodity value chains (input, production, processing, output markets etc.) and provide support

to enterprises, producers, and make public investments that will contribute to achieving the three outcomes of the project as well as improving the functioning of the value chains

(iv) **Gender sensitivity**: The project will analyze potential interventions from a gender perspective and try to benefit, as far as possible, women through its interventions. The livelihood diversification subcomponent will be primarily geared toward female participants. Also, components involving grants and disbursements of assets will prioritize female beneficiaries. Special care will be paid to ensure that interventions do not contribute to increased drudgery and burden for women.

(v) **Nutrition-informed**: The project will favor those interventions and leverage the activities of other projects that have a direct link with improving the nutritional outcomes of project beneficiaries.

(vi) **Complementarity with other interventions**: The project will scale up actions and contribute to the achievement of higher-level goals. This approach will ensure alignment with the projects developed under the Pilot Program for Climate Resilience (PPCR) and the Family Farming Development Programme (ProDAF) funded by IFAD. The preparation process and the project's design will be informed by the National Resilience Priority (NRP) prepared under the Global Alliance for Resilience - Sahel and West Africa (AGIR) supported by the European Union.

(vii) **Market development**: The project will support market development and entail stronger private sector engagement to ensure sustained service delivery during and after the project intervention.

(viii) **Landscape approach**: In the targeted areas and production systems, the project will promote sustainable landscape management with coordinated interventions at spatial scales (communes) that attempt to optimize the interactions among a range of land cover types, institutions, and activities. This sustainable landscape management will: (i) optimize the management and integration of different activities depending on natural resources (agriculture, livestock, forestry); (ii) take into account the external environment (decentralization context, policies, regulations, markets, etc.) that might alter the relation between the stakeholders; and (iii) encourage inclusive stakeholder consultations to maintain and enhance the services they provide.

(ix) **Bottom-up approach**: The project will adopt a bottom-up, demand-driven approach rather than a top-down, prescriptive approach to guide investment decision making. Through a participatory process to select commune subprojects and matching grants, beneficiaries will articulate and raise their demand for activities that meet their specific requirements as well as contributing to the triple outcomes of CSA.

II. Project Development Objective

A. Proposed Development Objectives

5. The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency.

B. Project Area and Beneficiaries

6. **The project intervention area covers the regions of Dosso, Maradi, Tahoua, Tillabery, and Zinder**. The project's activities will be concentrated in 60 municipalities located in the bioclimatic zone between 400 mm and 600 mm, highly vulnerable to food insecurity but with huge potential for increasing agricultural productivity and resilience of production agro-silvo-pastoral systems. These communes cover an area of 54,810 km² (4 percent of the territory) and are home to 3.9 million inhabitants (23 percent of the total population of Niger) distributed in 529,789 households.

7. **The project intervention targets mixed crop-livestock systems of the rainfed millet and sorghum belt**. Millet is the predominant crop of this belt, where rainfall is lower and soils are sandier, while substantial amounts of sorghum are grown elsewhere. Cowpeas are a major accompaniment to staple grain and are an important cash crop. The poor segment of the population cultivates less than 2 ha of land, owns few ruminants, and relies on its own labor for cash income. The better-off segment of the population cultivates 5-20 ha, sometimes on share cropping. The intervention area is dominated by mixed crop-livestock systems, where most households have cattle, small ruminants, and poultry. About a third of Niger's ruminant herd is located in the project area, where livestock and their related products are the main source of cash. Owning livestock, particularly cattle, often determines the wealth of a household.

8. **In each commune, the project will directly intervene in territories that are major cereal production areas and highly exposed to weather risks**. The identification of areas of concentration of investments in each commune or group of communes will be done in a participatory manner and on the basis of a CSA communal investment plan embedded in the PDC (*Plan de Développement Communal/* Communal Development Plan).

9. **Project direct beneficiaries are estimated at about 500,000 farmers and agro pastoralists who will benefit from integrated commune sub-projects**. Producer organizations, women, youth, and vulnerable groups, and micro small and medium enterprises will also directly benefit from the project activities. It is anticipated that 40 percent of the total direct beneficiaries will be women.

10. **The indirect beneficiaries will be the representatives of local government and technical services of Ministries of Agriculture, Livestock, Public Administration and Rural Development**. Representatives of these institutions will benefit from technical and institutional capacity-building initiatives under the project.

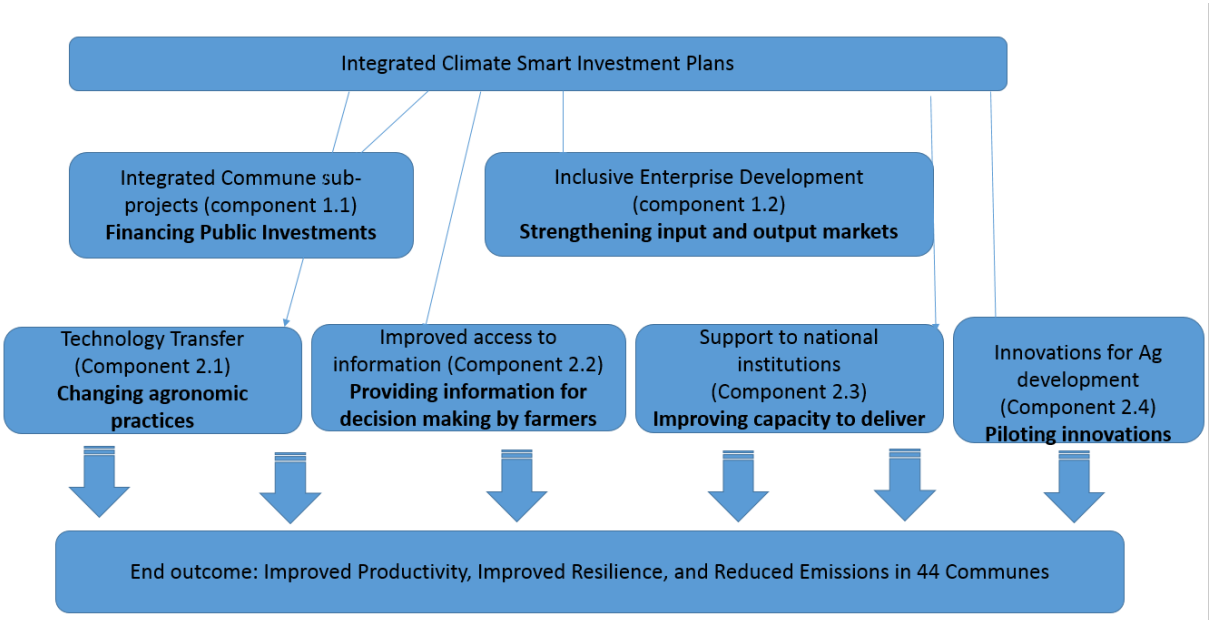
III. Project Description

11. To achieve the PDO, the Project will develop a demand-driven and integrated approach focusing on activities that will: (i) improve the utilization rate of selected and drought-tolerant seeds; (ii) increase the number of farmers using irrigation; (iii) increase the use of agroforestry and conservation agriculture techniques to minimize climate risks and enhance food security; (iv) promote the reclamation of degraded agro-pastoral land; (v) protect the watershed from erosion and secure irrigation potential; (vi) promote livestock and other high potential value chains (dairy, poultry, crops, vegetables, aquaculture, fruits trees, animal feeds and mechanization); and (vii) improve market access. Meanwhile, the project will enhance the capacity of local governments, farmers' organizations, national information systems, rural and agricultural advisory service providers, training institutes, incubation centers, and financial institutions to provide goods and services to meet the needs of communities and farmers.

A. Project Components

12. The project is organized into four components: (i) Investments for Scaling up Climate-Smart Agriculture; (ii) Innovative Practices and Improved Service Delivery for Mainstreaming Climate-Smart Agriculture; (iii) Contingency Emergency Response, and (iv) Project Coordination and Management. The following figure provides an overview of components I and II of the project.

Figure 2 : Project Description

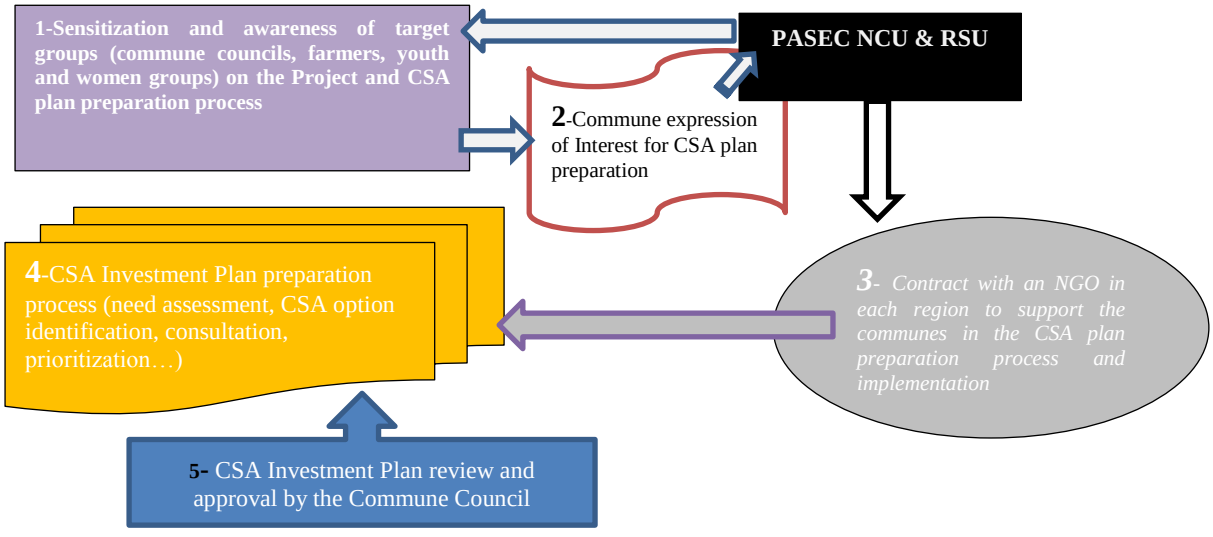


Component 1: Investments for Scaling up Climate-Smart Agriculture

13. **The objective of Component 1 is to implement integrated packages of practices that contribute to CSA's triple outcomes, at scale, by investing at both the commune and private levels.** In each commune, an Integrated Climate-Smart Investment Plan (ICSIP) will be developed, drawing on the PDC. The ICSIP will integrate investments by communes (subcomponent 1.1) and farmers' groups and entrepreneurs (subcomponent 1.2) in a range of domains (e.g., irrigation, input delivery, marketing infrastructure) with the aim to: (i) increase productivity and agro-forestry-pastoral production; (ii) strengthen the resilience of production systems to climate change and other agricultural risks; (iii) reduce emissions of GHGs per unit of product; and (iv) facilitate producers' access to market infrastructures and their integration into commercial value chains.

14. **Integrated Climate Smart Investment Plans (ICSIPs) will set the priority themes** (e.g., livestock production, resilient sorghum production) and areas of interventions (e.g., group of villages, watersheds) in view of local needs and resources. The plans will ensure that a critical level of investment is reached to obtain sizeable impact. NGOs will be recruited in each region to support the communes to prepare their Integrated Climate-Smart Agriculture Investment Plan. This will be done through a bottom-up and participatory approach to identifying needs and programming investments leading to CSA outcomes at commune level. This approach will take account of participatory planning principles described in the national development of the PDC Guide and its annexes relating to the consideration of climate change and gender. The preparation of Integrated Climate-Smart Agriculture Investment Plans include five steps as shown in the following figure.

Figure 3: CSA Investment Plan preparation process



15. **Focus is on investment in the public and private domain to stimulate adoption of packages of practices and technologies that contribute to CSA's triple outcomes.** Subprojects at the commune level (subcomponent 1.1) will essentially consist of those investments that require communal management or

facilitation and that are necessary to create the conditions for private investment (subcomponent 1.2).

Subcomponent 1.1 - Financing of CSA communal integrated subprojects

16. **The purpose of the subcomponent is to finance CSA sub-projects for communes that request it.** From the CSA Investment Plan (developed with the support of an NGO to be recruited by PASEC), communes will prepare through a participatory and inclusive approach, communal integrated sub-projects which will determine all operations leading to the CSA outcomes to be supported by PASEC.

17. The subprojects are investments that are of collective interest and should be implemented at communal level to create conditions for private investment. Local authorities are responsible for developing the ICSIP in a participatory and inclusive manner with the support of local technical services and private providers (NGOs) contracted by PASEC. PASEC support to communes will require compliance with the provisions defined in the Project Implementation Manual; this will include further technical assistance in sub-project implementation, monitoring and evaluation by private service providers and public entities.

18. **Development of ICSIPs and CSA communal integrated sub-projects:** Based on the local CSA investment options and existing PDCs, the project will recruit specialized NGOs (One NGO per region) to support 44 communes to develop ICSIPs through a bottom-up, participatory approach. This planning process will take into account the participatory planning principles described in the guidelines for PDC preparation and its annexes related to gender and climate change. The CSA planning process will take into account current experiences in communes and certain types of interventions that may involve several communes, such as watershed management, management of water resources, development and management of rangelands, or even control of certain animal diseases. The ICSIP will identify priority areas, communities, and value chains in the commune and will contain all the relevant investments (irrigation infrastructure, sustainable land management, pastoral investments, post-harvest infrastructure, access to market infrastructure, etc.) to be made at the commune and private level. Within the context of the ICSIP, specific investment plans will be developed for communes – communal subprojects – and financed through PASEC. Guidelines for ICSIPs were developed during project preparation. Communes will receive support from service providers (NGOs) for ICSIP and integrated sub-projects preparation. Each participating commune will need to prepare commune-level CSA plans that will elaborate various subprojects for potential financing by the project. It is expected that all the ICSIP will be prepared during the first year of the project (Annex 5).

19. **The ICSIP and CSA communal integrated subprojects may be biennial or triennial depending on the nature of the investments made by the communes.** The ICSIP will target the most vulnerable populations/areas of the commune, for whom investment is most critical. Particular attention will be given to youth and women. Nearly 500,000 farmers will benefit from the communal subprojects.

20. An integrated subproject will be a combination in a local community or group of crop land that may help achieve one or more of the following objectives: (i) improving soil fertility and water management for rainfed crops; (ii) water control and increase in small and medium scale irrigated; (iii) support for livestock integration; (iv) improved market access; and (v) improved agroforestry and natural resource management. These five categories of interventions were selected after an exhaustive review of interventions proven to be successful in improving productivity, building resilience, and reducing GHG emissions in dryland conditions.

21. **As part of the preparation process, the Client has recruited a consultancy firm to prepare a toolkit for ICSIP and integrated sub-project preparation**. The toolkit will include the guidelines for ICSIP preparation, the guidelines for integrated sub-projects, the guidelines for related safeguards documents and the related template for easy reference during implementation. Based on the toolkit and templates documents provided by this consultancy firm, it is expected that ICSIP and related integrated sub-projects will be available within the first 9 months and this will be one of the first activities initiated by the project.

22. Table 3 provides an illustrative positive list of the potential types of activities that could be supported under the five intervention categories. This list is indicative, not exhaustive, and the sub-project review committee (CRAP) will consider all activities, beyond the positive list below, that could contribute to the triple outcomes of CSA and meet the eligibility criterion described in the Project Implementation Manual. Activities will be selected for their demonstrated effectiveness and attention will be paid to the institutional implementation framework, in view of the project's objective to upscale successful practices. In particular, the ICSIP teams will review lessons learned from past SLM interventions. To be eligible, the integrated sub-project will need to include an activity or a combination of activities that together deliver on CSA's triple outcomes.

23. **Capacity building at commune level:** The commune is the principal entry point for project intervention and is the geographic focus of the project. The communes' current capacity to design and implement programs is quite weak and the need is strong to build the capacity of commune-level public officials. The following activities will be supported:

24. **Training of commune officials and technical staff:** To build capacity of frontline technical and administrative staff at the commune level, the project will finance number of activities, including: (i) technical training in CSA; (ii) management training; and (iii) regular workshops and exposure visits to ensure information flow and knowledge exchange.

25. **Training of commune and regional review committees**: Technical review committees will be created under the project to screen and approve the CSA communal integrated subprojects proposals. The project will finance the training of these committees on how to evaluate the proposals, guidelines, and positive list, and how to assess the triple outcomes for activities not included in the positive list.

26. **Information toolkits**: The project will finance development of information toolkits easily accessible to end users (in both French and local languages), including

leaflets, games, brochures, posters, reports, and other information-sharing support tools, including documentary films and local radio broadcasting

Table 3: Indicative List of Activities for potential inclusion in integrated CSA Subprojects

	Productivity	**Resilience**	**Mitigation**
I. Soil and water management			
Koris embankments and treatment	X	X	
Dredging of waterways	X	X	
Development of ponds	X	X	
Sustainable Land and Water Management work (half-moons stone barriers; the Zais; the dune fixation, the weirs; establishment of nurseries, reforestation)	X	X	X
Water resource mobilization and infrastructure (weirs, wells, boreholes)	X	X	
Promotion of alternative energy sources (biogas or solar, etc.)	X	X	X
Conservation agriculture (agroforestry, windbreaks, fences)	X	X	X
Compost production plant (household waste management)	X	X	X
Supporting communal seeds stock for emergencies	X	X	
II. Small- and medium-scale irrigation			
Development of new small-scale irrigation schemes	X	X	
Rehabilitation of small-scale irrigation schemes	X	X	
Rehabilitation of medium-size irrigation schemes	X	X	
Promotion of water and energy conservation technologies for water lifting (possibly solar, treadle, and energy-efficient pumps)	X	X	X
Promotion of water conservation technologies for water distribution (drip irrigation and California system)	X	X	X
Interventions that reinforce protection of irrigation schemes and availability of water: including as defined in ICSIPs: (i) infiltration weirs to improve recharge while reducing erosion phenomena of koris; (ii) small earth dams for water mobilization; (iii) contained or implementation of protective ditches, irrigated sites, and production areas against floods; (iv) protection against water erosion and wind erosion; (v) protection against stray animals; and (vi) the application of good management practices and drainage.	X	X	
III. Livestock integration			
Equipment and initial stock for small ruminant and cattle fattening	X	X	
Crop residue chopping, storage material, and facilities	X	X	
Infrastructure for vaccination and support to local (village) livestock services	X	X	
Manure storage	X	X	
Feed storage facility	X	X	
Demarcation and restoration of communal grazing land (used by local populations and pastoralists)	X	X	X
Water borehole	X	X	
Feed shop	X	X	
IV. Market access			
Rural roads		X	
Market infrastructure development	X	X	

Development of storage infrastructure (food and fodder banks)	X	X	
Supporting village and communal input shops	X	X	
V. Agroforestry and natural resource management			
Farmer Managed Natural Regeneration (FMNR)	**X**	**X**	**X**
Windbreaks, hedgerows, enhanced clearing, live-hedge	X	X	X
Support the management of classified forests and the Sahel Eco-farm	X	X	X
Promotion of non-timber forest products	X	X	X
Creating agro-forestry parks	X	X	X
Nursery (village or individual)	X	X	X
Promoting alternative domestic energy/reducing wood energy utilization	X	X	X

Subcomponent 1.2 - Inclusive enterprise development for sustainability of CSA

27. **To sustain and scale up the adoption of CSA-integrated approaches within and beyond the project, it is important to support producers' groups and micro small and medium (MSMEs) to undertake activities that strengthen input and output markets and create conditions for successful adoption of improved practices.** Under this sub-component, the project will support investments in the following three areas: (i) Business development services support for matching grant recipients (US$5 million) and (ii) Operate a matching grant facility (US$10 million).

28. **Matching grant facility for farmers organizations, SMEs, youth and women groups:** The aim of the matching grant facility is to compensate for suitable term and investment finance and to stimulate investment activity where targeted beneficiaries operate under severe constraints, particularly the lack of equity and ultimately facilitate access to commercial credit. Under this subcomponent, the project will provide matching grants amounting to US$10 million. The grant will primarily finance productive assets and investments to provide one time support to individuals and group enterprises. The support for investment capital enables integration into private financing ecosystem through accumulation of assets that could potentially be used as collateral. It is expected that the working capital will come primarily from credit or own contribution. The matching grant facility could partially finance working capital but that has to be less than 10 percent of the total grant value and primarily for group enterprises. Grants will be given to the following three categories of beneficiaries: (a) women and youth groups; (b) producers' organizations; and (c) Micro Small and Medium Enterprises MSMEs.

29. **Business development services support for matching grant recipients:** While the number of groups and MSMEs operating in Niger's agriculture sector is growing, their overall managerial and technical capacity is quite weak. The matching grant needs to be supplemented by "soft support" to improve the chances of success. The project will allocate US$5 million for business development services (BDS) support for matching grant recipients (women and youth groups, producer organizations, and MSMEs) to build their capacity to successfully implement their proposals which are aligned with commune CSA investment plans. In each region, the project will recruit BDS providers (NGOs and private companies) to: (a) build a pipeline of potential applicants and provide support to grant recipients in refinement of the project proposal; (b) facilitate access to finance for grant recipients; (c) provide

management trainings for grant recipients; (d) organize technical trainings with specialized technical institutions for grant recipient; (e) provide technical backstopping and management support to grant recipients over a pre-agreed period; and (f) monitor and report to the NCU and communes.

30. **Only activities, or a combination thereof, that directly or indirectly contribute to CSA's triple outcomes will be considered for the matching grant facility**. The following five category of projects will be considered eligible to receive a matching grant: (a) rainfed production systems; (b) irrigation; (c) livestock integration; (d) agro-processing; and (e) input delivery. Table 4 provides an illustrative positive list of the kind of projects that might be considered for matching grants. This list, however, is illustrative and the matching grant review committee will use the criterion described in the implementation manual, including evaluation of how the potential proposals might contribute to the triple outcomes of CSA, for considering proposals eligible for receiving matching grants from the project. In addition to the matching grant, owner's contribution and, where appropriate, commercial credit (through banks or MFIs) will be other sources of financing.

Table 4: Indicative Positive List of Activities for Inclusive Enterprises Development

	Productivity	**Resilience**	**Mitigation**
I. Rainfed crop production			
Drought-tolerant seed production	X	X	
Purchase of agricultural equipment and machinery			
Conservation agriculture and integrated soil fertility management (Zaï, mulching, fertilizing trees, crop rotation, etc.)	X	X	X
Devices preventing wind erosion (haie-vive, windbreaks)	X	X	
Integrated pest management	X	X	
Compost production	X	X	X
Storage infrastructure and other technologies to reduce post-harvest losses		X	
II. Small-scale irrigation			
Irrigation sale and service/maintenance shops (drip irrigation, solar irrigation, treadle pumps, etc.)	X	X	
Purchase of individual pumps and pipes by farmers' group and enterprises	X	X	
Use of water conservation technologies for water distribution (drip irrigation and California system)	X	X	
Wells	X	X	
III. Livestock integration			
Fodder production and sale	X	X	X
Small ruminant rearing and fattening	X	X	X
Cattle rearing and fattening	X	X	X
Equipment for natural fodder harvesting	X	X	
Irrigated fodder production, processing, storage units	X	X	X
Nutritional block processing units, including storage facilities for raw material and blocks	X	X	X
Village poultry production (initial stock, housing, feed storage)	X	X	
Intensive fish production	X	X	
Development of animal habitats			
IV. Agroprocessing			
Processing and sale of non-timber forest products		X	
Sorghum transformation		X	

Rice processing			
Millet processing and sale		X	
Cowpea processing and sale		X	
Meat and fish processing and sale		X	
Fruit and vegetable drying, storage, and processing		X	
Oilseed and legume processing		X	
Processing and sale of other cash crops – e.g., moringa, gum arabic, etc.			
Dairy collection, cooling, storage, and processing, central plant	X	X	
Secondary dairy cooling plants (small size in villages)	X	X	
Milk transportation equipment		X	
V. Input delivery			
Compost manufacturing and sale	X	X	X
Retail shops for seed and input sale	X	X	X
Seed production and sale	X	X	X
Small-scale feed mills and feed storage	X	X	X
Retail shops for feed and veterinary medicine	X	X	X

31. The matching grant facility will be managed by a qualified auditing firm or commercial bank or a competent professional entity. The investment proposals developed will be submitted to the RSU for screening before submission to the CRAP for review and decision. The positive list will be expanded and reviewed each year according to the lessons learned. The implementation mechanisms (eligibility criterion, matching grant amount, contribution of beneficiaries, minimum and maximum grant value, grant evaluation criterion, and operating mechanism). Matching grant contributions are given in more detail in the Project Implementation Manual (PIM). It will be determined by the beneficiary category and value of the grant being sought. As harmonization is a core principal of the project, this matching grant manual will be harmonized with the matching grant facilities operated by IFAD, Lux-Dev, the African Development Bank, and other development partners.

32. **This subcomponent will primarily focus its interventions in the following 10 value chains**: millet, sorghum, cowpeas, dairy, small ruminants, beef cattle, poultry, vegetable production, rice under irrigated production, and other cash crops under irrigation. The criteria used for the choice of value chain selection include: (i) existing agricultural value chain operating in the project site (predominantly the millet-sorghum belt); (ii) current and emerging market demand; and (iii) relevance to the PDO.

33. **This is expected to contribute to the creation of at least 10,000 jobs by supporting new climate-smart enterprises**. In addition, these enterprises will provide inputs or act as output markets for farmers in the commune engagement in CSA. The activities will support both production and post-production activities. At least 50 percent of resources under this subcomponent will be allocated to women and youth enterprises.

Component 2: Innovative Practices and Improved Service Delivery for Mainstreaming Climate-Smart Agriculture

34. To help adopt practices and make sustained investments to achieve the triple outcomes of CSA, farmers in Niger will need access to goods and services from

private and public institutions. This component will focus on improved service delivery by national and local institutions. The project will take a systems approach and will intervene at appropriate points across the system to help improve the functioning of the entire service delivery value chain. This component will work directly with the private sector and attempt to develop market mechanisms for sustained service delivery during and after the project. In addition, the component will focus on public sector institutions to improve the policy and enabling environment and facilitate delivery of relevant services by national and local public sector institutions. To improve service delivery, this component will be structured into four subcomponents: (i) technology transfer; (ii) improved access to information; and (iii) support to national institutions for improved service delivery and policy dialogue; and (iv) supporting innovation for agricultural development.

Subcomponent 2.1 - Technology transfer

35. **In Niger, national public support to producers is characterized by a split between the institutions in charge of the development of technologies and practices and those responsible for transferring technologies and training farmers**. Technology development is carried out by research institutions, including the National Institute for Agricultural Research of Niger (INRAN), Abdou Moumouni University (UAM Niamey), the Cattle Multiplication Center (CMB), the Central Livestock Laboratory (LABOCEL), the Forest Seed Center, and the Bureau of Environmental Assessment and Impact Studies (BEEEI), whereas extension and technology transfer are provided by the state extension services (DVTT), projects, NGOs, and private actors. Taking stock of this situation, technology transfer will be carried out using the Farmers Field School (FFS) approach. FFS is a group-based learning process that has been used with success in Niger over the past decades.

36. Farmers participating in FFS are organized into groups of 25-30 members and implement novel activities with the support of a technical facilitator. The hands-on nature of FFS, coupled with regular field observations and group analysis, has proven extremely effective in disseminating new practices and technologies. The knowledge gained from these activities enables participants to make their own locally specific decisions about farm management practices.

37. **PASEC will support FFSs that follow an integrated approach, looking at the entire farm or production unit, with the aim to improve performance on CSA's triple outcomes**. This will require the intervention of technical facilitators with knowledge in a range of agricultural production and natural resource management areas. The project will thus strengthen the capacity of DVTT but will also call on specific local or international experts. Some of the technical areas that will be disseminated through the FFS include: crop residue management; prevention of erosion and agricultural soil degradation; use of drought-resilient seeds; production and marketing of poultry; small-scale irrigation schemes; and use of modern information sources in managing the farm.

38. **Specific activities to be carried out in subcomponent 2.1 include:**

- **Identification of needs for technology transfer** through the development of the Integrated Climate Smart Investment Plans (ICSIP) at the commune level and consultation with partners such as the Network of Agriculture Chambers (RECA).

Specific attention will be given to the needs of the most vulnerable groups, including youth and women.

- **Contracts with national (INRAN) and international research institutions (ICRISAT/CCAFS)** for the identification and adaptation of technical packages and innovative practices to address the specific needs. Specifically ICRISAT/CCAFS in partnership with INRAN will : i) assess the costs/benefits, impacts, barriers and opportunities to the implementation of different Climate Smart Agriculture (CSA) options; ii) promote the adoption of short duration, photoperiod sensitive, water and nutrient use efficient varieties to reduce climate risks; and iii) scale out of integrated and diversified management innovations of Land-Water-Tree-Crop-Livestock systems.

- **Capacity building among DVTT, INRAN producer associations, NGOS, and other local organizations** that will facilitate the first generation of FFS and Innovation Platform. This will include face-to-face training of staff, field visits, as well as tailored booklets and short technical manuals.
- **Procurement of inputs and equipment for FFS and Innovation Platform.**

- **Development of an institutional setup for the long-term sustainability of FFS** and Innovation Platform relying on communal authorities, farmers' group, professional organizations, agricultural chambers and national-level policy makers.

39. During implementation, it is proposed that FAO provides TA to PASEC for the implementation of this sub-component focusing on:

- ***Capacity development of national extension services and farmer organizations in the farming field school (FFS) approach associated with listening clubs.*** PASEC will support the DVTT and INRAN in scaling up quality FFS that will contribute to the dissemination and adoption of CSA practices in the project sites. In this context, it is proposed that FAO provides methodological, policy and technical support to the development of a national strategy for institutionalizing the FFS approach, through a consultation with a wide array of institutions involved in FFS implementation. In addition, the methodological support of FAO to PASEC will be directed towards the transfer of knowledge to DVTT staff and municipal technicians in charge of accompanying targeted communes and farmer organizations. Such capacity development initiatives will enable technicians to become Master Trainers and FFS facilitators capable of establishing sustainable and quality FFS addressing CSA-related matters. Technical support of FAO will also focus on the development and update of guidelines for the implementation of FFS, including M&E and sustainability mechanisms.

Subcomponent 2.2 - Improved access to information

40. **Farmers need access to multiple data points for decision making regarding crop choices, sowing, agronomic practices, harvesting, processing, and sales**. In Niger, farmers mostly rely on traditional information networks to make decisions. Access to modern, reliable, relevant, and customized information to guide their decision making is still quite limited. In the absence of this information, farmers makes suboptimal decisions, which contributes to reduced productivity, efficiency,

and resilience. Access to improved information for decision making is a critical element of the CSA package to help ensure CSA's triple outcomes.

41. The need for real-time, customized, and relevant information for effective decision making was articulated on multiple occasions during the project preparation process. While a number of initiatives (especially market price information delivery of SIM-A and SIM-B through cell phones, community radios, etc.) have received good response, in general farmers have limited access to relevant information. The following information needs were highlighted: (a) delivery of customized weather forecasts and advisories; (b) agronomic practices and extension delivery; (c) market prices; and (d) emergency alerts.

42. **To help provide integrated and relevant information services to farmers for decision-making, project subcomponent 2.2 will support investments in the following two areas:**

- **Commune-level weather forecast and advisory:** Recently, there have been a number of initiatives in this field in Niger involving the Ministry of Transportation (National Directorate of Meteorology), the Ministry of Agriculture (INRAN), Universities, the Regional Training Center on Agro-meteorology and Hydrology (AGRHYMET), CARE, CRS, etc. These pilots have demonstrated positive impact on famers who have appreciated delivery of weather forecast and advisory services. The African Development Bank is currently implementing a US$13.8 million Climate Information Development and Forecasting Project (PDIPC) to improve weather observation infrastructure, support modeling and vulnerability assessment, and strengthen early warning systems. It is expected that the project will support development of 34 synoptic stations, 39 agro-meteorological stations, 39 rain loggers, and 796 rain gauges. This will contribute to development of seasonal and short-term forecasts updated regularly, which will be disseminated using multiple channels including community radios. To ensure that the farmers in the selected communes get access to customized weather forecasts and advisories, the project will coordinate with the existing and planned initiatives. It is anticipated that weather infrastructure and forecasting capability will have been developed by PDIPC and other initiatives and the project might help support missing links. The project will support the following activities: i) support development of new weather infrastructure in communes which have not been covered under the African Development Bank PDIPC project; ii) support IT infrastructure of the Niger Meteorology Department to enable short-, medium-, and long-term weather forecast at commune level; iii) technical assistance and trainings for Niger Meteorology Department staff for improving their forecasting capabilities; iv) INRAN's provision of commune-level advice in combination with weather forecasts; v) support the upload of weather forecasts and advisories by the Niger Meteorological Department on a real-time basis to a web platform for open access.

- **Strengthening Information Delivery to farmers:** While there have been a number of donor-supported initiatives to deliver relevant weather, market, and agronomic information in Niger, they have primarily benefited national organizations, and the outreach of such initiatives to farmers is very limited. This activity is primarily aimed to deliver information to farmers in project communes, however, the benefit will spread across Niger since farmers beyond the targeted communes will be able to benefit from these investments. The project will support RECA and other relevant

organizations to undertake the following activities: a) compilation of existing content (hard copies, PDF, audio and video) on good agriculture and livestock practices that support CSA outcomes and preparation of specific dissemination material in local language; b) upgrade and expand RECA web portal to provide real-time information on weather forecast and advisory, market prices, emergency alerts and technology packages in relevant languages; c) support community rural radios in the project area to deliver the relevant content to the farming population and collect feedback; d) strengthen information delivery through rural markets (e.g. promotional material, audio-video demonstration, information camps and booths, etc.); and e) promote the use of cell phones for disseminating weather and market information by financing the development of a system for delivering localized weather forecasts and crop prices through cell phones and piloting its delivery in selected communes.

43. The project will develop relevant metrics to track and monitor the information delivery, access, and decision-making process to better understand the outcomes and impacts of this subcomponent.

Sub-component 2.3: Support to national institutions for improved service delivery and policy dialogue

44. To mainstream CSA in Niger's broader institutional landscape, the project needs to coordinate with a large number of ministries and institutions and to build strong coalitions. In addition, project performance is contingent on active participation and support of a number of institutions directly engaged in service delivery in the agriculture and livestock sectors.

45. The project will finance a number of activities to strengthen national institutions' capacity, including: (a) organizing workshops, meetings, and field visits and developing and delivering a training program for building awareness and knowledge sharing on CSA; (b) supporting development of policies, projects, and programs for CSA, which might entail undertaking technical studies, organizing workshops and meetings, exposure visits, etc.; (c) supporting national institutions to help implement PASEC; (d) supporting national universities to develop curriculum on CSA; (e) supporting Investment Fund for Food Security and Nutrition (FISAN) for organizing workshops, undertaking training, financing analytic studies and strategy development, and other support activities; (f) supporting INRAN for**:** (i) production of foundation seed for staple grains; (ii) provide support for distributing foundation seed to seed breeders; (iii) provide support for technical assistance, quality control, and monitoring of seed; and (iv) support for maintaining genetic material.

Subcomponent 2.4 Supporting innovation for agriculture development

46. The focus of the project is to scale-up proven interventions while at the same time, also providing space for new innovations that have the potential for scaling-up in future, These innovative activities are already being implemented, and scaled up in neighboring countries and can play a big role in strengthening resilience and improving productivity. Under this sub-component, the following activities will be supported: a) piloting of e-vouchers for agricultural input distribution for vulnerable populations in selected communes; and b) piloting the use of remote sensing, application for monitoring crop performance.

47. **Agricultural inputs e-vouchers system**: In Niger, less than 10 percent of the area cultivated uses improved seeds. The seed market of staple gains is nascent, with heavy public and donor interventions which distorts input markets, and the majority of farmers are poor subsistence farmers who cannot afford commercial inputs. In addition to seed, these issues also affect other inputs (fertilizer, feed & fodder). A number of neighboring countries are using e-voucher programs with the aim of improving efficiency, improving targeting, and integrating private sector players in subsidized input delivery system. To help design and deliver an e-voucher program and pilot it in selected communes the project will undertake the following: a) development of a modular IT system which could be scaled-up or scaled-down for supporting the e-voucher program; b) work with existing social safety net project for identification of vulnerable population eligible for receiving e-vouchers and subsequently distributing e-vouchers; c) support the association of seed companies *(Association des Producteurs Privés de Semences du Niger, APPSN)*, input dealers and seed producers (with adequate training, management tools, distribution network, etc) to ensure their participation; ensure adequate seed production and distribution; and coordination of the input supply chain; d) finance the cost of input subsidy; and e) capacity building of all the stakeholders involved in the seed supply chain.

48. **Remote sensing application for crop monitoring**: The advances in satellite capabilities, remote sensing technologies, computational ability and IT infrastructure, and crop modeling techniques has resulted in improved spatial monitoring and estimation of crop production. A number of countries are using remote sensing application for improving their national crop monitoring and forecasting system. Timely and accurate availability of this information is critical, especially for a country like Niger, to trigger off an emergency response and take proactive measures accordingly. The NCU will coordinate with the Ministry of Agriculture, CCA *(Cellule Crises Alimentaires*); and CC/SAP (*Cellule de Coordination du Systeme d'alerte Precoce*) and pilot remote sensing applications for crop monitoring and crop estimation in selected communes. This activity will finance: a) commissioning a relevant competent organization to deliver crop monitoring and forecast of relevant crops at commune level; b) undertake crop cutting experiments to collaborate remote-sensing estimations with actual on the ground yield and refine the crop estimation model accordingly; c) support necessary IT infrastructure and licensing required to pursue the activity during the project; and d) build capacity of national institutions to develop, understand, use, and disseminate this information.

Component 3: Contingency Emergency Response

49. Following an adverse natural event that causes a major disaster, the GoN may request the Bank to reallocate project funds to support mitigation, response, recovery, and reconstruction. This component will draw resources from unallocated expenditure categories and/or allow the GoN to request the Bank to re-categorize and reallocate financing from other components to partially cover emergency response and recovery costs. This component could also be used to channel additional funds should they become available as a result of an eligible emergency. Disbursement would be made against a positive list of goods, works, and services required to support mitigation, response, recovery, and reconstruction needs. All expenditures under this component, should it be triggered, will be in accordance with paragraph 11 of OP 10.00 (Investment Project Financing) and will be appraised, reviewed, and found to be acceptable to the Bank before any disbursement is made. Eligible operating costs

would include incremental expenses incurred for efforts arising as a result of the natural disaster. This component will also be used to channel resources from rapid restructuring of the project to finance emergency response expenditures and meet crisis and emergency needs under an Immediate Response Mechanism (IRM). The "Immediate Response Mechanism Operational Manual" (approved by the Bank on March 17, 2015, and the GoN on June 16, 2015) will be used to mobilize resources.

Component 4: Project Coordination and Management

50. The project will be implemented under the 3N Initiative's institutional arrangements. The objectives of component are to: (i) ensure effective strategic and operational planning and monitoring and implementation of the project on time and in accordance with the Financing Agreement.; (ii) ensure efficient coordination for project activities; and (iii) adequately monitor project implementation progress, evaluate its final results and impacts on smallholders, and communicate efficiently to various stakeholders on project activities, outcomes, and lessons learned. This component has two main subcomponents: (a) Coordination, management, and implementation support; and (b) Monitoring and evaluation, communication, and knowledge production and sharing.

a) Coordination, management, and implementation support

51. This subcomponent will support: (i) establishment and operation of the National Coordination Unit (NCU) and five Regional Support Units (RSUs) (Dosso, Maradi, Tahoua, Tillaberi, and Zinder); (ii) establishment and operation of the Project Steering Committee (PSC); and (iii) coordinated implementation support and services provided by national technical entities, consultants, and research institutes. The subcomponent will particularly include management of staff (including national and international consultants) and equipment, financial management (FM), procurement activities, management of environmental and social safeguards aspects, and organization of work, including joint supervision missions.

52. The project will finance the following items: (a) long-term NCU/RSU consultants' salaries and allowances for field visits; (b) procurement of transport means (five 4x4 vehicles and one sedan car at the NCU level; five 4x4 vehicles at the RSU level; 15 motorcycles for field coordination) and computer/office equipment; (c) associated office operating costs of the NCU/RSUs (operating costs means the reasonable incremental operating expenses based on the Annual Work Plans and Budgets, as approved by the World Bank, incurred by the PASEC NCU or its regional representations, the targeted communes, and technical entities including their decentralized services involved in project implementation, management, and monitoring. Operating costs include, among others, reasonable costs for utilities and supplies, bank charges, communications, vehicle operation, maintenance, and insurance, office space rental, and building and equipment maintenance); (d) staff training activities, including exchange visits to neighboring countries/similar CSA projects and initiatives; capacity building in the field of environmental impact evaluation/safeguards, social assessment, participatory approaches, nutrition, and gender mainstreaming, etc.; (e) audit and installation of a project accounting and management software and management control tools; and (f) M&E and PSC costs.

53. Given the risks related to governance, fraud, and corruption, especially in selection of beneficiaries' procurement of goods and works within the implementation of integrated subprojects and matching grants' subprojects, the subcomponent will support implementation of a Grievance Redress Mechanism (GRM).

b) Monitoring and evaluation (M&E), communication, and knowledge production and sharing

54. An M&E system will be established to collect and process appropriate information and to verify the output, effects, and eventually impacts of project activities over time. As part of the monitoring activities, the project will develop partnerships with research/learning institutions for the monitoring benefits generated by climate-smart activities. Financing will be provided for: (i) setting up the M&E system and putting in place the necessary capacity; and (ii) elaboration of a communication and knowledge-sharing strategy (after the core NCU staff have been recruited), followed by development and broadcast of various communication and knowledge-sharing tools using a variety of media and targeting different audiences.

55. At the time of project preparation, knowledge and data about the measurement of resilience to drought are scarce. The resilience indicator included in the results framework is simple and measurable but provides only indirect information about resilience trends. The project will thus develop an indicator framework for assessing resilience among mixed crop-livestock systems in the Sahel and will monitor resilience trends in the project area. This will build on the existing literature, notably developed by CGIAR, FAO, and the World Bank and will make use of the LSMS (Living Standards Measurement Study) data (data from the 2011 survey are available and data from the 2014 survey should be available in the second half of 2016). Activities will include: (i) contracting for the development of an indicator framework and specific metrics; (ii) national consultation under the coordination of the 3N Initiative; (iii) integration of the resilience indicators into the project's M&E system as they become available; and (iv) preparation and dissemination of lessons learned.

56. The M&E system will provide information to verify progress toward and achievement of results (outputs, outcomes, and impacts), support learning from experience, and promote accountability for results. The baseline study remains the starting point for PASEC results measurement. It will serve as a benchmark for the routine project monitoring (half year M&E report, annual project report) during project implementation. The project evaluation will be conducted through a mid-term evaluation and an end-of-project evaluation. As scaling up the most promising CSA technologies and interventions is key for the project, learning from experience based on evidence generated through the M&E system remains key for reinforcing the project results. Therefore, the project will strengthen the link between M&E and knowledge management and communication. The M&E system will support knowledge products and services that will be disseminated through a wide communication channel, targeting project beneficiaries and focusing on user-friendly communication tools. The PASEC M&E system will also involve an accountability mechanism and process (PSC meetings, stakeholder consultation, Mid-term Review). Information sharing and stakeholder involvement and participation at all stages of the project cycle will be a core component of the project's accountability for results. At the national level, the M&E team (NCU) will lead all aspects of M&E and will provide operational tools and instruments for data collection at the regional and local

levels. It will collect and validate upstream reports and monitor information from the regional M&E specialists (RSUs) and from each of the national institutions involved in project activities to facilitate decision-making processes.

57. A communication and knowledge-sharing strategy will be designed and implemented in order to favor appropriate dissemination of all the information concerning approaches, processes, results, and lessons learned by the project to key ministerial departments and national agencies, communes, the private sector, farmers' organizations, farmers, and NGOs.

58. During implementation, the project will support the development and broadcast of various communication and knowledge-sharing tools using various media (newspapers, radio, television, internet, etc.) and targeting different audiences (farmers, the private sector, and the general public). Good CSA practices will be documented (through fact sheets, policy briefs, and audio-visual materials) and shared with policy makers and program planners (including NGOs and civil society organizations) in Niger, as well as in regional and international fora.

59. Table 5 below provides a summary of major activities and responsible institutions. Detailed implementation arrangements are provided in Annex 4.

Table 5: Summary of Major Activities and Responsible Institutions

Component	Activities	Responsibilities
Component I Investments for Scaling up Climate-Smart Agriculture		
1.1 Financing for CSA-integrated subprojects at the commune level	Preparation of commune investment plans (ICSIP) and integrated sub-projects	International and National NGOs
	Approval of integrated sub-projects	CRAP
	Training of commune officials	Professional firms hired by NCU
	Training of commune and regional review committees	Professional firms hired by NCU
	Implementation of integrated sub-projects	Communal council (the council will hire private firms for civil works, equipment supply, and undertake cash for work programs)
1.2 Inclusive enterprise development for sustainability of CSA	Provision of business development services	Professional consulting firms and/or NGOs
	Support to the management of matching grant facility	Audit firm or Commercial Bank or Professional firm
Component II: Innovative Practices and Improved Service Delivery for Mainstreaming Climate-Smart Agriculture		
2.1 Technology transfer	Farmer field school implementation and delivery	DVTT (Ministry of Agriculture, extension and Technology Transfer department)[6]
	Technical supervision of farmer field school	FAO
2.2 **Improved access to information**	Weather infrastructure development and generation of weather forecast	Directorate of Meteorology
	Agronomic advisory	INRAN, with support from AGHYMET
	Information delivery	Community rural radios and RECA
	Cellphone delivery of	RECA

[6] In communes where DVTT does not have adequate staff, NGOs will be hired to implement Farmer field school

	information	
2.3 Support to national institutions		
	Information tool kit	NCU
	Strengthening capacity of national institutions	3N High commission and relevant national institutions
	Support for foundation seed material and maintain genetic material	INRAN
2.4 Innovative practices for agriculture development	Agricultural inputs e-vouchers system	DGA (Directorate General for Agriculture)
	Remote sensing application for crop monitoring	DGA, CC/SAP
Component III: Contingency Emergency Response		
	Immediate Response Mechanism	Ministry of Economy and Finance and National Government of Niger National, Dispositive for Prevention and Disaster Management)
Component IV Project Coordination and Management		
	Coordination management and implementation support	NCU and RSU

60. The proposed project will coordinate with existing World Bank funded operations and explore synergies. Table 6 below provides a summary of linkages between the PASEC and other ongoing World Bank projects in Niger.

Table 6 : Coordination with other operations in Niger

WB Projects – On-going	Project info[7]	Constraints addressed by the Project	Comments:
1. Niger – WAAPP-1c (P122065)	-$30 m Closing date : June 2016	- Weak technology generation and adoption rate. - Regional integration in the agriculture sector - Support to research system	PASEC will support the dissemination of technologies generated under WAAPP and continue the support to existing Innovation Platform in the targeted area.
2. Agro-sylvo-pastoral Exports and Markets Development (P148681)	$53.6m Closing date: Nov.2017	- Poor marketing conditions, lack of storage facilities, marketing infrastructure, - Poor coordination of supply chain - Irrigation development	The PRODEX is supporting the value increase of selected products, interprofessional organizations and the development of financing instruments. PASEC will scale up PRODEX intervention to MSMEs.
3. Community Action Program (P132306)	$40m Closing date: Nov. 2017	- Poor communes' local development planning and implementation capacities - Immediate Response mechanism to an eligible crisis or emergency	The CAP3 interventions are oriented on strengthening local development planning and implementation capacities.
4. Niger Community Action Project for Climate Resilience (P125669)	- $63m Closing date : June 2017	- Improve institutional capacities and sectoral policy frameworks; - Improve resilience of local populations to climate variability	Project will use the integrated sub-projects model developed by CAP-RC to provide support to the communes. PASEC interventions on access to information and capacity building activities.
5. Safety Nets	- $70m	Establish and support an	PASEC interventions (matching grants)

[7] Type, P number, timeframe, budget (share for AWM)

Project (P123399)		effective safety net system.	may benefit the Safety Net Project clients in 11 communes where the two projects are overlapping.
6. Disaster Risk Management and Urban Development (P123399)	$100m	High country vulnerability to natural disasters	PASEC will use the Immediate Response Mechanism Manual prepared under the DRM project. PASEC will complement the country's immediate response to disaster.
Other donors funded Project (main)	Project info	Constraints addressed by the Project	Comments:
Family Farming Development Programme (ProDAF) - IFAD	$162m	Resilience to external shocks, including climate change, and farmers' access to local, urban and regional markets in three regions.	The ProDAF and PASEC will establish operational synergies in the overlapping three regions (Maradi, Tahoua and Zinder) to avoid duplication and common operational standards.

ANNEX 3: ECONOMIC AND FINANCIAL ANALYSIS

Niger: Climate Smart Agriculture Support Project (PASEC- P153420)

I. Foreword

1. This annex presents the economic and financial analysis (EFA) of the World Bank-funded Climate Smart Agriculture Support Project (PASEC). This EFA demonstrates—through a comprehensive literature review (section III) that the investments proposed by the project are financially and economically justified. The EFA describes in some details the methodology for assessing benefits from sustainable agriculture production and from climate change adaptation and mitigation (section V). Results, expressed in terms of the project's economic internal rate of return (IRR) and net present value (NPV), are presented in section VI for the baseline scenario and in section VII for the sensitivity analysis.

2. The analysis shows that the overall project is profitable. Under the presented assumptions, the NPV is about US$98.2 million and the IRR averages 16.4 percent for a 20 year project lifecycle. The project's returns are nevertheless sensitive to several scenarios (changes in yields, decreases in prices, more severe droughts etc.), as reflected by the sensitivity analysis presented at the end of this study.

II. Introduction

3. The objectives of the Project are: (i) to enhance adaptation to climate risks, (ii) to improve agricultural productivity among the Targeted Communities and (iii) in the event of an Eligible Crisis or Emergency, to provide immediate and effective response to said Eligible Crisis or Emergency. To achieve this PDO, the project will invest in a number of activities, implemented across three components, namely (i) Investments for scaling up climate smart agriculture (CSA), (ii) Innovative practices and improved service delivery for mainstreaming CSA, and (iii) Project coordination and management.

4. To measure the efficiency of the Project and assess the PDO, the analysis calculates economic and financial IRRs and their corresponding NPV. The analysis uses farm models and FAO's Ex-ante Carbon Balance tool (EX-ACT) to estimate the Greenhouse Gas (GHG) mitigation potential of the project. The EFA mainly focuses on the returns from the investments under component one. The project also creates a number of positive externalities under component two and four, which have not been fully quantified because of the difficulty to assess in monetary terms all the effects of institutional strengthening and capacity building[8].

III. Economic and financial rationale for investing in CSA interventions

5. **Rationale for public sector provision.** There is a strong economic rationale for the Bank to invest in climate change adaptation and mitigation. According to the Stern Review on the Economics of Climate Change (2006), the cost of climate change to the Global Economy is huge, resulting in a 7 percent gross domestic product (GDP)

[8] The contingency emergency response component was not subject to EFA since it is not possible to know at ex ante stage the exact nature of emergency activities.

loss in Africa by 2100. The Stern Review highlights that given the strong correlation between growth and poverty reduction, a climate-driven reduction in GDP would increase the number of people below the USD 2 per day poverty line by 2100, and raise the child mortality rate compared with a world without climate change (Stern, 2006). A recent study from the Overseas Development Institute (ODI) study confirms these prospects, and shows that climate change could draw up to 720 million people back into extreme poverty if current emissions trend continue toward a 3.5 degree Celsius mean temperature change by 2100 (ODI, 2015)[9].

6. The Economics of resilience in the dry-lands of Sub-Saharan Africa reports prepared by the World Bank highlights that disaster recovery costs averaged US$ 266 million in Burkina Faso, US$ 204 million in Senegal and US$ 12.1 *billion* in Kenya (Post Disaster Needs Assessments). Climate change is likely to increase the frequency and severity of extreme weather events and disasters, leading to large economic and social losses. In a context where public spending is scarce, climate change consequences cut the revenues, redirect public funding to humanitarian assistance and increase spending of Nations, worsening budget situations. The rationale for climate change mitigation and adaptation is hence strong, since it will contribute to poverty eradication and benefit both the global economy and that of Sub-Saharan Africa, including Niger.

7. **GHG emissions from agriculture, contributing to global warming, continue to rise.** The Intergovernmental Panel on Climate Change (IPCC) acknowledges that climate change is very likely due to anthropogenic GHG emissions, which include those arising from agriculture, forestry and land use change (AFOLU). GHGs emissions from AFOLU account for 24 percent of the global GHG emissions, while agriculture alone contributes 10-12 percent (IPCC, 2014). According to FAO (2014), emissions from crop and livestock production grew globally from 4.7 billion tons of carbon dioxide equivalent (CO2e) in 2001, to over 5.3 billion tons in 2011, a 14 percent increase, mainly originating from deforestation and agricultural emissions from livestock, soil and nutrient management (IPCC, 2014a). In Niger, various studies show that the Agriculture sector (comprising farming, agriculture, livestock and forestry) is the largest GHG emitter that contributes to 78 percent of the national CO2-e emissions (GoN, 2015).

8. **On the positive side, the economic mitigation potential of agriculture is high.** Agriculture offers cost-effective mitigation options to increase carbon stocks, decrease soil carbon losses and reduce non-CO2 emissions. The mitigation potential is estimated at 3 to 7.2 giga tons of CO2e per year in 2030 at a social price of carbon (that captures the marginal global damage of an additional unit of CO2e emitted[10]) averaging US$ 20 to 100 per ton of CO2e (FAO, NAMA, 2015)[11].

9. **CSA interventions are also profitable solutions from the farmers' (private) viewpoint.** Binam et *al* (2015)[12] assessed the effects of tree-based systems, i.e. farmer managed natural regeneration (FMNR) (or also called Assisted Natural Regeneration- ANR), on selected outcomes among 1080 rural household farmers in

[9] ODI, 2015, Zero Povery, Zero Emissions, Eradicating Extreme Poverty in the climate crisis
[10] See discussion on the social price of carbon further below
[11] FAO, 2015. Nationally Appropriate Mitigation Actions (NAMA) in the AFOLU sector
[12] Joachim N. Binam, Frank Place, Sigue Hamade, Moussa Boureima, Abasse Tougiani, Joseph Dakouo, Bayo Mounkoro, Sanogo Diaminatou

the Sahel, including Niger. Their results indicate that keeping, protecting and managing trees in the farmlands have significant benefits on the livelihoods of the rural poors. Binam et *al* report that adopting FMNR practices result in an increase in the gross income by USD 72,000 per year for a community of 1080 households. In Niger, this figure would go as high as US$ 76,000. The results also show significant nutrition co-benefits, with increase of the dietary diversity of the households by about 12–14 percent.

10. The positive financial impacts of conservation agriculture (CA) on farmers' gross margins, mainly through increased yields and labour costs savings, have been evidenced by research work performed by CYMMIT/ CGIAR[13] in Malawi and Zimbabwe (Thierfelder et al., 2015)[14]. At a more global scale, FAO reports that farmers can save between 30–40 percent of time, labour and fossil fuel inputs (FAO-NAMA, 2015).

11. Other studies (World Bank, 2011; Tittonnell, 2008; Musahara, 2007) showed that integrated soil fertility management approaches are more profitable (in terms of benefit/ cost ratio and NPV) than techniques using either mineral fertilizer or organic soil fertility management practices alone. In Kenya, Tittonell et *al.* (2008) showed that maize yields were substantially larger when manure was combined with synthetic fertilizer, with increases 100 percent above control groups using chemical fertilizer alone. Studies from Musahara (2007) in Rwanda indicate that on-farm soil conservation investments alone can increase marginal productivity of land over 30 percent. In Nigeria, tests combining different farming options showed that ISFM practices produced the greatest maize and rice yields, benefit-cost ratios (in the order of 5-6.6 for maize) and NPV (World Bank, 2011).

12. **Value added of World Bank's support in CSA in Niger.** The World Bank brings a long-term global and local experience and knowledge on climate change adaptation and mitigation, sustainable agriculture and support to local development planning in Sub-Saharan Africa in general and Niger in particular. Through the various phases of the Community Action Program (PAC), the World Bank strengthened Niger's capacity in local development planning and implementation, including the capacity to respond promptly and effectively to eligible crisis or emergencies. The Bank also financed the Community Action Project for Climate Resilience (PAC-RC) contributing to improving the resilience of populations and production systems to climate change. Besides, the convening power of the Bank, as proven by (i) its key role in the Global Alliance for Climate Smart Agriculture and (ii) the involvement of stakeholders and development partners (like FAO and the Millenium Challenge Corporation) during project preparation, helps increasing coordination, aid harmonization and provide appropriate support to the *Haut Commissariat à l'Initiative 3N*[15] (HC3N).

IV. Identification of PASEC's benefits

[13] CYMMIT=International Maize and Wheat Improvement Center. CGIAR= Consultative Group on International Agricultural Resarch.

[14] Thierfelder C., Trent Bunderson W., Mupangwa W., (2015), *Evidence and Lessons Learned from Long-Term On-Farm Research on Conservation Agriculture Systems in Communities in Malawi and Zimbabwe*. Environments 2015, 2(3), p 317-337.

[15] *Les Nigériens Nourissent les Nigériens*

13. The Project activities are expected to generate three main benefit streams: (i) farmers-, community- and commune-level benefits, such as increased crop yields, increased animal productivity, increased revenues, resilience to climate change risks, together with more intangible social benefits such as improved nutrition, human capital strengthening and women empowerment, (ii) public benefits, such as capacity development and institutional support to decentralized authorities to promote CSA interventions and mainstream them into communal investment plans; and (iii) more global benefits, such as natural resources protection and reduced GHG emissions which contribute to achieve the INDC discussed at COP21 and contribute to the global goal of limiting mean global warming to 2°C above pre-industrial temperatures.

V. Methodology and assumptions

14. **Methodology**. The approach follows that of Gittinger (1982)[16], Belli et al. (2001)[17] and is in line with recent guidelines published on economic and financial analysis[18]. *The financial analysis* was performed from the perspective of project beneficiaries. The private cost-benefit analysis, based on farm budgets, computed the costs and benefits experienced by the beneficiaries when adopting CSA practices and uses market prices. *The economic analysis*, in turn, was performed at PASEC level and from the society viewpoint. The analysis aggregated incremental benefits to the total number of beneficiaries, included benefits from rural roads and factored in environmental co-benefits arising from reduced GHG emissions (positive externalities), and deducted total project economic costs to determine whether investments were viable from the perspective of the society. The economic analysis also differed from the financial analysis due to a shadow price that was assumed for the main project inputs and outputs.

15. **Limitation of the EFA.** PASEC is a demand-driven project. The *ex-ante* EFA of investments that are locally identified during implementation is always difficult to perform because it is not possible to predict in advance: (i) which combinations of CSA sub-projects will be pursued by the beneficiaries and (ii) what will be the exact cost of these sub-projects. For this reason, EFAs for such demand driven projects are not always performed. The present analysis, however, attempted to build the EFA on a mix of sub-projects that are broadly known from the "CSA local development plans" supported by the project under component 1. The financial analysis of individual sub-projects, once precisely identified during implementation, will need to be performed systematically, using for example the Rural Invest methodology developed by FAO.

16. **Financial analysis: typology of production systems**. According to the General Census of Agriculture and Livestock (RGAC, 2005-2008), mono-cropped millet and cultures in associations such as (i) millet/cowpea, (ii) millet/sorghum/cowpea and (iii) millet/groundnuts are among the main rain-fed farming systems found in the project's 44 communes. In line with Binam et *al* (2015) and FAO (2012), it was assumed that PASEC beneficiaries would operate on an average 2 hectares of land. In the project area, on private irrigation schemes, producers

[16] Gittinger, P., 1982, Economic analysis of agricultural projects
[17] Belli, P., J.R. Anderson, H.N. Barnum, J.A. Dixon, and J-P. Tan (2001), Economic Analysis of Investment Operations: Analytical Tools and Practical Applications. WBI Development Studies, World Bank Institute, World Bank, Washington, D.C.
[18] IFAD, 2015, Economic and Financial analysis of rural investment projects, basic concepts and rationale.

cultivate about 0.25 hectare and mainly produce onion, tomato, cabbage, sweet potatoes and sugar cane.

17. **Farm budgets.** Based on available statistics from the RGAC and secondary literature (from the Community Action Program –CAP- and IFAD[19]), farm budgets typified the average quantity[20] and costs of outputs, inputs (fertilizer, manure, seeds) and labor per farm, in the "with project" (WP) and "without project" (WOP) scenario. Investment costs for the various "CSA technologies" promoted by PASEC were retrieved from the *Handbook on Sustainable Land Management Techniques* produced by CAP[21] and the various technical reports produced by the national project preparation team commissioned by HC3N. Financial prices at farm-gate were obtained from the Niger agriculture Market Information System (SIMA) and from the "AccSA Afrique Verte" NGO (2010-2015 data).

18. **Yields**. For rainfed crops, literature report that the adoption of CSA techniques such as: (i) the use of selected drought-tolerant and short cycle seeds, (ii) the integration of micro-doses of mineral fertilizer with organic fertilizer/ manure, (iii) the assisted natural regeneration (ANR), (iv) the construction of rain water harvesting soil bunds (half-moons, Zaï, tassa) coupled with organic manure can increase yields as high as 75-80 percent (FAO, 2014[22]; Pretty et al. 2006[23]). The analysis, however, conservatively assumed a 50 percent increase yields against the baseline (found in RGAC's statistics). Assumptions – in line with the results framework- are summarized in table 7.

Table 7 : Yield increase assumptions

Crop	Yields (kg/ha)		% increase
	WOP	WP	
Cereals			
Millet (mono-cropped)	324	486	50%
Millet (in association)	320	479	50%
Sorghum (in association)	205	308	50%
Pulses			
Cowpea (in association)	124	187	50%
Groundnuts (in association)	205	308	50%
Irrigated crops (new schemes)			
Tomatoes	--	18,761	N/A
Cabbage	--	12,061	N/A
Sweet potatoes	--	18,091	N/A
Sugar cane	--	28,142	N/A

[19] Financial and economic analysis of the *Programme d'Agriculture Familiale dans les Régions de Tahoua, Maradi et Zinder* (PRODAF, 2015). IFAD also funded in 2015 a study on family farming that offers a crude typology of agriculture holdings. This work is done in partnership with the World Agriculture Watch Initiative.
[20] Net of losses: 10% losses for irrigated crops and 5% for staple crops.
[21] Recueil des fiches techniques en gestion des ressources naturelles et de production agro-sylvo-pastorales.
[22] FAO, 2012. « Leçons du projet de Promotion de l'initiative locale pour le développement à Aguié (PPILDA) au Niger financé par le FIDA ».
[23] Pretty, J. et al. Resource-conserving agriculture increases yields in developing countries. Environmental Science and Technology 40 (2006) (4): 1114-1119.

Onion	--	24,122	N/A

Source: RGAC, 2008-2009

19. **Adaptation benefits.** Adaptation to climate change involves making changes that strengthens project beneficiaries to anticipate, absorb, accommodate or recover from the effects of adverse climate events, more particularly droughts in the context of Niger. Climate change adaptation and enhanced resiliency to shocks are dynamic concepts; hence, the analysis of adaptation activities has been modelled dynamically, more particularly for rain-fed systems that are more vulnerable to weather's vagaries. In this analysis, "dynamically" means that the effects of adaptation interventions in the "with project" situation, and the impacts on non-adaptation in the "without project" scenario were modelled *before, during and after* a shock. A drought was assumed to occur every 5 years, mainly impacting yields and revenues. The result of improved resiliency due to PASEC should reflect less dramatic drops in revenues (due to less dramatic yield drops), but possibly a quicker recovery time after a shock (i.e., time taken for revenues to reach "before shock" levels). In this case, assumptions of the simulation during a drought/shock year are that revenues would be reduced (i) by 20 percent in the WP situation, and (ii) by 50 percent in the WOP situation. Recovery in the WP situation is reflected by revenues as high as 90 percent of before shock levels in the following year and 100 percent in year 2. In comparison, revenues in the WOP situation increase to 60 percent of before shock levels in the following year, 80 percent in year 2 and reach 100 percent only in year 3. Results are presented in section VI.

20. **Economic analysis of PASEC.** The economic analysis assesses the project's net impact on economic welfare. To calculate the total incremental benefit stream arising from the project, the analysis aggregated benefits arising from (i) sustainable increase in agriculture production (irrigated and rain-fed systems), extrapolated at the total acreage targeted by the project, (ii) sustainable increase in livestock production, extrapolated at the total number of agro-pastoralists, (iii) increased carbon sequestration in soils and biomass (mitigation) and, (iv) public infrastructures, such as rural roads.

21. **Mitigation benefits.** The EX-ACT tool was used to assess the mitigation impact of PASEC. The tool, developed by FAO, provides estimations of the impact of AFOLU projects and policies on the carbon-balance. The carbon-balance is defined as the net balance from all GHGs expressed in CO_2 equivalents (CO_2e) that were emitted or sequestered due to project implementation (WP) as compared to a business-as-usual scenario (WOP). EX-ACT is a land-based accounting system, estimating CO_2e stock changes (i.e. emissions or sinks of CO_2) expressed in equivalent tons of CO_2 per hectare and year (expressed in $mTCO_2e.ha^{-1}.year^{-1}$). EX-ACT has been developed using mostly data from the Intergovernmental Panel on Climate Change (IPPCC) Guidelines for National Greenhouse Gas Inventories (NGGI-IPCC, 2006) that furnishes EX-ACT with recognized default values for emission factors and carbon values in soils and biomass (the so-called "Tier 1 level" of precision). EX-ACT can accommodate more site-specific emission factors, when available (so called Tier 2 level data).

22. EX-ACT models carbon balance calculations based on (i) the dominant soil types in Niger (sandy soils), (ii) the climatic conditions in the project areas (tropical dry) and (iii) land use and land management practices, are described in the WP and WOP situations. Changes in land use brought by the project were inserted in the

different “modules” of EX-ACT. The main assumptions used in the GHG accounting are summarized in table 8.

Table 8: Main assumptions for the GHG modeling

CSA activity	Modeling assumption for 44 communes
Assisted natural regeneration (ANR), tree planting on agricultural land	67,500 ha Tier 2 data: soil carbon stock of 23tC /ha, above ground biomass growth 0.4 tC/ha/year Data source: Dean, 1999; Baggnian et al. 2013
Pasture rehabilitation using demies-lunes, afforestation of dunes	11,500 ha rehabilitated from degraded pasture lands Tier 1/ IPCC data for C stocks
Improved cropland management	22,500 ha with Zaï/ Tassa techniques Tier 1/ IPCC data for C stocks
Living hedges protecting croplands and irrigated perimeters	27,000 ha Tier 1/ IPCC data for C stocks
Afforestation (« bosquets communaux »)	276 ha Tier 1/ IPCC data for C stocks
Irrigation	225 ha (rice) and 3,200ha (onions, vegetables etc.) (new and rehabilitated schemes) Tier 1/ IPCC data for C stocks
Livestock with improved animal management practices (feed supplementation)	About 1,5 million heads (assuming 10% of total animal population in the targeted communes) Tier 2, using the GLEAM model developed by FAO[24] (Global Livestock Environment Assessment Model)
Rural roads	60 km Tier 1/ IPCC data

Notes: 1/ Emissions due the use of inputs (manure, micro-doses of chemical fertilizers and pesticides) and due to the functioning of the project coordination unit (e.g. fuel consumption for the NCU/RSUs) were included in the “Inputs and Investment” module of EX-ACT (assumptions based on PAC and Binam et al.,2015), 2/ technology adoption rate was estimated at 75 percent at the end of the “implementation phase” of EX-ACT; 3/ dynamic of change was chosen as “linear” in EX ACT.

23. **Carbon balance.** The analysis indicates that the activities foreseen by the PASEC lead to a carbon balance of -4.9 million tons of CO_2e that are mitigated over the period of 20 years starting from project implementation. This is equivalent to the annual mitigation of roughly -243,732 tons of CO2-e, which translates into -1.7 tons of CO2e per hectare annually. With the value of -1.7 t CO2-e of annual mitigation per hectare, PASEC can thus be characterized as an investment that comparatively strongly benefits GHG mitigation. The carbon balance results analysis are presented in the table 9 below:

Table 9: Carbon balance results

Item	Results
Total balance, 20years	- 4,874,644 tCO2e
Balance per hectare	- 34 tCO2e
Balance per hectare per year	- 1.7 tCO2e

[24] **The Global Livestock Environmental Assessment Model** is a modeling framework that simulates the environmental impacts of the livestock sector. More on http://www.fao.org/gleam/en/. Calculations were made to assume TIER 2 parameters (i.e. enteric methane emissions, in kgCH4/ head) per unit of livestock (cattle, sheep and goats) and in the “with” and “without” project scenario.

Total balance per year	- 243,732 tCO2e

24. **Social price of carbon**[25]. According to the recent World Bank Guidance Note on the Social Value of Carbon (2014), the value of carbon can be derived from three different measures: (i) the social cost of carbon, (ii) the marginal abatement costs and (iii) the carbon market prices. *The social cost of carbon* attempts to capture the marginal global damage (cost) of an additional unit of CO2e emitted. *Marginal abatement costs* measure the carbon price necessary to achieve a particular climate change target. This price is conceived as the global carbon price that would cover the marginal cost of achieving a particular climate policy target, such as the internationally accepted goal of limiting mean global warming to 2°C above pre-industrial temperatures. *Carbon market prices* are the market value of CO2e emission reductions or sequestration (offsets) that are registered and sold through various market structures. Carbon market prices, however, bear little relation with the value of climate damages or the carbon price needed to achieve a 2°C target. For this reason, the Bank Note recommends to use a social price of carbon (in real terms) of USD 30 per ton. This value was conservatively chosen in the economic analysis.

25. **Rural roads benefits**. Following the assumptions from other projects in Niger[26], it was conservatively supposed that rural roads investments would: (i) reduce vehicle operating costs (VOC) and transport costs, hence increasing output prices at farm gate by 2 percent; (ii) increase land acreage by 2 percent due to the access to new farming lands; and (iii) increase yields by 2 percent due to a better access to inputs.

26. **Livestock benefits**. Aggregated benefits from livestock interventions (vaccination campaigns, improved management of pasture lands) were calculated with herd dynamics models, with and without the project, using the Ecorum interface of the Livestock Sector Investment Policy toolkit (LSIPT)[27]. Due to data scarcity in Niger, livestock production parameters (mortality rates, parturition and prolificacy rates, off-take rates and herd structure) and prices were estimated based on (i) the data found in the EFA of the Bank-funded Regional Sahel Pastoralism Support Project (PRAPS), (ii) the "Initiative Elevage Pauvreté et Croissance" (IEPC, 2005)[28], and, (iii) figures found in publications of CIRAD[29] and FAO[30]. Benefits were assumed for a total population of 105,000 agro-pastoralists (i.e. about a third of the total rural population of the targeted communes).

27. **Economic prices.** Import and export parity prices were calculated for some of the main tradable inputs and outputs, using Free on Board (FOB) and Cost Insurance Freight price (CIF) to adjust market values to economic values applying a conversion

[25] Extracted from the World Bank Guidance Note on the Social Value of Carbon in Project Appraisal, 2014.
[26] Ex ante financial and economic analysis of the IFAD-funded PRODAF, 2015.
[27] Designed under the ALIVE program, with the support of the World Bank, FAO and the French CIRAD agency.
[28] Bank-funded livestock initiative performed in Burkina Faso and Mauritania.
[29] Some parameters can be retrieved in A) Ba.A, Lesnoff.M, Poccard-Chappuis R., Moulin CH., 2011, Demographic dynamics and off-take of cattle herds in southern Mali, CIRAD. B) Lesnoff M., Corniaux C., Hiernaux P., 2012. Sensitivity analsysis of the recovery dynamics of a cattle population following drought in the Sahel region, Ecological Modelling 232, p.28-39
[30] Otte, J, Chilonda, P (2002), Cattle and Small Ruminant Production Systems in Sub- Saharan Africa: A systematic Review. FAO, Rome.

factor (CF)[31]. The CF of financial prices to economic prices obtained is 1.06 for onions and cowpea, and 0.9 for urea, NPK and other imported inputs. It was assumed that livestock market prices would reflect economic prices. A CF of 0.75 was applied to the cost of labor that is underemployed. Using these conversion factors, budgets drawn in the financial analysis were transformed into economic budgets. Project financial costs were converted into economic costs through COSTAB's algorithm that removes the effects of inflation and transfer payments (i.e. taxes and subsidies).

28. **Phasing of benefits**. The analysis conservatively considered a progressive realization of benefits. Over the 20 years period of analysis, it was assumed that these benefits would be step-wise (e.g. due to the pace of adoption of CSA practices). Those were estimated as follows: (i) for rain-fed systems: 10 percent in year 1; 20 percent in year 2; 40 percent in year 3; 60 percent in year 4 and 75 percent in year 5 onwards, (ii) for new irrigated systems: 20 percent in year 1; 50 percent in year 2 and 75 percent in year 3 onwards.

29. **Discount rate.** To calculate the economic NPV, future net incremental benefits were discounted using a social discount rate. The choice of the social discount rate is based on the recent recommendations of the Bank found in the "Technical Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects". This Note recommends to use a 6 percent discount rate in World Bank's project evaluations. This discount rate was applied in the context of PASEC.

VI. Results

30. **Financial analysis**. The financial IRR and NPV were calculated for several sub-projects (CSA practices for rain-fed and irrigated systems). Results are summarized in tables 10 and 11.

Table 10: Financial analysis of sub-projects (rainfed systems)

Parameters/ assumptions	unit	millet/ cowpea	millet/ sorghum/ cowpea	millet/ groundnut	millet
CSA investment		ANR, Zaï/Tassa, animal traction, tools, living hedges etc.			
Shock/drought frequency	years	Every five years			
Shock/drought impact	%	Production revenues drop during and after a shock (by 50% WOP and by 20% WP)			
Recovery time after shock	years	2 years (WOP), 1 year (WP)			
IRR	%	15.2%	20.3%	22.5%	10.2%
NPV[32]	CFAF	110,514	190,816	222,402	33,607

[31] To comply with the purchasing prices parity, and based on findings from FAO in Mali and Burkina Faso (Monitoring and Analyzing Food and Agricultural Policies- MAFAP, 2013), 20 percent overvaluation of the exchange rate between the CFA and the USD was considered to estimate the shadow price of foreign exchange in Niger.

[32] The discount rate in financial analysis is assumed as the potential gains of alternative risk-free investments on the market. Due to data scarcity, a "commonly used"/ standard 8% discount rate was assumed for the financial analysis.

Table 11: Financial analysis of sub-projects (irrigated systems[33])

Production model	CSA investments	Gross margin/ha (CFA)	Gross margin/ beneficiary (1 HH operates on 0.25ha)	IRR (10 years)	NPV (10 years, '000 FCFA)
Onions	About 3,8 million CFAF/ha, inc. wells, pumps, drip irrigation, farming tools, living hedges, livestock units	1,435,480	358,870	37.5%	4,628.0
Tomatoes		1,228,572	307,143	28.8%	3,103.8
Cabbage		1,160,347	290,087	21.5%	2,096.6
Sweet potatoes		1,399,016	349,754	32.8%	3,791.6
Sugar cane		1,023,129	255,782	19.1%	1,651.3

31. **Economic analysis.** Results suggest that the overall project is economically profitable. Given the CDD nature of the project, the results should be considered as indicative, rather than final. Good practice would be to re-run the EFA during project implementation, more particularly at mid-term review, with data collected through the M&E system. The Economic IRR and NPV are summarized in table 12.

Table 12: Economic IRRs and NPV of PASEC

	EIRR	NPV (20 years, 6%, USD '000)
Base scenario	16.4%	98,155

VII. Sensitivity analysis

32. A sensitivity analysis was performed using some of the main variables affecting the model, namely: (i) output prices, (ii) yields (for example due to the increased incidence of pests), (iii) adoption rates, (iv) drought severity in year 5, and (v) social price of carbon. The sensitivity analysis also tested the impact on the EIRR of a decrease in the expected total benefit stream, for example due to more frequent droughts or rain failures, a scenario that could realistically happen, as suggested by the 2013 agricultural sector risk assessment performed by the Bank. Results show that the project is remains robust with changes in the magnitude of key parameters of the model, with IRRs above the opportunity cost of capital. Results are presented in table 13 below.

[33] The profitability of irrigated rice was not analyzed in details because of data scarcity on the WP and WOP scenario. However, results found in the Implementation and Completion Results Report (ICR) of the Bank-funded Private Irrigation Promotion Project (PIP2) suggest private irrigated rice schemes yield very satisfactory results in Niger.

Table 13: Sensitivity analysis[34]

Modeling scenario	EIRR
Base scenario	16.4%
With yield decreases…	
…by 10%	14.0%
…by 20%	12.7%
With output price decreases…	
…by 10%	14.5%
…by 20%	12.5%
With decrease in the social price of carbon…	
…by 30%	15.5%
…by 40%	15.2%
With a drought every 5 years, reducing benefits…	
…by 50%	15.4%
…by 70%	15.0%
With a reduction of the adoption rates…	
…by 10%	14.2%
…by 20%	12.2%
With a total reduction of the benefit stream...	
…benefits reduced by 10%	14.5%
…benefits reduced by 20%	12.5%

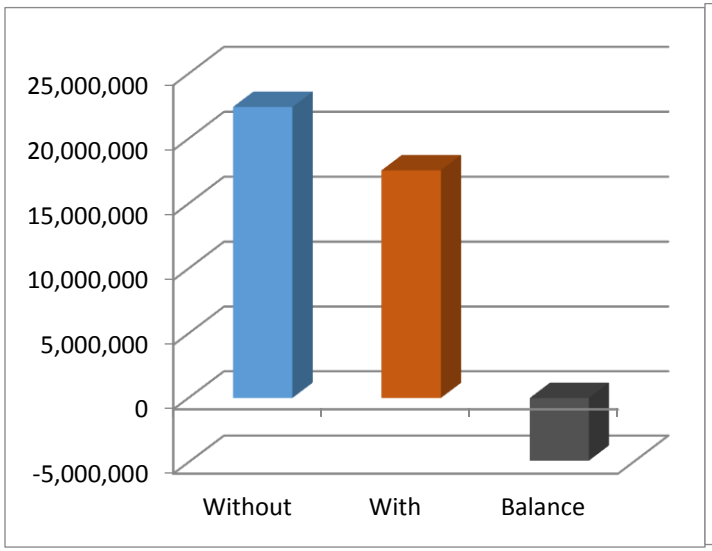
[34] Ceteris paribus

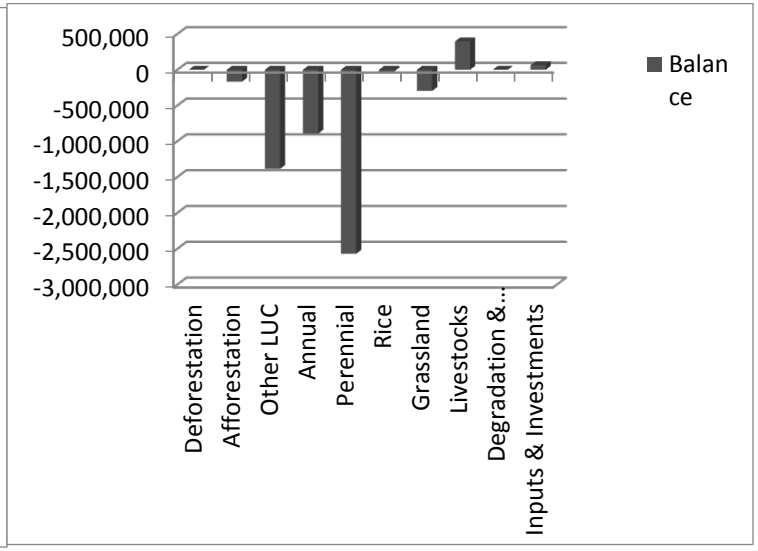
VIII. Detailed results of the carbon-balance analysis

Project Name	*Projet d'Appui à l'Agriculture*	Climate	*Tropical (Dry)*	Duration of the Project (Years)	*20*
Continent	*Africa*	Dominant Regional Soil Type	*Sandy Soils*	Total area (ha)	*145147*

Components of the project	Gross fluxes Without	Gross fluxes With	Balance	Share per GHG of the Balance CO_2 Biomass	CO_2 Soil	CO_2 Other	N_2O	CH_4	Result per year Without	Result per year With	Balance
	All GHG in tCO2eq										
	Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	-166,665	-166,665	-164,799	-1,867		0	0	0	-8,333	-8,333
Other LUC	0	-1,385,183	-1,385,183	1,057,832	-2,443,015		0	0	0	-69,259	-69,259
Agriculture											
Annual	0	-893,216	-893,216	0	-893,216		0	0	0	-44,661	-44,661
Perennial	0	-2,571,203	-2,571,203	-2,041,058	-530,145		0	0	0	-128,560	-128,560
Rice	33,063	10,328	-22,736	0	0		-365	-22,370	1,653	516	-1,137
Grassland & Livestocks											
Grassland	295,220	0	-295,220	0	-289,575		-3,241	-2,405	14,761	0	-14,761
Livestocks	22,071,492	22,468,159	396,667				383,284	13,382	1,103,575	1,123,408	19,833
Degradation & Management	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	43,843	106,756	62,913			47,882	15,031		2,192	5,338	3,146
Total	22,443,618	17,568,974	**-4,874,644**	-1,148,025	-4,157,817	47,882	394,709	-11,393	1,122,181	878,449	-243,732
Per hectare	155	121	-34	-7.6	-28.6	0.3	2.7	-0.1			
Per hectare per year	7.7	6.1	-1.7	-0.4	-1.4	0.0	0.1	0.0	7.7	6.1	-1.7

Figure 4 : Total without and with and project balance (tCO2e) Figure 5 : Balance per EX-ACT module (tCO2e)





ANNEX 4: IMPLEMENTATION ARRANGEMENTS

I. Overall Implementation Oversight and Management

1. **PASEC's institutional arrangements** are in line with the 3N Initiative implementation arrangements, which promote both adequate coordination mechanisms and efficient implementation of all activities by empowering different stakeholders according to their respective mandates and competences. The key principles underlying PASEC's institutional and implementation arrangements are the following: (i) strong linkages to the 3N Initiative; (ii) complementarities and partnerships with existing initiatives; (iii) ownership of the project by the national institutions with appropriate mandates; (iv) cost optimization in terms of project management; and (v) best use of lessons learned, with the most promising interventions scaled up.

2. **The Ministry of Agriculture** (MoA) will have overall responsibility for project implementation and supervision. Its role is justified by its comparative operational advantages, including the successful oversight of PRODEX, WAAPP, and CAP3. For project implementation, the MoA will maintain close consultation mechanisms with other departments involved (livestock, water, environment, and the National Dispositive for Prevention and Disaster Management –DNPGCC-) in the rural sector.

3. **Participating communes** will have legitimate leadership for all initiatives of subcomponent 1.1 that relate to scaling up CSA at commune level. The ICSIP will be derived from communes' PDCs and Annual Investment Plans (PIA). In spite of their numerous institutional weaknesses, communes have achieved encouraging results with the different phases of CAP and CAP-RC.

4. **Strategic steering mechanisms** for the project will be built upon the existing institutional architecture.

- At national level, national functions of guidance will be provided by a Project Steering Committee (PSC), chaired by the Minister of Agriculture. The PSC will ensure coherence between PASEC and other similar World Bank-supported operations in the agriculture and rural sector (CAP3, WAAPP, PRODEX, CAP-RC and Safety Nets Project). Specifically, the PSC is mandated to: (i) review and approve the Annual Work Plan and Budget (AWPB) prepared by the NCU; (ii) review technical and financial reports, evaluation reports, financial audits, and any other relevant or strategic document for project management; (iii) ensure the consistency of project activities with the expected objectives; (iv) facilitate coordination of project activities with various entities involved in implementation; and (v) make recommendations for mitigation of any risk/obstacle to project implementation. The PSC will include representatives of ministries in charge of Territorial Administration and Decentralization, Environment, Water, Education, Health, Spatial Planning and Community Development, Transport, Trade, Agriculture, Livestock, and Finance. It will also include representatives of the HC3N, the High Commissioner for the Modernization of the State, the Permanent Secretariat of the Rural Code, one

representative from each regional council, one representative per Governorate, representatives of communes (one representative by region), a representative of the national private sector, and a representative of civil society involved in CSA. The PSC will meet two times per year in ordinary session, and as many times as necessary in extraordinary session. The agenda and the meeting dates of the PSC are established by the President and are sent to members one week prior to the meeting. PSC operating costs are covered in the project budget.

- **At regional level**, the Regional Approval Committee (CRAP) will analyze integrated subprojects selected by commune councils to be financed under PASEC to ensure their compliance with sectoral policies, technical standards, economic effectiveness, and social and environmental safeguards policies. CRAPs will meet on a quarterly basis to examine the admissibility of applications for funding with the mandate to: (i) check the eligibility of communal subprojects and requests to the matching grant mechanism according to the project's guidelines; (ii) ensure subprojects' consistency with PDCs and national, regional, or departmental environmental policies; and (iii) ensure technical quality and compliance with the project's objectives. The RSU will prepare a subproject and matching grant request scoring grid to facilitate their evaluation by the CRAP. This grid will consider various criteria including those proposed for the consideration of environmental and social aspects. Project beneficiaries (communes and farmers' organizations) will be represented on the CRAP, which will be chaired by the region's Governor or his representative and will include representatives of the Ministries of Agriculture, Livestock, Environment, Water, and Spatial Planning, RECA, the Regional Council, and representatives of local NGOs, the local private sector, youth associations, and women's groups.

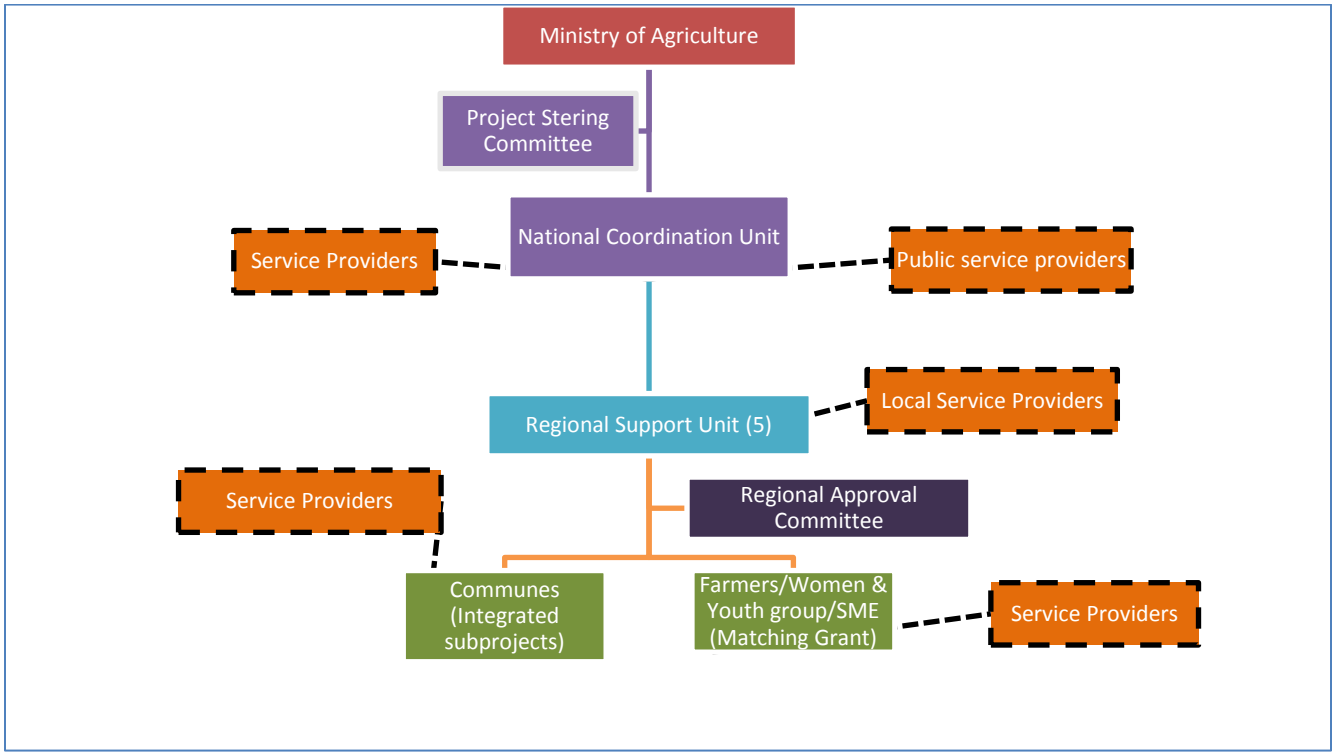
- **At commune level**, municipal councils will approve funding of integrated subprojects. Local authorities will be provided with adequate technical advice and support. For close project oversight, a Communal Monitoring Committee (CCS) will be created by regulatory act of the Commune Mayor. Either the mayor or his representative will chair the CCS. The RSU provides the secretariat to the CCS. The CCS will include representatives of the Municipal Council, representatives of various stakeholders in communes (farmers' associations, women's groups, and youth associations), decentralized technical services, and implementing partners. Administrative authorities of the district, NGOs, projects, and other actors in the commune may be invited to observe at CCS meetings. The CCS will advise on the ICSIP and integrated subprojects and will review the implementation reports of communal or community interest operations in the project. It shall ensure consistency, complementarity, and synergy between the project and other partners in the commune.

5. **The ongoing Bank funded project PRODEX will be responsible for the implementation of PASEC until the establishment of the National Coordination Unit (NCU).** During this period, PRODEX will recruit individual consultants to support the PASEC work program implementation. PRODEX will also will sign contracts with public and private service providers. The PRODEX will transfer the management of the Project to the NCU once the latter will be operational.

6. **Once established the National Coordination Unit (NCU)** will be responsible for day-to-day project implementation, coordination, and management. The NCU's main functions will be to: (i) ensure overall project coordination, making sure that implementation of components' activities complement each other; (ii) manage the financing, keep financial records according to international standards, implement internal management control, and ensure regular external audit (in collaboration with the Audit Authority in the country); (iii) prepare and implement Annual Work Plan and Budgets (AWPBs); (iv) carry out procurement work related to the project as per approved Procurement Plans (PPs); and (v) prepare quarterly, semi-annual, and annual project progress and M&E reports.

7. PASEC's institutional arrangements are shown in Figure 6

Figure 6 : Institutional Arrangements for PASEC



Implementation arrangements for Component 1: Investments for Scaling up Climate-Smart Agriculture

8. The NCU will work closely with each commune to ensure that CSA-integrated subprojects are implemented smoothly and that procurement activities and funds are disbursed in accordance with the guidelines. An NGO will be recruited in each region to support communes in preparing an ICSIP and integrated subprojects. The NGO will also support operational, organizational, and management activities related to the individual components of integrated subprojects.

9. For subcomponent 1.2 (Inclusive enterprise development for sustainability of CSA), access to the funds will be open to farmers' organizations, women's groups, youth associations, and agribusiness and MSMEs with proposed investment. Eligible activities, or combinations thereof, were described in the positive list. The matching grant applicants' requested financing will be assessed by the CRAP with the support of the NCU based on eligibility criteria established in the Project Implementation Manual. Matching grant recipients will receive advisory and technical support from a business service provider recruited by the project.

10. To sustain this component, the project will provide support to the FISAN mechanism. The project will support: (i) activities such as organizing workshops, undertaking training, and financing analytic studies and strategy development; and (ii) other activities that will lead to effective operation of the FISAN mechanism.

Implementation arrangements for Component 2: Innovative practices and Improved Service Delivery for Mainstreaming Climate-Smart Agriculture

11. The capacity-building activities in each of the project implementation institutions as defined under Component 2 will be coordinated by the NCU working closely with beneficiaries (communes, matching grant beneficiaries, and national entities involved in agriculture and rural development).

12. The Farmers Field School (FFS) program will be implemented by local farmers' organizations under general supervision of the MoA's Extension and Technology Transfer Department (DVTT) with close involvement of extension agents based in the commune. FAO will provide methodological support for FFS program implementation while INRAN, ICRISAT, and CCAFS will provide the necessary scientific support and backstopping.

13. The improved service delivery will be implemented under the supervision of the Agriculture General Directorate (DGA). DGA will be supported for the establishment of the e-voucher agricultural input subsidies platform and for the acquisition of the remote sensing application for crop performance monitoring.

14. INRAN will receive necessary support to increase foundation seeds production when the seed control and certification department is strengthened with appropriate trainings and equipment.

15. The National Meteorology Department (DMN) will be supported by the Project to establish weather forecast station in the selected communes. Additional support will be provided to the DMN for agro-meteorological information dissemination to farmers.

16. The Project will support RECA to implement an integrated web platform on agricultural best practices accessible to farmers' organizations, NGOs and decision makers. RECA will be also supported on disseminating technical information in the local languages; using community rural radios, and leveraging rural markets for information

dissemination; and delivering weather forecast and crop price information to farmers in selected communes through cellphones.

Implementation arrangements for Component 3: Contingent Emergency Response

17. The implementation arrangements for this component are defined in the "Immediate Response Mechanism Manual" already prepared and adopted by the GoN with the Bank's no-objection. This manual is in line with OP 8.00 "Rapid Response to Crises and Emergencies," which permits a range of simplified procedures.

Implementation arrangements for Component 4: Project Coordination and Management

18. Project coordination, fiduciary oversight, and M&E will be undertaken by the NCU. The NCU will report directly to the PSC on the performance of the approved AWPBs.

19. The NCU and RSU staffing and organizational charts are described in Figure 7 and Figure 8, respectively:

Figure 7: Staffing and Organogram of the NCU

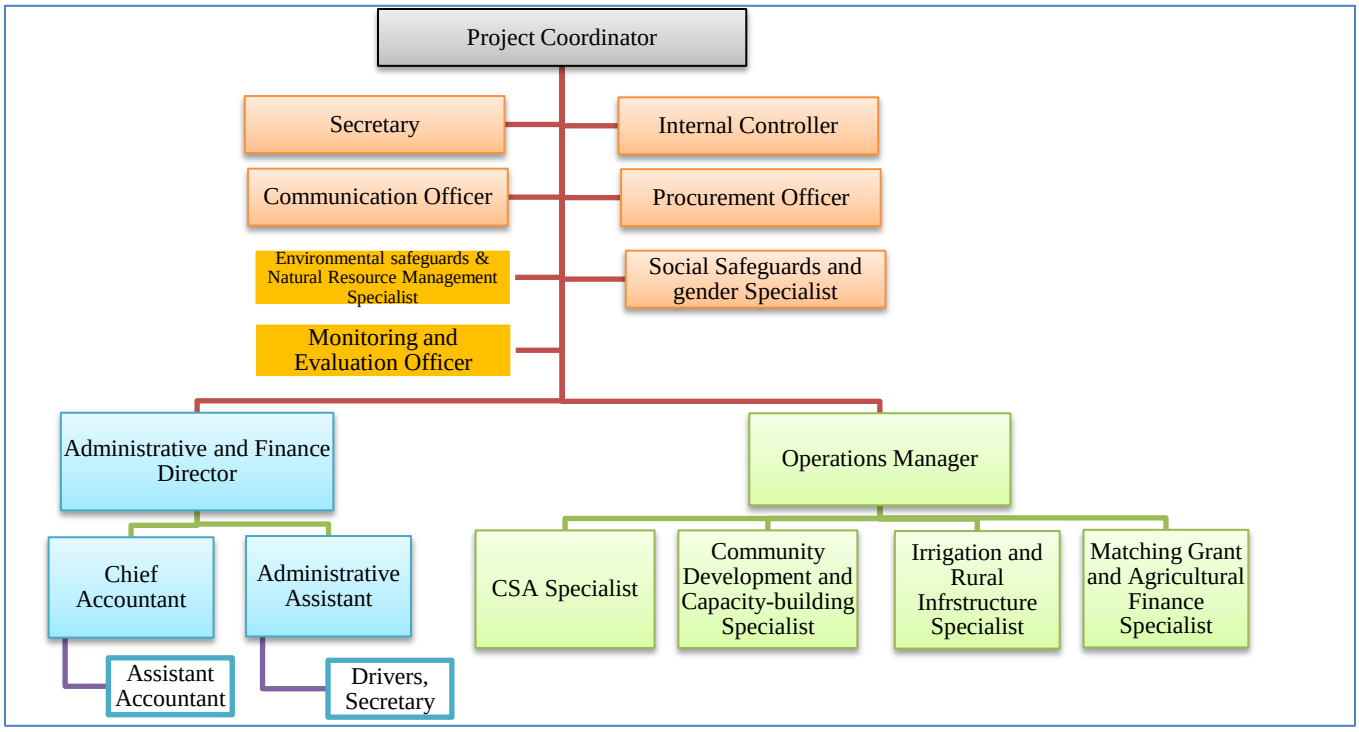
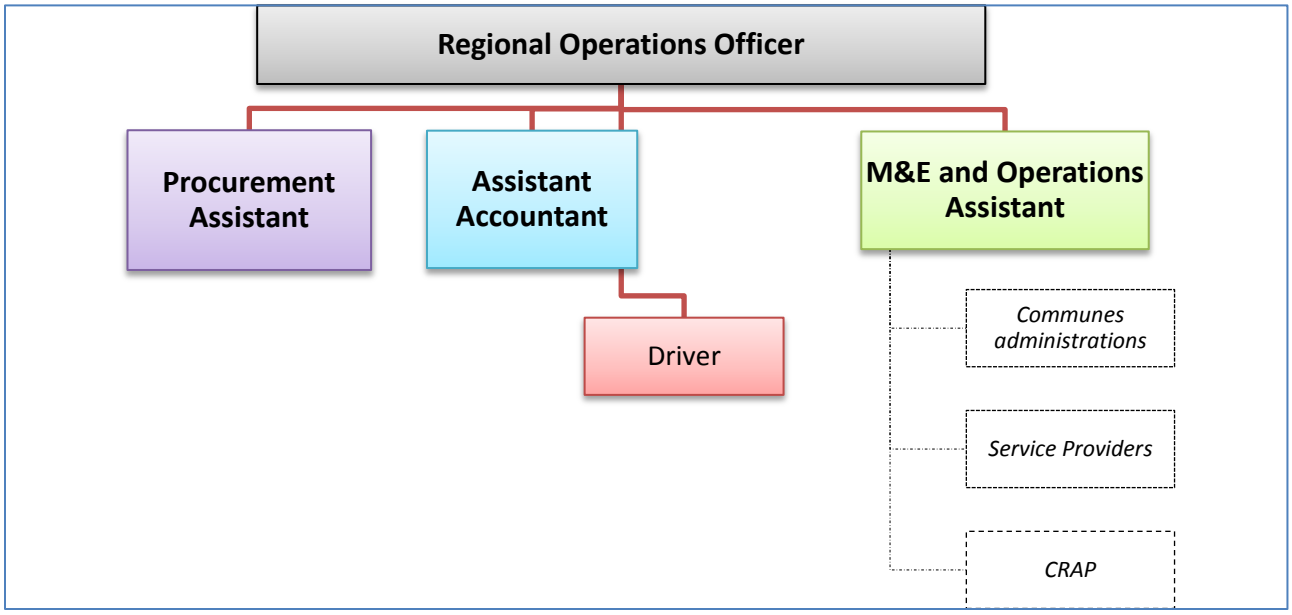


Figure 8: Staffing and Organogram of the RSU



II. Financial Management, Disbursements, and Procurement

Financial Management

Country Issues

20. Recent assessments performed by or at the request of the authorities identified a range of weaknesses in Niger's Public Financial Management (PFM) system. These assessments include the 2008 Public Expenditure and Financial Accountability Assessment (PEFA) and the repeat PEFA conducted in 2012. The draft report of the 2012 PEFA highlighted limited progress in comparison with the situation reflected in the 2008 PEFA report. Only eight indicators were upgraded, in particular in the areas of: policy-based budgeting; multiyear perspective in fiscal planning and public expenditure policy; public access to key fiscal information; predictability in the availability of funds for commitment of expenditures; and timeliness of submission of audit reports to legislature. The reports identified a number of critical shortcomings in budget credibility and execution processes as well as accounting, financial reporting, and internal and external controls.

21. In response to the Second Public Expenditure Management and Financial Accountability Review, the GoN, among others actions, introduced measures to progressively implement the PFM reform, and: (i) proposed in the short term the recruitment of agents to reinforce the General Directorate of Taxes (DGI's) fiscal actions capacity under the DGI's action plan; (ii) accompanied installation of the Supreme Audit Institution (SAI) since May, 18 2010, under ordinance n°2010-17 of April 15, 2010, taken by the President; this ordinance has since been upgraded to Organic Law as per WAEMU (West African Economic and Monetary Union) directives; (iii) elaborated an institutional support project aimed at strengthening the SAI; and (iv) installed the "*Direction Générale du Trésor et de la Comptabilité Publique*" under ordinance n°2010-15 of April 2010. Considering the weaknesses identified in Niger's PFM, the country risk rating is deemed *substantial*. Within the Ministry of Economy and Finance, the Directorate of Public Financial Management reforms is charged with initiating and following through the implementation of the PFM reform action plan, adopted by the Council of Ministers in December 2011. The translation of WAEMU PFM directives into national law and their timely implementation will also accelerate the PFM reforms in Niger.

Risk Assessment and Mitigation

22. Table 14 shows the results of the risk assessment from the Risk Rating Summary and identifies the key risks the project management may face in achieving project objectives. It also provides a basis for determining how management should address these risks.

Table 14: Financial Management – Risk Assessment and Mitigation

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Implementation	Conditions/Covenants (Y/N)	Overall Residual Risk rating
INHERENT RISK	**S**			**S**
Country level: Risk of delay in implementing the recently adopted PFM plan on improvement of on quality of PFM. Corruption and poor governance may affect public sector performance.	S	Joint donor and government regular review and evaluation of implementation progress of the PFM action plan. Successful implementation of the current Bank financed TA project, Institutional strengthening of the External Audit through an IDF grant under preparation. Continued Bank policy dialogue through the DPO (Development Policy Operation) series which includes triggers linked to PFM reforms. A number of institutions to help fight against corruption have been set up and are currently operational. Some of these institutions include: the Procurement Regulatory Agency, the High Commission of Anti-Corruption, and the General Inspection of Government Administration.	N	S
Entity level: Weak capacity and high risk of political interference.	S	Establish and clearly outline the role of the MoA in implementation of the project activities in the PIM and the manual of procedures, and in relevant legal texts. The role of other institutions involved in project activities' implementation will also be clarified.	N	S
Project level: The activities of the project involving several sectors may entail a delay in implementing the project activities.	S	The PSC will ensure regular monitoring of project activities.	N	S
CONTROL RISK	**S**			**S**
Budgeting: Low budget execution due to slow contracting processes.	S	The PSC will review and approve the annual work plans and budgets at the beginning of every year and the Financial Management staff at NCU will closely monitor the budget execution through quarterly IFRs.	N	S

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Implementation	Conditions/Covenants (Y/N)	Overall Residual Risk rating
Accounting: The newly created NCU shall be well staffed to properly handle the activities under the proposed Project.	S	Recruit 1 FM officer at the central level. In addition to the above, recruit 1 principal accountant ,and 1 accountant to support the FM officer	N N	S
Internal Controls and Internal Audit Inadequate internal controls to sufficiently cover the requirements of activities under the Matching Grant and Communes Subprojects activities. Absence of an internal audit function.	SH	Update the administrative, financial, and accounting procedures manual to incorporate activities under the proposed project. Set up an internal audit function to strengthen the internal control system, by recruiting one (1) principal internal auditor and one (1) internal auditor junior at the central level, and 3 internal controllers at the regional level.	Y- Before negotiations (done) N	S
Funds Flow Funds may be diverted and used for non-eligible activities as the communes do not have sufficient capacities to manage the subprojects.	S	1 Designated Account (DA) will be opened at a commercial bank acceptable to the Bank into which project funds will be deposited (DA-A) and will be managed by NCU. In addition to the DA, 5 operational accounts will be opened at each regional level to be managed by the RSUs.	N	S

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Implementation	Conditions/Covenants (Y/N)	Overall Residual Risk rating
Financial Reporting Involvement of 6 regional coordination units may delay the preparation of consolidated IFRs and annual financial statements for the audit.	S	Purchase and install an adequate computerized accounting system to fit the project's needs and generates useful information and financial statements. Extend the installation of the accounting system to the regional level to ensure continued processing of accounting information in a timely manner for IFRs and annual statements preparation at the NCU level. Agree on the IFR reporting and the annual financial statements format by the Negotiations.	Y - within three months of effectiveness	S
Auditing Inadequate external audit arrangements.	S	NCU under the MoA will be responsible to recruit external auditor to include the activities of the new project, or consider recruiting a new external auditor based on ToRs satisfactory to the Bank.	Y- Within 6 month of Effectiveness.	S
Overall FM Risk Rating	**S**	The functioning of all these FM arrangements and mitigating measures outlined above will be followed up by effectiveness and during supervision missions.		**S**

Note: H=High; S= Substantial; M= Moderate; L=Low.

23. In view of the general FM issues in the country and the current FM arrangements at NCU under the MoA, the overall FM risk rating for this project is rated as *Substantial*.

Summary of Strengths and Weaknesses

Strengths of Financial Management

24. The MoA has a track record in implementing the following IDA-financed projects: (i) Niger - Agro-Pastoral Export and Market Development Project (P095210), which was approved by the Board on March 26, 2009, and became effective on January 22, 2010. In addition NCU has: (i) developed an administrative, financial, and accounting procedures manual; (ii) a computerized accounting system; and (iii) qualified and experienced staff in place.

Weaknesses and Action Plan

25. Table 15 lists the actions that need to be taken to enhance PASEC's FM arrangements:

Table 15: Financial Management – Weakness and Action Plan

Weakness	Action	Responsible	Deadline
Weaknesses identified in the institutional arrangements	Sign the ministerial order establishing and staffing the NCU, including the Regional Support unit.	MoA	Before Negotiations (done)
Weaknesses identified in the internal control system	Elaborate and adopt the Administrative, Accounting, and Financial Procedures Manual dedicated to the proposed project.	MoA	Before negotiaions (done)
	Elaborate and adopt the Project Implementation Manual, including: (i) the detailed Matching Grant procedures; (ii) the detailed communes subprojects procedures; and (iii) the M&E aspects	MoA	Before negotiations (done)
	Appoint 1 Financial Management (FM) officer	MoA	
	Recruit 1 principal accountant ,and 1 accountant to support the FM officer	MoA	
	Purchase and install an adequate computerized accounting system to fit the project's needs and generates useful information and financial statements.	PRODEX/TF CU	Within 3 months of effectiveness
Lack of an internal audit function	Recruit 1 principal internal auditor, and 1 internal auditor junior at the central level, and 3 internal controllers at the regional level.	MoA	
Absence of external audit arrangements	Recruit an external auditor to audit the financial statements of the proposed project.	PRODEX/TF CU	Within 6 months of effectiveness

Project FM Arrangements

26. A summary of the key findings of the FM arrangements includes the following:

Budgeting

27. The budget process will be clearly stipulated in CSA's administrative, financial and accounting procedures manual. Annual budget and work plans for the proposed Project will be coordinated and prepared by NCU and approved by the Steering Committee with Bank no-objection in November of each year and any changes in the

budget and work plans will also be approved by the Committee with the Bank no-objection. In addition, the Steering Committee of the proposed project will: (i) discuss and review implementation strategies of the proposed project; and (ii) monitor and assess the implementation progress and results of the proposed Project.

Accounting

28. Accounting system and policies: An integrated financial and accounting system will be purchased and installed which will be used by NCU and the regional support unit. The project code and chart of accounts will be developed to meet the specific needs of the project and documented in the manual of procedures being elaborated. The prevailing accounting policies and procedures in line with the West African Francophone countries' accounting standards – SYSCOHADA - currently in use in Niger's ongoing Bank-financed operations will apply. The accounting systems and policies and financial procedures used by the project will be documented in the project's Administrative, Accounting, and Financial Manual.

29. FM staffing arrangements: Before the project management hands over from PRODEX TFCU to the new coordination unit (NCU), an FM officer will be recruited based on ToRs acceptable to the Association. In addition, a Principal Accountant and an additional accountant will be recruited at the central level to manage the CSA activities to ensure adequate segregation of duties to manage the activities under the proposed Project. The FM team at NCU will be responsible for collecting and controlling the invoices, maintaining the books of account, processing financial data, and making payments to suppliers and service providers. The FM team at NCU will be responsible for monitoring the approved consolidated budget and consolidating the quarterly IRFs and annual financial reports for the annual audit.

Internal Control and Internal Auditing

30. Internal controls systems: FM and administrative procedures will be designed in order to document financial management arrangements, including internal controls, budget process, asset safeguards, and to clarify the roles and responsibilities of all stakeholders. In addition, a Project Implementation Manual (PIM) will be prepared by MoA to lay out how the Matching Grant activities, and the CSA integrated communal subprojects activities will be implemented. The PIM will therefore describe specifically (i) the selection process for beneficiaries and the role of the Matching Grant specialist; (ii) the minimum eligibility requirements, e.g., qualified FM staff, experience, feasibility and usefulness of the operation, financial capacity, etc.; (iii) simplified management tools (e.g., accounting and reporting); and (iv) the external control mechanism. In addition, the Steering Committee will ensure that staffing arrangements at both NCU and RSU are in place and sufficient to ensure adequate internal controls, preparation, approval, and recording of transactions as well as segregation of duties.

31. Internal auditing. To provide reasonable assurance on the Project transactions, before the project management is handed over from PRODEX TFCU to the new coordination unit (NCU), a Principal internal auditor, an internal auditor at NCU, and

three (3) internal controllers at RSU whose qualifications and experience and terms of reference are acceptable to the Association, will be recruited. The internal auditor will develop an annual audit plan using a risk-based approach. He will be responsible for the close monitoring of the implementation of the action plans aimed at addressing weaknesses revealed during supervision and audit missions, and will pay special attention to the matching grant mechanism (selection, implementation, reporting).

Financial Reporting

32. NCU will produce quarterly unaudited interim financial reports (IFRs) during project implementation, encompassing activities for all components (including MG activities). The IFRs are to be produced on a quarterly basis and submitted to the Bank within 45 days after the end of the calendar quarter. The IFR will present the financial statements (sources and uses of funds and use of funds per component/category/activity) as well as a description of procurement and technical activities.

33. NCU will also produce the project's annual financial statements, which will be in compliance with SYSCOHADA and World Bank requirements. These financial statements will be comprised of:

- Statement of sources and uses of funds, which includes all cash receipts, cash payments, and cash balances;
- Statement of commitments;
- Accounting policies adopted and explanatory notes;
- A statement by management indicating that project funds have been expended for the intended purposes as specified in the relevant financing agreements.

Funds Flow and Disbursement Arrangements

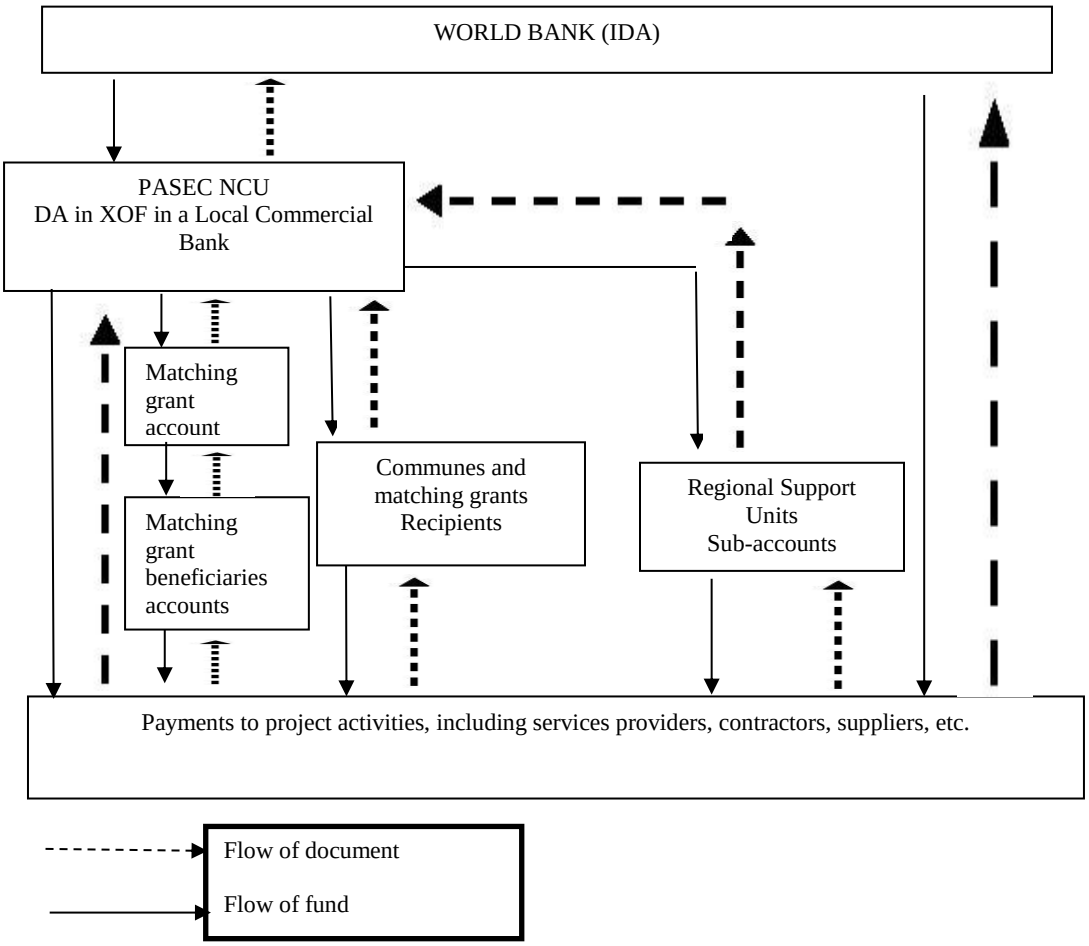
34. *Designated Account*: One Designated Account (DA-A) will be opened at a commercial bank in Niger that is acceptable to the Bank and managed by NCU. The DA will be used to make payment for eligible expenditures under the activities implemented by NCU according to the disbursement procedures described in the disbursement letter (DL). The currency for the DA will be the Franc CFA (FCFA). Documentation for all transactions shall be retained by the implementing entities and shall be made available for audits and to the Bank and its representatives, if requested. Disbursement arrangements will be detailed in the manual of accounting, administrative and financial procedures and the DL.

35. *Disbursement Methods*: Disbursements from the Bank Credit will be made using the following four (4) disbursement methods: Advance, Direct Payments, Reimbursement, and Special Commitments. An initial advance will be made into the DA upon receipt by IDA of a Withdrawal Application requesting a ceiling amount of CFAF 3 billion (estimated to represent four (4) months of cash forecast) needed by the implementing entities. Subsequent disbursements into the DA will be based on WA accompanied by SOEs. The supporting documentation for requests for direct payment

should include records that provide evidence of eligible expenditures (copies of receipt, suppliers' invoices).

36. *For activities under the Contingent Emergency Response Component (CERC-Component 3),* disbursement will be subject to the conditions precedent to accessing the CERC funds, namely that the Recipient has provided, and the Bank has accepted, evidence of the occurrence of an eligible crisis or emergency and the Recipient has prepared and adopted/adhered to the IRM Operations Manual. Disbursements under this component will follow procedures described in the IRM Manual including supporting documentation.

Figure 9: Flow of Funds



37. Disbursements by category. The table below sets out the expenditure categories and percentage of eligible expenditures to be financed out of the Financing proceeds taking into account the prevailing Country Financing Parameter for Niger.

Table 16: Disbursements by category

Category	Amount of the Financing Allocated (expressed in US$)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) CSA communal-integrated sub-projects under Part A.1 of the Project	48,000,000	100% of amounts disbursed
(2) Matching Grants under Part A.2 (i) of the Project	10,000,000	100% of amounts disbursed
(3) Goods, works, non-consulting services, consultants' services, Training and Operating Costs under the Project	53,000,000	100%
(4) Emergency Expenditures under Part C of the Project	0	100%
TOTAL AMOUNT	111,000,000	

Audit Arrangements

38. Annual Audit Reports and Management Letters: The annual financial statements will be prepared by NCU covering all project expenditures regardless of the implementing entities. The financial statements as well as the system of internal controls will be subject to an annual audit by a reputable, competent, and independent auditing firm, recruited by NCU based on ToRs satisfactory to the Bank. The auditors will provide an opinion on the financial statements of the project prepared by the NCU as per auditing standards acceptable to the Bank. The audit reports will be submitted to the Bank not later than six (6) months after the end of each financial year. The auditors will also provide a management letter detailing the status of the internal control systems in NCU and the regional coordination units.

39. Audit Completion Timetable: NCU committed to a clear timetable for the completion of the annual audit and the submission of the audit reports and management letters. The audit reports to be submitted are summarized in Table 17:

Table 17 : Audit Completion Timetable

Audit Report	*Responsibility*	*Due Date*
Audited project financial statements and opinion (incorporating DA opinion) and management letter	NCU	June 30

Conditionality and Financial Covenants

Conditions of Negotiations

- The ministerial order establishing and staffing the newly created NCU, including the Regional Support Unit (RSU) has been signed.

- The FM Procedures Manual is elaborated and adopted by the Recipient in form and content satisfactory to the Association;

- The Project Implementation Manual, including: (i) the detailed Matching Grant procedures; (ii) the detailed communes subprojects procedures; and (iii) the M&E aspects is elaborated and adopted in form and content satisfactory to the Association.

Dated covenants

- Recruit, not later than six (6) months after the Effective Date of the Financing Agreement, the external auditor referred to in Schedule 2 of the Financing Agreement and pursuant to terms of reference (ToRs) satisfactory to the Association;
- Acquire, and install, not later than three (3) months after the Effective Date of the Financing Agreement, and thereafter maintain accounting software acceptable to the Association, for the Project.

Other FM-related Conditions

40. The Borrower shall establish and maintain an FM system including records, accounts, and preparation of related financial statements in accordance with accounting standards acceptable to the Bank. The financial statements will be audited in accordance with international auditing standards. The audited financial statements for each period shall be furnished to the Association not later than six (6) months after the end of the project fiscal year. The Borrower shall prepare and furnish to the Association not later than forty-five (45) days after the end of each calendar quarter, IFRs for the project, in form and substance satisfactory to the Association. The Borrower will comply with all rules and procedures required for withdrawals from the DA of the project managed by NCU.

Conclusion of the FM Assessment

41. The FM assessment indicates that the MoA has FM arrangements in place that satisfy the Bank's minimum requirements under OP/BP10.00. **The overall residual risk rating is *substantial*.**

Procurement

Capacity Assessment and Remedial Actions

42. Procurement activities will be carried out by the National Coordination Unit under the responsibility of the MoA, reporting to the General Secretary of the Ministry of Agriculture. These activities will be supported within the Ministry by the Procurement Directorate (DMP) and the Technical directorate in their respective area of competency. At the regional level, the Regional Support Unit (RSU) will provide procurement assistance.

43. The Project Unit will carry out the following activities in close collaboration with the respective beneficiaries: (i) preparing and updating the Procurement Plan (PP); (ii) preparing bidding documents, draft requests for proposals (RFPs), evaluation reports, and

contracts in compliance with World Bank procedures; (iii) monitoring the implementation of procurement activities; (iv) developing procurement reports; and (v) seeking and obtaining approval of national entities and then IDA on procurement documents as required.

44. An assessment of the capacity of the Ministry of Agriculture, to implement procurement activities of the Project was carried out during the Project preparation and finalized during the appraisal. The assessment reviewed the organizational structure of the Ministry, the procurement capacities (past procurement experience, staff in charge of procurement, tools including manuals, procurement reporting, filing, use of software, etc.) the interaction between the different ministries and agencies involved in the implementation of Project.

45. The assessment found that : i) the Ministry of Agriculture and the beneficiaries (ministries and agencies) have the required technical expertise to support procurement processes (preparation of TORs, bidding documents, technical specification, technical support in evaluating bids and proposals), ii) the Ministry has gained acceptable experience in implementing World Bank procedures. Currently three WB financed projects (Agro-sylvo-pastoral Exports and Markets Development Project P148681, Community Action Program (Phase 3) P132306, West African Agriculture Productivity WAAP P122065) are under implementation and are managed through PIUs, iii) the mobility of the MoA staff and the insufficient competency transfer from consultants to the permanent staff has limited building appropriate procurement capacity at the Ministry. The staff currently in charge of procurement has limited experience in WB procedures procurement, (iv) long delays in the procurement processes and sometimes rigidity during the evaluation process have been observed, (v) the procurement filing needs also to be strengthened and aligned to the World Bank procurement filing requirements, and (vi) there is no specific procurement manual at the level of the MoA, but there are specific manuals for each WB financed project under the responsibility of the Ministry. The PRODEX manual is acceptable, since the activities are similar to the CSA project, and adjustments in PRODEX manual, to incorporate the new project activities, is feasible.

46. The key risks identified for procurement are: (i) the lack of proficient procurement staff to implement procurement actions on time and in line with Bank procurement procedures; (ii) the staff within the Ministry responsible for process control and approval are not familiar with Bank procurement procedures; (iii) inadequate communication and interaction between the technical directorates, the Procurement Unit, and the NCU put in place, which may lead to delays in the drafting of terms of reference (ToRs) or technical specification and poor estimation of the costs; and (iv) poor filing, which can lead to loss of documents. Overall, all these risks can cause mis-procurements, possible delays in evaluation of bids, and technical proposals leading to implementation delays, poor quality of contract deliverables and reputational risks to the World Bank and the project.

47. **The overall project risk for procurement is rated *Substantial*.**

48. **The residual risk is assessed as *Moderate*** after the following measures are adopted:

- A qualified and experienced procurement specialist to be located at NCU will be appointed to fully support all procurement activities for the Project, notably to ensure quality control and compliance with World Bank procedures.
- Qualified procurement assistants to be located at NCU and regional levels within RCU, depending of the volume of activities, will be appointed to support procurement activities;
- Complex procurement (all ICB, NCB, consultant selections) will be handled at the central level; procurement activities at the regional level will mainly be selected shopping and community based procurement.
- The PRODEX Unit will carry out all procurement activities of this Project until the recruitment of the PASEC NCU staff;
- A PP for the first 18 months of program implementation was prepared during appraisal and the final version was discussed and approved during negotiations. During implementation, the PP will be updated as required - at least annually - to reflect actual program implementation needs and improvements in institutional capacity.
- The PRODEX manual of administrative, financial, and accounting procedures will be updated to take into account this project and notably to clarify the role of each team member involved in the procurement process of the project and the maximum delay for each procurement stage, specifically with regard to the review, approval system, and signature of contracts.
- The NCU will monitor closely the procurement plans and will exercise quality control on all aspects of the procurement process, including evaluation, selection and award on a monthly basis.
- A workshop will be organized at the beginning of the project to train/update all key stakeholders involved in procurement on World Bank procurement procedures and policies.

- Hands-on training of identified high level staff on Bank procurement procedures will be organized during the life of the Project.

- An adequate filing system will be set up for the project records at the level of NCU. The Project will finance appropriate equipment and the Procurement specialist will ensure compliance with the Bank procurement filing manual.

The following table summarizes the agreed action plan:

Table: Action Plan Mitigations measures			
Risk	**Action**	**Responsibility**	**Date**
1- The lack of proficient procurement staff to implement procurement actions on time and in line with Bank procurement procedures	Recruit a qualified procurement specialist to support the NCU Recruit qualified procurement assistants	MoAPIU/IDA MoA/IDA-	Before handing over project management from PRODEX to the new NCU
2- The staff within the Ministry responsible for process control and approval are not familiar with Bank procurement procedures	Organize a workshop to update/train all involved actors in Bank procurement procedures Hands-on training of identified high level staff on Bank procurement procedures	NCU/IDA Procurement Specialist NCU/IDA	Three months after effectiveness During the life of the Project
3- Inadequate communication and interaction between the technical directorates , the procurement directorate, the NCU which may lead to delays in the drafting of terms of reference (ToRs) or technical specification and poor estimation of the costs	Update PRODEX manual to take into account the specificity of the project and all interactions between involved actors related to the procurement responsibility in line with the institutional arrangements agreed with the Borrower Closely monitor procurement plans and exercise quality control on all aspects of the procurement process, including evaluation, selection and award on a monthly basis.	MoA NCU	Three months after effectiveness During the life of the Project
4- Poor filing which can lead to loss of documents	An adequate filing system will be set up for the project records at NCU. The project will finance appropriate equipment and the Procurement Specialist will ensure compliance with the Bank's procurement filing manual	NCU	During the life of the Project

Procurement Arrangements

49. Procurement for the proposed project will be carried out in accordance with general Bank guidelines for procurement,[35] and the provisions stipulated in the Legal Agreement. The Borrower will prepare and submit to the Bank a General Procurement Notice (GPN) The Borrower will publish this additional GPN in United Nations Development Business (UNDB) online and in local newspapers of wide national

[35] 'Guidelines Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers' dated January 2011 revised July 2014 and the 'Guidelines Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 revised July 2014, and the 'Guidelines On Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants' dated October 15, 2006 and revised in January 2011.'

circulation. The Bank will arrange for its publication in UNDB online and on the Bank's external website.

50. Shortlists **for consultancy services for contracts** estimated to cost less than US$200,000 for civil works supervision and less than US$100,000 for others, equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

51. **Single Source contracts with Specialized organizations** : The following organizations listed below may provide consulting services taking into account their exceptional worth for the proposed assignments in line with respectively the Provision of Guidelines 3.8, 3.9 b) and 3.17 for UN Agency :

Entity	Amount ($)	Comments
FAO (UN agency)	2,200,000	• Methodological support and technical Assistance for the Farmers Field School Program Implementation associated with listening clubs • Training of trainers and installation of Rural Invest as software for sub-project preparation • Carbon balance monitoring
INRAN (National Research Institute)	1,000,000	• Provide CSA technologies
ICRISAT (International Organization based in Niger)	2,000,000	• Study CSA options • CSA technologies • Support CSA technologies impact • Technical assistance
RECA (National Network of Agriculture Chambers- NGO)	3 525 000	• Implementation of a farmers multimodal information system

52. **Requirement for National Competitive Bidding (NCB)**: Works, goods and non-consulting services contracts will use NCB procurement methods in accordance with national procedures using Standard Bidding Documents acceptable to IDA and subject to the additional requirements that:

- Each bidding document and contract financed out of the proceeds of the Financing shall provide that: (A) the bidders, suppliers, contractors, and their subcontractors, agents, personnel, consultants, service providers, or suppliers shall permit the Association, at its request, to inspect all accounts, records and other documents relating to the submission of bids and contract performance, and to have said accounts and records audited by auditors appointed by the Association; and (B) the deliberate and material violation of such provision may amount to an obstructive practice as defined in paragraph 1.16 (a)(v) of the Procurement Guidelines.
- Invitations to bid shall be advertised in national newspapers with wide circulation.

- The bid evaluation, qualification of bidders, and contract award criteria shall be clearly indicated in the bidding documents.

- Bidders shall be given adequate response time (at least four weeks) to submit bids from the date of the invitation to bid or the date of availability of bidding documents, whichever is later.

- Eligible bidders, including foreign bidders, shall be allowed to participate.

- No domestic preference shall be given to domestic contractors and to domestically manufactured goods.

- Bids are awarded to the bidder with the lowest bid evaluated provided this bidder is qualified.

- Fees charged for the bidding documents shall be reasonable and reflect only the cost of their printing and delivery to prospective bidders, and shall not be so high as to discourage qualified bidders.

53. ***Community Participation in Procurement:*** This will apply for small and social infrastructures, irrigated systems, minor repairs or public works etc. under the implementation of community based integrated sub-projects.

54. ***Procurement Plan.*** The Borrower will develop a PP for project implementation that provides the basis for the procurement methods. This plan will be reviewed by the Bank. After approval by the Bank, it will be available at the NCU. It will also be available in the project's database and on the Bank's external website. The PP will be updated in agreement with the Project Unit annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. All subsequent updates will be disclosed once they are approved by the Bank.

55. ***Procurement and Consultant Selection method:*** Table 18 summarizes the procurement methods and consultant selection methods to apply for this project.

Table 18: Procurement Thresholds

No	Expenditure Category	Contract Value Threshold**(US$)	Procurement Method
1	**Works**	C>=5,000,000	ICB
		50,000= <C < 5,000,000	NCB
		C<50,000	Shopping
		All values	Direct Contracting
2	**Goods and Services** (*other than Consultant Services)*	C>=500,000	ICB
		50,000= <C < 500,000	NCB
		C<50,000	Shopping
		All values	Direct Contracting
3	**Consultant Services (Firms)**	C>= 200,000 firms	QCBS, QBS
		< 200,000 firms	QCBS, FBS, CQS, LCS
		All values	SSS
	Individual Consultants	All values	IC
		All values	SSS

Note:

ICB – International Competitive Bidding

NCB – National Competitive Bidding

QCBS – Quality and Cost-Based Selection method

IC – Individual Selection method

SSS – Single Source Selection

QBS – Quality Based Selection

FBS – Fixed Budget Selection

CQS – Consultants' Qualification Selection(for Contracts below US$ 100 000)

LCS – Least Cost Selection

56. **Procurement Prior review: The procurement risk is rated *Substantial*.** Table 19 summarizes the procurement prior review for "Substantial risk." These prior review thresholds can evolve according to the variation of procurement risk during the life of the project.

Table 19: Prior Review Thresholds for Substantial Risk

No	Expenditure Category		Amount in US$	Amount in equivalent FCFA
1	Works		>=10,000,000	>=5,000,000,000
2	Goods and Non-consulting Services		>=1,000,000	>=500,000,000
3	Consultant Services		>=500,000	>=250,000,000
4	All Direct Contracting and Single Source contracts with consultant (firms)	*Works*	>=100,000	>=50,000,000
		Goods	>=100,000	>=50,000,000
		Consultant services	>=100,000	>=50,000,000
	Individual Consultants (*Single Source contracts)*		>= 100,000	>= 50,000,000
	Individual Consultants (*based on comparison of CVs*)		>=200,000	>=100,000,000

*Note***:** All TORs, regardless of the value of the contract and the selection method, are subject to prior review.

57. ***Operating costs.*** Operating costs financed by the project are incremental expenses arising under the project, and based on AWPBs approved by the Association. Such costs may include office rent and maintenance, utilities (including electricity, water, and gas), communications (including telephone and internet charges), equipment rent, operation and maintenance, office materials and supplies (stationary and other consumables, but not the purchase of equipment), lease of vehicles, operation, maintenance and repair, and travel and transport costs of staff associated with project implementation. These items will be procured using the procedures detailed in the manual reviewed and found acceptable to the Bank.

58. ***Frequency of procurement supervision.*** In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment has recommended two field supervision missions and at least one post-procurement review per year. The standard post-procurement reviews by Bank staff should cover at least 10 percent of contracts subject to post-review. Post-reviews consist of reviewing technical, financial, and procurement reports on project procurement actions by Bank staff or consultants selected and hired by the Bank according to procedures acceptable to the Bank. Project supervision missions shall include a Bank procurement specialist or a specialized consultant.

59. ***Fraud, coercion, and corruption***. The implementing agencies as well as bidders and service providers, (suppliers, contractors, and consultants) shall observe the highest standard ethics during the procurement and execution of contracts financed under the

project in accordance with paragraphs 1.16 and 1.17 of the Procurement Guidelines and paragraphs 1.23 and 1.24 of the Consultants Guidelines, in addition to the relevant articles of the Niger Public Procurement Code which refers to corrupt practices. The project's procurement activities will be carried out in accordance with the "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants," dated October 15, 2006, and updated in January 2011.

60. ***Procurement information and documentation – filing and database***. Procurement information will be recorded and reported as follows:

- Complete procurement documentation for each contract, including bidding documents, advertisements, bids received, bid evaluations, letters of acceptance, contract agreements, securities, related correspondence, etc., will be maintained at the level of respective ministries in an orderly manner, readily available for audit.

- Contract award information will be promptly recorded and contract rosters as agreed will be maintained.

- Comprehensive quarterly reports indicating: (i) revised cost estimates, where applicable, for each contract; (ii) status of on-going procurement, including a comparison of originally planned and actual dates of the procurement actions, preparation of bidding documents, advertising, bidding, evaluation, contract award, and completion time for each contract; and (iii) updated procurement plans, including revised dates, where applicable, for all procurement actions.

Environmental and Social (including safeguards)

61. To ensure adequate and timely implementation of all safeguards measures outlined in both the safeguards instruments and project appraisal documents, including legal ones, a two-person team of Social and Environmental Specialists (SESS) will be hired to form a small safeguards unit within the NCU. The Social Safeguards Specialist will be responsible for both social safeguards and social development – including gender, youth, and vulnerable groups aspects of the project; the Environmental Safeguards Specialist will be responsible for environmental safeguards and natural resources management - including climate change aspects of the project. The two will work in close tandem with the World Bank Group safeguards specialists, who will ensure that the SESSs' technical capacity is improved throughout the project lifecycle.

62. During project implementation, the two will work closely with the World Bank Group safeguards specialists to ensure that the standard quality of safeguards documents is met and adequately reported upon. Likewise during implementation, the SESSs will prepare and share with World Bank Group safeguards specialists periodic reports on the status of safeguards implementation and monitoring. The NCU will agree on core recommendations to implemented after each supervision/implementation support mission to ensure compliance with legal documents.

Monitoring and Evaluation

63. **General characteristics**. The results monitoring framework summarizes: expected results; indicators and related baseline data of outputs and outcomes; milestones; and a timeline for progress. Based on the M&E guidance prepared, the project's M&E system is designed to inform the results monitoring framework. The M&E system will: provide information to verify progress toward and achievement of results (outputs, outcomes, and impacts); support learning from experience; and promote accountability for results.

64. **Results measurement for project performance**. The baseline study remains the starting point for PASEC results measurement. It will serve as a benchmark for routine project monitoring (quarterly report, Annual Project Report) during project implementation. The project evaluation will be conducted through a mid-term evaluation and an end-of-project evaluation.

65. **Learning from experience.** As scaling up the most promising CSA technologies and interventions is key for the project, learning from experience based on evidence generated through the M&E system remains key for reinforcing project results. Therefore, the project will strengthen the link between M&E and knowledge management and communication. The M&E evaluation system will support knowledge products and services that will be disseminated through a wide communication channel, targeting project beneficiaries and focusing on user-friendly communication tools.

66. **Accountability for results.** In addition to the M&E reporting requirement, the PASEC M&E system will involve an accountability mechanism and process (PSC meetings, stakeholder consultations, a Mid-term Review). Information-sharing and stakeholder involvement and participation at all stages of the project cycle will be a core component of the project's accountability for results. The project will ensure that stakeholders/ beneficiaries have access through various channel to timely, relevant, and clear information about the project's M&E findings and will incorporate their views in the project review and decision-making process.

67. **Institutional arrangements.** At the national level, the M&E team (NCU) will lead all aspects of M&E and will provide operational tools and instruments for data collection at the regional and local levels. NCU will collect and validate upstream reports and monitor information from the regional M&E specialists (RCUs) and from each of the national institutions involved in project activities to facilitate decision-making processes.

68. **Harmonization and integration with national and sectoral M&E systems**. PASEC will develop consistent efforts to empower national institutions in the M&E of project outcomes, ensuring that the system is strongly linked to the national M&E system for the 3N Initiative.

69. **Importance of the M&E system.** By producing timely and pertinent information, the M&E system will be a key management instrument aimed at helping the decision-

making process. Outcomes/results of activities will be measured by qualitative and quantitative indicators.

ANNEX 5: IMPLEMENTATION SUPPORT PLAN

Niger: Climate-Smart Agriculture Support Project

Strategy and Approach for Implementation Support

1. To accelerate project readiness for implementation, the Government of Niger (GoN) financed under the ongoing PRODEX's basic primary studies the preparation of manuals that impact project readiness. Preparation activities to meet the readiness conditions for implementation include: (a) recruitment of consultants; (b) conduct of key preparatory studies; and (c) organization of workshops and study tours. The consultancy work includes: (i) preparation of six key technical studies; (ii) preparation of environmental and social safeguards instruments for the project; (iii) preparation of the Project Implementation Manual (PIM); (iv) elaboration of guidelines for climate-smart agriculture (CSA) plan preparation; and (v) elaboration of Administrative, Accounting, and Financial Procedures Management and M&E Manuals.

2. The strategy for implementation support was developed on the basis of the nature of the project and responds to complexities of the project given the capacity for implementation. The implementation support's objective is to ensure that government agencies involved properly implement the project. It also ensures that the World Bank's resources and staff are sufficient to supervise and support this implementation. The strategy basically aims to make implementation support to the client more flexible and efficient, and will focus on the principal risks identified and the agreed risk mitigation measures described in the SORT. It will also provide the technical advice necessary to facilitate achieving the project development objectives (PDOs).

3. The Implementation Support Plan's (ISP) strategy was developed according to the nature and characteristics of the project, as well as its risk profile. The ISP also identifies the minimum requirements to meet the Bank's fiduciary obligations.

4. Collaboration with other key stakeholders and the GoN is a central factor for project implementation. The GoN developed several key policies and created and/or strengthened national institutions directly linked to decentralization, poverty reduction, and local development planning. The institutional framework on environmental issues, in general, and on those related to sustainable land management in particular, is very rich and diverse in Niger. These structures and institutions, whose missions and mandates are clearly defined, will play a major role in project implementation.

5. The main elements of the ISP are the following:

- ***Technical support***. Technical support will be provided to the participating agencies in general, and the Technical and Fiduciary Coordination Unit (NCU) in particular. This will ensure compliance with different agreed modalities and procedures. On the other hand, experts of the NCU will provide regular inputs to the agencies in each of these activities.

- ***Procurement.*** Implementation support will include the following elements: (a) providing training; (b) reviewing procurement documents and providing timely feedback to the Procurement Committee; (c) providing detailed guidance on the Bank's Procurement Guidelines to the Procurement Committee; and (d) monitoring procurement progress against the detailed Procurement Plan (PP). During the regular implementation support missions, the PP will be updated at least once each year (or more often as required to reflect actual project implementation needs) and post-procurement reviews will be carried out at a minimum once annually. IDA will carry out a sample post-review of contracts that are below the prior review threshold for contracts implemented to ascertain compliance with the procurement procedures as defined in the legal documents. The procurement post-reviews should cover at least 15 percent of contracts subject to post-review, as the risk rating is *Substantial*.

- ***Financial management.*** FM supervision will start by assessing the progress of the project management unit staffing and reviewing the plan in place in order to execute disbursements following FM guidance. This supervision will take place before contracts are awarded in case improvement measures need to be taken before disbursement. The FM supervision will also review quarterly progress and financial audits. In terms of resources, a country office-based staff is expected to be required for eight weeks. Based on the outcome of the FM risk assessment, the following ISP is proposed. Its objective is to ensure the project maintains a satisfactory FM system throughout the project's life.

Table 20: Proposed Implementation Support Plan for FM

FM Activity	Frequency
Desk reviews	
Interim financial report (IFR) review	Quarterly
Audit report of the project's financial statements review	Annually
Review of other relevant information such as interim internal control systems reports	Continuous as they become available
On-site visits	
Review of overall operation of the FM system	Semi-annual (Implementation Support Mission)
Monitoring of actions taken on issues highlighted in audit reports, auditors' management letters, internal audits, and other reports	As needed
Transaction reviews (if needed)	As needed
Capacity-building support	
FM training sessions	During implementation and as needed

- ***Safeguards:*** Social and environmental safeguards support will include visits to project areas and the monitoring of mitigation measures. During construction, monitoring is necessary to ensure compliance with environmental and social safeguards related to the infrastructure projects, including attention to gender,

youth, and vulnerable groups' differences and impacts. The two SESS (Social and Environmental Safeguards Specialists) and various other key actors of the project will be trained on safeguards throughout the project lifecycle to ensure successful implementation of core safeguards requirements.

- ***M&E***: Adequate support to M&E activities will occur via staff missions to project sites at least twice a year to closely monitor and assess project performance.

- ***Technical support***: The Bank will provide continuous extensive technical support through participation in the supervision missions, the Mid-term Review, and eventual *ad hoc* advisory services. This support will be crucial to identify the main factors that may hinder proper implementation of activities. The support will include a continuous assessment of risks.

6. The draft ISP for the first 12 months after project approval is shown in Table 21:

Table 21: Draft Implementation Support Plan

Activities	Actions	Expected Results	Responsible Actor	Implementation Date or Time After Approval
Project preparation				
Project Implementation manual (PIM)	Prepare a PIM	PIM prepared and adopted before negotiations	Ministry of agriculture/HC3N	March 2016 (completed)
Administrative and financial procedures manual	Prepare a PIM	Manual prepared and adopted before negotiations	Ministry of agriculture/HC3N	March 2016 (completed)
Launch the recruitment of technical consultants for the Project Coordination Unit	Prepare ToRs	Contracts signed	Ministry of agriculture/HC3N	July 2016 (ongoing)
Preparation of the first CSA plans and integrated Subprojects	Information, negotiations	PPs and subproject contracts signed	MAG/HC3N/PRODEX TFCU	July 2016 (ongoing)
Dated covenants				
Designated Account opening	Open DA	Account opened and references forwarded to the Bank	Ministry of Finance	July 2016
Recruitment of an internal and an external auditor	Advertise Select	Contract for the internal auditor	MAG/HC3N/NCU	July 2016
Installation of the accounting software	Procurement	Accounting software installed	MAG/HC3N/NCU	July 2016
Start-up				
Interim 18-month Work Plan and Budget and Procurement Plan (WPB&PM)	Prepare a WPB&PM	WPB&PM approved	NCU	March 2016 (completed)
Official project launch	Prepare the launch workshop	Launch workshop organized	NCU	September 2016
Component 1: Investments for Scaling Up Climate-Smart Agriculture				
Sensitization campaigns	Organize national, regional, and local meetings, workshops/seminars	The public is sensitized about the project	NCU, RSUs	September 2016
Recruitment of capacity-building service providers for communes	Prepare ToRs for the consultant Hire the consultant	Contract signed Capacity-building activities have started	NCU, communes	December 2016
Recruitment of business advisory	Prepare ToRs for the consultant	Contract signed	NCU	December 2016

Activities	Actions	Expected Results	Responsible Actor	Implementation Date or Time After Approval
service providers for matching grant recipients	Hire the consultant			
Preparation of CSA-integrated plans and integrated subprojects	Prepare ToRs for the consultant Hire the consultant			February 2017
Selection and training of first batch of matching grant beneficiaries	Organize local workshops for information on the matching grant mechanism ad	Commune bodies and farmers, youth, and women groups are trained	NCU, RSUs	February 2017
Implementation of the first portfolio of CSA-integrated subprojects	CSA SPs approved by communes Complete subproject approval by CRAP	Conventions for subprojects signed	NCU, communes, CRAP	March 2017
Component 2: Innovative practices and Improved Service Delivery for Mainstreaming Climate-Smart Agriculture				
Selection of service providers for farmers' access to information	ToRs of service providers Contract signed	Contract signed	NCU	February 2017
Component 4: Project Coordination and Management				
Updated Work Plan and Budget and Procurement Plan (WPB&PP)	Update WPB&PP	WPB&PP approved	PSC, NCU,	July 2016
Office equipment	Prepare the main procurement dossiers for office equipment including computers	First procurement dossiers submitted for Bank approval	NCU	September 2016
Communication and knowledge management system	Prepare ToRs for the consultant who will establish the communication system Hire the consultant who will establish the communication system	Contract signed	NCU	September 2016
Establishment of a Governance and Anti-Corruption (GAC) Action Plan and Grievance Redress Mechanism (GRM)	Prepare ToRs for the consultant who will establish the GAC Action Plan and GRM Hire the consultant who will support implementation of the GAC Action Plan and GRM	Contract signed	NCU	
M&E report	Prepare report	Report approved	NCU, RSUs	December 2016

ANNEX 6: MAP

Niger: Climate-Smart Agriculture Support Project (PASEC- P153420)