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Report No: PAD3318

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED CREDIT

IN THE AMOUNT OF EUR 172.9 MILLION
(US$200.0 MILLION EQUIVALENT)

TO THE

REPUBLIC OF CAMEROON

FOR A

VALORIZATION OF INVESTMENTS IN THE VALLEY OF THE LOGONE

NOVEMBER 5, 2021

Water Global Practice
Western and Central Africa Region

CURRENCY EQUIVALENTS

(Exchange Rates Effective October 31, 2021)

Currency Unit =	Central African CFA Franc (XAF)
XAF 566 =	US$1
US$1=	SDR 0.86422954

FISCAL YEAR
January 1 - December 31

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ABBREVIATIONS AND ACRONYMS

CAA	*Caisse Autonome d'Amortissement*/Autonomous Amortization Funds
CAADP	Comprehensive Africa Agriculture Development Program
CAR	Central African Republic
CEMAC	Central African Economic and Monetary Community
CGER	*Centres de Gestion Economique Rural*/Organizational Management Support Centers
CTI/CIT	Center for Technological Innovation/*Centre d'Innovation Technologique*
COVID-19	Coronavirus Disease
CPF	Country Partnership Framework
CSA	Climate-Smart Agriculture
CSO	Civil Society Organization
CTR	*Commission Technique de Réhabilitation des Entreprises du Secteur Public et Parapublic/*Technical Commission for Rehabilitation of Public Sector Enterprises
DA	Designated Account
DFIL	Disbursement and Financial Information Letter
DG	Director-General
DPO	Development Policy Operation
DS	Dry Season
DSA	Debt Sustainability Analysis
DSDSR	*Document de Stratégie de Développement du Secteur Rural*/Rural Development Strategy
E&S	Environmental and Social
EFA	Economic and Financial Analysis
EHS	Environmental, Health and Safety
EPP	Emergency Preparedness Plan
EPT	Evapotranspiration
ERP	Emergency Response Plan
ERR	Economic Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization
FCFA	CFA Franc
FFS	Farmer Field School
FM	Financial Management
FRR	Financial Internal Rates of Return
GBV	Gender-based Violence
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Global Information System
GoC	Government of Cameroon
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service

ha	Hectare
HEIS	Hands-on Expanded Implementation Support
HVCs	higher value crops
IDA	International Development Association
IDF	Institutional Development Fund
IDP	Internally Displaced Persons
IFR	Interim Financial Report
IPF	Investment Project Financing
IRAD	Institute of Agricultural Research for Development
IVA	Independent Verification Agent
LCBC	Lake Chad Basin Commission
LCDAP	Lake Chad Development and Climate Resilience Action Plan
M&E	Monitoring and Evaluation
MES	Monitoring and Evaluation System
MFD	Maximize Financing for Development
MINADER	*Ministère de l'Agriculture et du Développement Rural*/Ministry of Agriculture and Rural Development
MINEPAT	*Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire*/Ministry of Economy, Planning and Regional Development
MINEPDED	*Ministère de l'Environnement, de la Protection de la Nature et du Développement Durable*/Ministry of Environment, Nature Protection and Sustainable Development
MOU	Memorandum of Understanding
mt	Metric Tons
NADF	National Agricultural Development Fund
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
NPF	New Procurement Framework
NPV	Net Present Value
O&M	Operations and Maintenance
OECD	Organization for Economic Co-operation and Development
OHS	Occupational Health and Safety
OIRE	State Recognized Inter-Professional Organization
OP/BP	Operational Policy/Bank Procedure
PACA	*Programme d'Appui à la Compétitivité Agricole*/Cameroon Agricultural Competitiveness Project
PAP	Project-Affected Person
PBC	Performance-Based Condition
PDO	Project Development Objective
PFI	Partner Financial Institution
PIDMA	*Projet d'Investissement et de Développement des Marchés Agricoles*/Agriculture Investment and Market Development Project
PIU	Project Implementation Unit
PLL	Precision Land Leveling
PMP	Pest Management Plan
PNIA/NAIP	*Plan National d'Investissement Agricole*/National Agriculture Investment

	Program
PIM	Project Implementation Manual
PPA	Project Preparation Advance
PPF	Project Preparation Facility
PPP	Public Private Partnership
PPSD	Procurement Strategy for Development
PSC	Project Steering Committee
PSP	Private Sector Participation
PULCI	*Projet d'Urgence de Lutte Contre les Inondations/*Flood Emergency Project
R&D	Research and Development
RAP	Resettlement Action Plan
RF	Results Framework
RPF	Resettlement Policy Framework
RTMG/*GRSP*	Regional Technical Monitoring Group/*Group Regionale Suivi Technique*
SAED	*Société d'Aménagement et d'Exploitation des Terres du Delta et de la Vallée du fleuve Sénégal*/Land Development and Exploitation Company of the Delta and Senegal River Valley
SCD	Systematic Country Diagnostic
SDR	Special Drawing Rights
SEA	Sexual Exploitation and Abuse
SEMRY	*Société d'Expansion et Modernisation de la Riziculture de Yagoua*/Society for the Expansion and Modernization of Rice Cultivation in Yagoua
SH	Sexual Harassment
SME	Small and Medium Enterprise
SND	National Development Strategy/*Stratégie Nationale de Développement*
SOP	Series of Projects
SP	Pumping Station
SRI	System of Rice Intensification
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance
TOR	Terms of Reference
TVET	technical and vocational training
UNHCR	United Nations High Commissioner for Refugees
VIVA Benue Project	Valorization of Investments in the Valley of Benue
WB/WBG	World Bank/World Bank Group
WoP/WP	Without Project/With Project
WUA	Water User Association
XAF	Central African CFA Franc

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Cameroon	Valorization of Investments in the Valley of the Logone	
Project ID	**Financing Instrument**	**Environmental Assessment Category**
P168772	Investment Project Financing	A-Full Assessment

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[✓] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[✓] Fragile State(s)
[✓] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[✓] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	[✓] Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
30-Nov-2021	30-Jun-2029

Bank/IFC Collaboration

No

Proposed Development Objective(s)

To improve irrigation and drainage services and agricultural production in the irrigated areas of the Logone Valley

Components

Component Name	Cost (US$, millions)

Improvement of Infrastructures and Water Management	153.40
Production and Support to Agriculture Services	27.10
Support to Sector Development and Implementation	37.40
Contingent Emergency Response	0.00

Organizations

Borrower:	Ministry of Economy, Planning and Regional Development (MINEPAT) Republic of Cameroon
Implementing Agency:	Société d'Expansion et Modernisation de la Riziculture de Yagoua (SEMRY) Ministry of Agriculture and Rural Development (MINADER)

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	217.40
Total Financing	217.40
of which IBRD/IDA	200.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	200.00
IDA Credit	200.00

Non-World Bank Group Financing

Counterpart Funding	17.40
Borrower/Recipient	7.00
Local Beneficiaries	10.40

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount

Cameroon	200.00	0.00	0.00	200.00
National PBA	200.00	0.00	0.00	200.00
Total	**200.00**	**0.00**	**0.00**	**200.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2022	2023	2024	2025	2026	2027	2028	2029
Annual	5.00	25.00	50.00	40.00	40.00	20.00	10.00	10.00
Cumulative	5.00	30.00	80.00	120.00	160.00	180.00	190.00	200.00

INSTITUTIONAL DATA

Practice Area (Lead)

Water

Contributing Practice Areas

Agriculture and Food, Environment, Natural Resources & the Blue Economy

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

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

10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04	✓	
Forests OP/BP 4.36	✓	
Pest Management OP 4.09	✓	
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10		✓
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37	✓	
Projects on International Waterways OP/BP 7.50	✓	
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

FA Schedule 2, Section I.B.1(b) The Recipient, through SEMRY, shall, by no later than two (2) months after the Effective Date prepare and adopt a Project procedures manual, containing detailed guidelines and procedures for administrative, financial management, and disbursement, and other fiduciary matters under the Project, in form and substance acceptable to the Association (the “Project Procedures Manual”).

Sections and Description

FA Schedule 2, Section I.B.2(b) Not later than November 30 of each year, furnish the draft annual work plan and

budget for the following year to the Association for its review, and promptly thereafter finalize the draft annual work plan and budget, taking into account the Association's comments thereon; provided, that for the first year of Project implementation, the Recipient shall furnish the draft annual work plan and budget by no later than one (1) month after the Effective Date.

Sections and Description

FA Schedule 2, Section I.B.2(c) Thereafter adopt and carry out such draft annual work plan and budget for the relevant year as shall have been agreed with the Association ("Annual Work Plan and Budget"), as such plan may be subsequently revised during such year with the prior written agreement of the Association.

Sections and Description

FA Schedule 2, Section I.A.1 The Recipient shall establish by no later than six (6) months after the Effective Date, and thereafter maintain at all times during the implementation of the Project, a Project Steering Committee, chaired by a representative of MINEPAT and vice-chaired by a representative of MINADER, and with terms of reference, composition, powers, functions, staffing, facilities and other resources satisfactory to the Association, to be responsible for inter alia, overseeing overall Project performance, approving Annual Work Plans and Budgets, providing strategic oversight and guidance, and supporting the mobilization of counterpart funds for the Project.

Sections and Description

FA Schedule 2, Section I.A.2 The Recipient shall establish by no later than six (6) months after the Effective Date, and thereafter maintain at all times during the implementation of the Project, a Regional Technical Monitoring Team chaired by the Governor of the Recipient's Far North Region, and with terms of reference, composition, powers, functions, staffing, facilities and other resources satisfactory to the Association, to be responsible for providing technical support to the Project Steering Committee.

Sections and Description

FA Schedule 2, Section I.A.3(a) The Recipient shall: (i) maintain SEMRY at all times during the implementation of the Project to be responsible for Project implementation; and (ii) establish, by no later than six month (6) months after the Effective Date, and thereafter maintain at all times during the implementation of the Project, a Project Implementation Unit ("PIU") within SEMRY, with terms of reference, composition, powers, functions, staffing, facilities and other resources satisfactory to the Association, to be responsible for the day to day implementation of the Project, including inter alia, environmental and social safeguards management, financial management, procurement, monitoring and evaluation, and reporting.

Sections and Description

FA Schedule 2, Section I.A.3(b) Without limiting the foregoing, the PIU shall include, inter alia, a Project Coordinator, a change management specialist, a financial management specialist, a procurement specialist, a monitoring and evaluation specialist, an environmental specialist, a social specialist, a gender specialist, communication specialist, an agri-business specialist, an agri-finance specialist, two accountants, and an internal auditor; all such staff to be appointed by no later than six (6) months after the Effective Date, and all with qualifications, experience, integrity and terms of reference acceptable to the Association.

Sections and Description

FA Schedule 2, Section I.A.3(d) Without limiting the foregoing, not later than two (2) months after the Effective

Date, the Recipient shall have acquired, installed, and customized a computerized accounting software, satisfactory to the Association.

Sections and Description

FA Schedule 2, Section I.A.4 The Recipient shall: (a) not later than four (4) months after Effective Date, establish and operationalize a special tender board for the Project in line with the Recipient's procurement regulations, to be responsible for overseeing the review of procurement documentation related to the Project; and (b) in the event of a need for tender reviews prior to the establishment of the said special tender board, cause the internal tender board of SEMRY to assume responsibility for such reviews until such time as the special tender board is established, in a manner acceptable to the Association.

Sections and Description

FA Schedule 2, Section I.D.1 The Recipient, through SEMRY, shall no later than the six (6) month from the effectiveness date prepare and adopt a management code for each of the irrigation schemes developed under Part 1.2 (i) of the Project, containing rules and procedures for, inter alia, (a) land tenure arrangements; (b) WUA rights and duties; (c) legal and financial administration and oversight arrangements for WUAs; (d) rehabilitation, training and transfer agreements; (e) dispute resolution mechanisms; and (f) such other arrangements and procedures as shall be required for the effective operation of WUAs, in form and substance acceptable to the Association (each, a "Irrigation Scheme Management Code").

Sections and Description

FA Schedule 2, Section I.K.1(a) by no later than twenty four (24) months after the Effective Date , in accordance with terms of reference acceptable to the Association: (i) prepare, or cause to be prepared, an Emergency Preparedness Plan for Maga Dam (the "EPP Plans"), compliant with Good International Industry Practice; (ii) furnish said plans to the Association for its review; (iii) adopt and implement, or cause to be implemented, said plans, taking into account the views of the Association on the matter, and all in a manner and in form and substance acceptable to the Association

Sections and Description

FA Schedule 2, Section I.I.1(a) No later than three (3) months after the Effective Date, or such other date as agreed by the Association, select and hire under terms of reference satisfactory to the Association and further detailed in the PIM, verification agents ("Verification Agents") to verify the data and other evidence supporting the achievement of one or more PBCs as set forth in the PIM and recommend corresponding payments to be made, as applicable.

Sections and Description

FA Schedule 2, Section I.K.1(b) by no later than twelve (12) months after the Effective Date , in accordance with terms of reference acceptable to the Association: (i) prepare, or cause to be prepared, an updated the Emergency Response Plan ("ERP Plans") for the 70 km of the Logone dike, compliant with Good International Industry Practice; (ii) furnish said plans to the Association for its review; (iii) adopt and implement, or cause to be implemented, said plans, taking into account the views of the Association on the matter, and all in a manner and in form and substance acceptable to the Association

Sections and Description

FA Schedule 2, Section II.B(a) carry out jointly with the Association, not later than forty-two (42) months (or such

other period as may be agreed with the Association) after the Effective Date, a midterm review to assess the status of Project implementation. Such review shall include an assessment of the following: (i) overall progress in implementation, including implementation of the SEMRY Reorganization Plan; (ii) results of monitoring and evaluation activities; (iii) progress on procurement and disbursement; (iv) implementation arrangements; and (v) the need to make any adjustments to the Project and reallocate funds to improve performance

Sections and Description
FA Schedule 2, Section I.A.3(c) Without limiting the foregoing, not later than four (4) months after the Effective Date, the Recipient shall have recruited and appointed an external auditor, all with qualifications, experience, integrity and terms of reference acceptable to the Association.

Conditions

Type	Financing source	Description
Effectiveness	IBRD/IDA	FA, Article V 5.0.1(a) The Project Agreement has been duly executed by the Association and SEMRY, authorized by SEMRY, and is legally binding upon SEMRY in accordance with its terms.
Type	Financing source	Description
Effectiveness	IBRD/IDA	FA, Article V 5.0.1(b) The Subsidiary Agreement has been duly executed, authorized or ratified by the Recipient and SEMRY, and is legally binding upon the Recipient and SEMRY in accordance with its terms.
Type	Financing source	Description
Disbursement	IBRD/IDA	FA, Schedule 2, Section III.B1(a) No withdrawal shall be made under Category (2) until the Recipient has adopted the Irrigation Scheme Management Code, in form and substance acceptable to the Association, and in accordance with the provisions of Section I.D.1 of Schedule 2 to this Agreement.
Type	Financing source	Description
Disbursement	IBRD/IDA	FA, Schedule 2, Section III.B1(b) No withdrawal shall be made under Category (3) for e-Vouchers, until the Recipient has adopted the e-Voucher Manual, in form and substance acceptable to the Association, and in accordance with the provisions of Section I.E. of Schedule 2 to this Agreement.
Type	Financing source	Description
Disbursement	IBRD/IDA	FA, Schedule 2, Section III.B1(c) No withdrawal shall be made under Category (4) for Matching Grants, until the Recipient has adopted the Matching Grants Manual, in form and substance acceptable to the Association, and in accordance with the provisions of Section I.F of Schedule 2 to this Agreement.

Type	Financing source	Description
Disbursement	IBRD/IDA	FA, Schedule 2, Section III.B1(d) No withdrawal shall be made under Category (5) for sub-grant, until the Recipient has adopted the Sub-Grants Manual, in form and substance acceptable to the Association, and in accordance with the provisions of Section I.G of Schedule 2 to this Agreement.
Type	Financing source	Description
Disbursement	IBRD/IDA	FA, Schedule 2, Section III.B1(e) Each withdrawal under Category (6) linked to PBCs shall be made only after the Association has received: (i) evidence acceptable to the Association in its form and content and following the requirements set forth in the Verification Protocol and the Disbursement and Financial Information Letter, confirming the achievement of the respective PBCs; and (ii) evidence, in form and content acceptable to the Association confirming that expenditure under the relevant Eligible Expenditures for the PBCs in an amount equal to at least the amount to be withdrawn under each Category in respect of each PBC, have been incurred, and that said expenditures have not been presented before to the Bank as satisfactory evidence for withdrawals under this Agreement.
Type	Financing source	Description
Disbursement	IBRD/IDA	FA, Schedule 2, Section III.B2(b) If any of the PBCs referred to in Schedule 4 to this Agreement has not been achieved, the Association may, by notice to the Recipient: (a) reallocate all or a portion of the proceeds of the Financing then allocated to said PBC to any other PBC; and/or (b) cancel all or a portion of the proceeds of the Financing then allocated to said PBC.
Type	Financing source	Description
Disbursement	IBRD/IDA	FA, Schedule 2, Section III.B2(a) The Recipient may request withdrawals of the Financing when the relevant expenditures under the PBCs have been incurred, but prior to the PBCs having been met, provided that the Recipient shall: (i) achieve such PBCs no later than the Closing Date; and (ii) submit to the Association evidence satisfactory to the Association of such PBCs having been met no later than the Disbursement Deadline Date; provided however, that if by the Disbursement Deadline Date, the Recipient has failed to provide the Bank evidence satisfactory to the Bank that one or more PBCs have been fully achieved, the Recipient shall, upon notice from the Association, promptly refund to the Association the Withdrawn Financing Balance related those expenditures under the EEPs under

		Category (6). Except as the Association may otherwise determine, the Association shall cancel all amounts refunded pursuant to this Section.

I. STRATEGIC CONTEXT

A. Country Context

1. **Cameroon is a lower-middle-income country with a population of over 26 million, about half of the total population of the Central African Economic and Monetary Community (CEMAC).** The country is the largest economy of the CEMAC region, producing 45 percent of the community's nominal gross domestic product (GDP) in 2020, with potential for rapid economic development in areas such as agri-business and services necessary for its fast-developing urban economies. Cameroon also enjoys substantial mineral wealth, including oil, natural gas, gold, iron, manganese and uranium. Benefitting from a coastal position, Cameroon is at once the gateway to the economy of Central Africa and a trade route between the economies of Western and Central Africa. The country benefits from its location in the Congo Basin, which provides an exceptional ecological diversity.

2. **Cameroon has been grappling with attacks by Boko Haram in the Far North and a secessionist insurgency in the Anglophone regions**. The North-West South-West crisis is a conflict between non-state armed groups and the Cameroonian army, resulting in the substantial displacement of populations. Since September 2017, more than 600,000 people have been displaced internally and close to 400 civilians and over 200 military, gendarmerie, and police officers have lost their lives.[1] The Central African Republic (CAR) refugee crisis causes an influx of CAR refugees in the eastern façade of Cameroon and in the Eastern, Adamawa, and Northern Regions. The Nigerian refugee crisis is due to Boko-Haram attacks, mainly in Nigeria but affecting also the Far North of Cameroon with numerous displacements of populations. Cameroon continues to host some 1.96 million people of concern to the UN Refugee Agency (UNHCR), including some 430,000 Nigerian refugees in the Far North and Central Africans in the Eastern border regions, with access to basic services limited, such as civil documentation, particularly for displaced populations. The country also has over 1 million IDPs concentrated in the North-West and South-West and the Far North regions where conflict and instability are likely to persist in 2021, as well as 484,036 IDPs returnees in the Far North. Gabon, also covered by UNHCR's operation in Cameroon, hosts 484 refugees and 84 asylum-seekers in a context of prolonged displacement.[2]

3. **Cameroon's economic growth decelerated in 2020 impacted by the COVID-19 pandemic, but has picked up since the beginning of 2021.** Real GDP growth decelerated to 0.5 percent in 2020, from 3.7 percent in 2019, due to lower activity in the primary and tertiary sectors on the supply side. In the tertiary sector, the lockdown measures related to the pandemic have significantly affected non-factor services, including catering and tourism. On the other hand, the industrial sector showed resilience amidst the crisis and was the main growth driver in 2020. The expansion of the construction, mining, and agri-processing industries has supported the performance of the secondary sector. Higher-than-expected oil and value-added tax revenues, coupled with a reprioritization of public spending, helped contain the fiscal deficit at 3.8 percent of GDP in 2020 (compared to 3.3 percent of GDP in 2019). Economic activity picked up in the third quarter of 2020 and has been sustained since then. While considerable uncertainty exists in the economic outlook, the economy is projected to rebound by 3.8 percent on average per year in 2021-2023, with the fiscal deficit narrowing to 2.8 percent of GDP by 2023.The latest World Bank-IMF Debt Sustainability Analysis (DSA) of July 2021 concluded that Cameroon remains at high risk of debt distress.

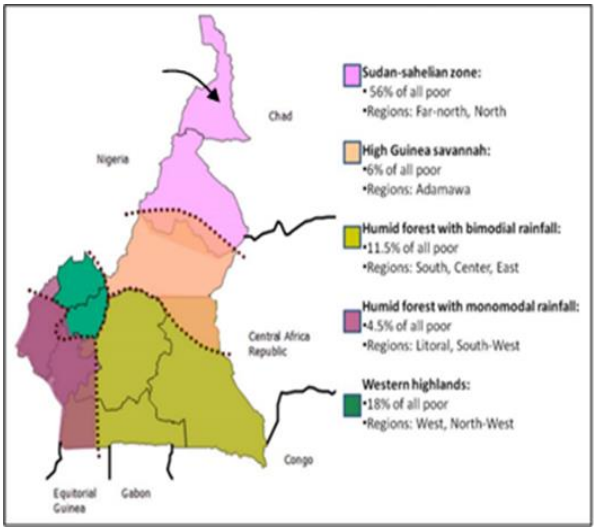
4. **The government growth strategy (the National Development Strategy (*Stratégie Nationale de Développement/*SND30) identifies inadequate infrastructure and an unfavorable business environment as the main factors impeding economic growth and employment creation**. The agriculture sector, which represented

[1] *https://www.worldbank.org/en/country/cameroon/overview.*
[2] Source: UN Refugee Agency, 2021.

about 43.5 percent of jobs in Cameroon in 2019, is regarded as a potential engine for economic growth and job creation if it can be transformed from traditional farming to diversified and commercially viable farming. The SND30 recognizes the need for agricultural diversification, increased productivity, and large-scale public investment projects in the sector. Currently, notwithstanding Cameroon's abundance of natural assets and tremendous climatic and land potential, the primary sector's contribution to GDP growth has been limited at about 0.4 percentage points per annum, and is dominated by food crops grown by smallholder farmers.

5. **The northern regions exhibit by far the highest poverty rates in Cameroon, with over 70 percent of the poor living in the North and Far North regions.** The COVID-19 pandemic has reversed part of the progress on the poverty reduction front, with the number of poor estimated to have increased by 400,000 people, with important regional disparities. In the two northern regions, poverty and inequality levels have steadily increased relative to the rest of the country where poverty rates remained flat over 2014-2019. These northern regions are subject to multiple poverty traps, as documented extensively in the World Bank's Systematic Country Diagnostic (SCD, Report 103098-CM),[3] including low agriculture productivity, increasing vulnerability to climate change, poor infrastructure, and limited access to health and education services. Malnutrition is rampant with three out of four food insecure people located in the North and Far North regions. Poverty incidence is correlated with agro-ecological zones (see Figure 1).

Figure 1: Cameroon: Incidence of Poverty by Agro-ecological Zone[4]



6. **Gender inequality is significant with socio-cultural norms, lower ownership of assets, and other factors affecting the productivity gap between female and male farmers**.[5] The agriculture sector accounts for a larger share of women's work than men's (48 percent versus 39 percent in 2019). Women are however more likely than men to be concentrated in the lower ends of value chains, in unpaid or less remunerative work. Even though rural women supply about 90 percent of the food needed for the subsistence of the population,[6] they tend to possess fewer agricultural assets such as farm tools and equipment and are less likely than men to be able to rent government land.[7] Traditional gender role conceptions define men as the providers and decision-makers thus women have little voice in community or household decision-making about the use of land or water resources. Women typically have responsibility for food crops (e.g. maize, casava, rice, plantains, groundnuts) rather than cash crops (e.g. coffee, cacao). Similarly, women's limited access to credit, explained partly by lower ownership of land and other assets, and limited education, restricts their economic opportunities and confines them to insecure livelihoods. Surveys from Cameroon show that women only own 31 percent of

[3] Republic of Cameroon: Priorities for Ending Poverty and Boosting Shared Prosperity, June 20, 2016.
[4] Source: CPF, 2017
[5]The literature shows that gender differences in agricultural productivity disappear when female and male farmers have equal access to productive inputs (World Development Report 2012).
[6] Food and Agriculture Organization (FAO) Cameroon Fact Sheet- *http://www.fao.org/3/V9319e/v9319e01.htm#P13_1026*
[7] In the Far-North only 18 percent of land ownership registrations were given to women in 2013 - FAO Gender Profile 2019- *http://www.fao.org/3/ca1197fr/CA1197FR.pdf*

businesses and are more likely than men to report access to finance as a major constraint to business activities.[8] Only 16.8 percent of women have access to credit. Only 1.6 percent of women have a land title in their name, and 51.5 percent of women live below the poverty line compared with 39 percent for the overall population.[9] About 23 percent of women are self-employed in the informal sector where access to credit is one of the top constraints facing businesses. Nationwide, female-headed households are more vulnerable to food insecurity (18 percent versus 15 percent of male-headed households) and especially the single-headed households in rural areas (27 percent versus 22 percent of those with two members or more).

7. **Social and economic gaps between regions are likely to worsen as a result of climate change.** The Sudano-Sahelian area (North and Extreme North) is the most environmentally fragile zone in Cameroon. It is particularly exposed to drought and increased temperatures with serious implications for the majority of inhabitants who depend on agriculture and livestock for their livelihoods. The Climate and Disaster Risk Screening results conclude that the project area is at high risk of extreme temperatures, drought, and extreme precipitation and flooding. Similarly, the Think Hazard profile for the Far North region[10] also notes expected wildfire concerns due to climate change in the region, in addition to the aforementioned climate risks. Regional climate change projections suggest that an overall decrease in the quantity of water available could exacerbate water shortages in many rural areas of northern Cameroon. The quality of water will also be affected. An increase in temperatures and greater dryness are likely to result in net capillary movement and the salinization of both water and soils. Rice, one of Cameroon's main food imports, grown in the north by both traditional and modern methods, will particularly be affected, but also other food crops such as millet, sorghum, and maize. These climate risks are particularly acute in the Far North, which is where the project area is located. Falling water flows in the Far North has also been linked to increased sedimentation.[11]

8. **Like many other countries, Cameroon has been severely affected by the COVID-19 pandemic** with 99,530 confirmed cases and 1,593 deaths as of October 13, 2021. The first case was identified in March 2020, and since then, COVID-19 cases have spread quickly across the 10 regions of the country. The unprecedented pandemic is having repercussions in all socio-economic and financial aspects of the country. The COVID-19 pandemic is also having significant impacts on household welfare. Essential health services have been affected across the board. Prolonged school closures and insufficient infrastructure for delivering remote instruction are likely to have an adverse impact on student learning, especially for disadvantaged segments of the population. In May 2020, The GoC adopted a comprehensive socio-economic response plan to mitigate the impact of the COVID-19 pandemic and in March 2021, the Government developed a national immunization deployment plan, for a total cost of US$137 million. The medium-term outlook is challenging as the COVID-19 pandemic continues to impact the global and regional economic environments.

B. Sectoral and Institutional Context

9. **Agriculture remains the backbone of Cameroon's economy, employing 70 percent of its workforce, while providing 42 percent of its GDP and 30 percent of its export revenue**. Food crops contribute 64 percent to agricultural GDP, followed by livestock (13 percent), forestry (9 percent), industrial and export crops (8

[8] World Bank enterprise survey data for Cameroon (*https://www.enterprisesurveys.org*)
[9] CPF for Cameron FY2017-FY2021; Brun, Delphine 2019. Data on Gender in Cameroon. Inter-Agency Gender Cap. *https://reliefweb.int/sites/reliefweb.int/files/resources/data_on_gender_equality_in_cameroon-hno_2020-17_oct_19.pdf*
[10] Global Facility for Disaster Reduction and Recovery, Far North - "Extrême – Nord," Think Hazard, *http://thinkhazard.org/en/report/818-cameroon-extreme-nord*.
[11] Lienou, Gaston et al, "Suspended sediment transport by rivers in the different climatic zones of Cameroon (Central Africa)," *Erosion and Sediment Yields in the Changing Environment*.

percent), and fisheries (6 percent). About 54 percent of all households have at least one member who owns a crop field of about 2.4 hectares (ha) as documented in the SND.

10. **Yet, a series of constraints have led Cameroon's agriculture sector to be characterized by low productivity and low-production subsistence farming, especially in the North and Far North.** Declining soil fertility, limited use of fertilizer, low adoption of high yielding varieties and improved farming techniques are among the core reasons for constrained yields. In this context, the GoC's agriculture strategy is expressed in three key national strategy and planning documents: (i) «Vision 2035» envisages agricultural growth beyond 5 percent by 2020 per year; the SND foresees significant productivity increases in agriculture and livestock farming; (ii) the 2009 Rural Development Strategy and its 2020 update *("Document de Stratégie de Développement du Secteur Rural," DSDSR)* commits to a modernization of rural infrastructure, agricultural production, and sustainable management of natural resources; and (iii) Cameroon has engaged in the African Union's Comprehensive Africa Agriculture Development Program (CAADP) and, with CAADP support, Cameroon updated its 2020-2030 National Agriculture Investment Program (*Plan National d'Investissement Agricole*; PNIA).

11. **Irrigation is fundamental to ensuring regional food security in the Far North**. The Sudano-Sahelian agro-ecological zone is the most environmentally fragile and vulnerable to climate shocks of the five zones in Cameroon. The Far North region has an average annual precipitation of 600 mm, June to September, and the potential evapotranspiration (EPT) is 2,400 mm per year (precipitation/EPT<0.33). This permanent EPT deficit translates into water stress and reduced photosynthesis and therefore lower yields. This high level of EPT is reflected in higher climate risks. In the absence of other natural resources, the Far North is not surprisingly the poorest region in the country. Poverty increased from 56 percent in 2001 to 76 percent 2014, indicating both the severity and a worsening trend of poverty.

12. **SEMRY is a public agricultural support and irrigation and drainage agency** established in 1971 with the construction of the SEMRY I scheme at Yagoua (5,300 ha: 1972-1977) and SEMRY II scheme at Maga (6,200 ha: 1978-1986). The construction of the 27 km long earthen Maga dam on the upper part of the Waza-Logone floodplain started in 1974 to provide water for the SEMRY II scheme (also called Maga scheme) and for fish farming. The Maga dam remains the largest piece of infrastructure in the Logone-Chari River system, with a maximum capacity of 620 million m^3. When SEMRY was established in 1971, the operation and maintenance of the hydraulic infrastructure of the Logone dike and the Maga dam was its core mandate. During the 1990s, the mandate to operate and maintain the large infrastructure (flood dike and dams) was transferred to the Government, under the *Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire (MINEPAT*; Ministry of Economy, Planning, and Regional Development). SEMRY has since primarily focused on the operation of the irrigation system, along with agricultural support and land preparation services. MINEPAT retains the mandate to operate and maintain the major infrastructure (dike along Logone and Maga dam). However, MINEPAT is not an implementing institution. Therefore, each year, MINEPAT is to evaluate the extent/scope of the required maintenance works, and then ask SEMRY to execute the necessary works with the provision of a budget to do so.

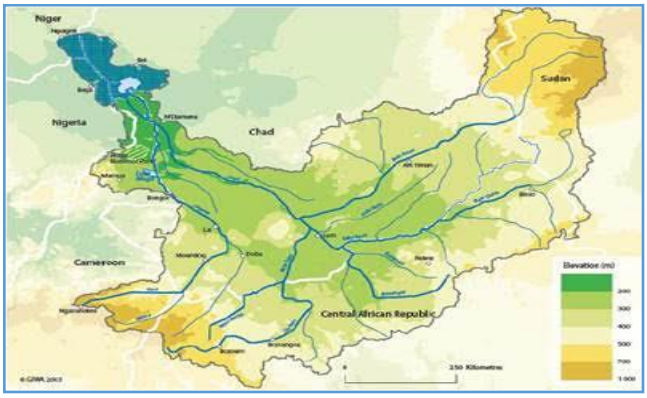
13. **SEMRY presently undertakes three main functions: (i) Irrigation, Operations, Management, and Maintenance (OMM) at all levels of the schemes; (ii) provision of land-preparation services; and (iii) post-harvest processing and marketing of rice** (milling, bagging, transport, and limited retailing). The budget for 2018 was approximately US$6 million. SEMRY has a substantial staff contingent of 431 personnel, of whom more than 50 percent are support personnel, such as security guards and watchmen. It also has machinery workshops and stores, new and old heavy construction machinery, and a fleet of trucks, among other assets. Many attempts have been made to strengthen and enable SEMRY to fulfill its role adequately, but with little success. Key issues remaining to be addressed include the continued bureaucratic character of the organization and a multitude of

roles accumulated. There are shortages of key managerial staff, limited technical skills, inefficiencies, weaknesses in financial audits, administration systems, and accounting transparency, and a relatively high average age in the workforce. There also remains a severe lack of mechanized agriculture in the area served by SEMRY, and a near-complete absence of explicit rules for land access and control and for irrigation water management.

14. **SEMRY's organization structure needs a major transformation to reflect the new roles that SEMRY will be called on to play with the Transformation Plan that has been elaborated (see Annex 6).** SEMRY's role will be re-focused on: (i) maintenance of main infrastructure (Maga dam, Logone dike, access roads, Maga reservoir, and main drains); (ii) support to farmers; and (iii) general development of the area. This transformation will involve the gradual transfer of some of its current responsibilities, namely: rice milling (to one or more private concessions), plowing services (to private providers), management of the irrigation network (to a Water User Associations (WUAs)), and so on. A new organogram has been elaborated, a social plan has been prepared, and an action plan for the transformation into the new SEMRY has been technically agreed. An extraordinary meeting took place on October 12, 2021 to discuss the new Statue of SEMRY, the Scheme Management Code and the Transformational Plan of SEMRY before sending the documents to *Ministère de l'Agriculture et du Développement Rural* (Ministry of Agriculture and Rural Development, MINADER) for validation.

15. **The Lake Chad basin, centered on Lake Chad, spans eight countries and covers around 2.4 million km². The Chari and Logone rivers are the backbones of the Lake Chad Basin with multiple implications upstream and downstream**.[12] The Chari and Logone Rivers contribute about 95 percent[13] (38.5 km³) of the total inflow (40.5 km³) into Lake Chad. In recent history, the area of Lake Chad has varied between 3,000 and 25,000 km², with a variation in its level of over 8 meters and a variation in volume of between 20 and 100 km³. The present water withdrawal in the Logone-Chari of 0.5 km³ (corresponding to 0.2 km³ in Cameroon and 0.3 km³ in Chad) represents 1.3 percent of the average annual water resource (38.5 km³); therefore, most of the variations in the Lake Chad basin are related to the inter-annual variation in precipitation in these two countries. Furthermore, with an average depth of only three meters, the average intra-annual variation of 1 meter translates into large variations in surface area between summer and winter months (e.g. some 6,000 km² for 278 m above sea level vs. almost 12,000 km² for 279 m).

Figure 2: The Chari-Logone River System



16. **The trans-boundary water resources agreements are being developed and enforced by the Lake Chad Basin Commission (*Commission du Bassin du lac Tchad,* LCBC) in collaboration with the Member States**. The LCBC is an institution that needs to be supported and reinforced to fulfill its mandate.[14] As an example, the Flood

[12] Lake Chad borders Cameroon, Chad, Niger and Nigeria. The region has an ethnical diverse population, and more than 120 languages are spoken by the people living around the lake. The Sahelian zone suffers from endemic poverty, high population growth, poor governance and weak presence of states. At the regional level, the LCBC has been one of the main platforms for regional cooperation, with its mission to manage the basin's cross-border resources.

[13] FAO, AQUASTAT.

[14] LCBC was created during the 1970s. Its mandate is to sustainably and equitably manage the shared water resources of the Lake Chad Basin, to preserve the ecosystems of the Conventional Basin, and to promote regional integration, peace, and security across the Basin. The Lake Chad Basin Charter, approved in 2012, established (i) Limit total water withdrawal for the Chari-Logone sub-basin to 2 km3/year (presently, water withdrawal is 0.5 km³/year); (ii) in the dry season, preserve the ecosystem and guarantee the availability of the

Emergency Project *(Projet d'Urgence de Lutte Contre les Inondations; PULCI, P143940)*, World Bank-funded, had signed a Memorandum of Understanding (MoU) with the LCBC in order to support water resources monitoring and information-sharing between Cameroon and Chad. Increasing the number of gauging stations in the Chari and Logone sub-basin to measure/ensure the minimal water discharges is essential, and information sharing is fundamental for improving livelihoods in the region.

C. Relevance to Higher Level Objectives

17. **The project objective is fully consistent with the Cameroon Country Partnership Framework (CPF)[15] for 2017-2021 and the upcoming CPF to be delivered in FY 2023** to support poverty reduction and shared prosperity in Cameroon, which identifies constraints to achieving the World Bank's Twin Goals of eliminating poverty and fostering shared prosperity in a socially and environmentally sustainable way. The CPF has concluded that, in the short-term, the largest opportunity for increasing shared prosperity and reducing acute poverty in Cameroon is *an improvement in rural livelihoods, largely based on agriculture*, and it includes empowerment of women farmers to increase their productivity. The project would have positive impacts in terms of environmental protection and reduced greenhouse emissions by enhancing irrigation efficiency, reducing pumping-energy requirements, and promoting higher value crops which reduce water consumption. The project will also build resilience against climate change-induced droughts, floods, and sedimentation. Further, the Project is also fully consistent with Bank's Next Generation Africa Business Plan and has strong linkages to the Nationally Determined Contribution (NDC) for Cameroon—which has given agriculture a prominent role. The Project is also aligned with Cameroon's response to COVID-19 impacts in the agricultural sector as it supports subsidies for farmers and private sector-linked production which are short- and medium-term priorities of the response plan.

18. **The proposed project will contribute to Maximize Financing for Development (MFD)** by promoting the role of the private sector in key areas and optimizing the use of scarce public resources. Indeed, Cameroon's rice subsector has strong potential for growth if the value chain, and especially local processing, can improve. This project will help to promote private sector participation (PSP) in key areas where it has a clear value added and where SEMRY operated so far with very poor results. The project envisages to build upon existing initiatives to expand support to the private sector by increasing demand (e-vouchers) and increasing supply (Matching Grants). This will be closely coordinated with the activities promoted under the VIVA Benue Project (P166072). The areas where PSP is expected is broad and all along the value chain: (i) in preparation of land, which requires perfect land-levelling and a high level of mechanization that can only be offered by private operators; (ii) in milling, where several small operators already stand ready to operate if SEMRY would recognize their legitimacy; and also (iii) all along the chain of commercialization (transformation, packaging, transport, commercialization) to enable Cameroons population to have access to this local produce at an affordable price.

19. **Linkages with other existing projects.** The proposed project builds on previous work and results of the Flood Emergency Project (PULCI, P143940), building upon the relationship with SEMRY and the uncompleted infrastructure works. The project will also coordinate closely with the Agriculture Investment and Market Development Project (*Projet d'Investissement et de Développement des Marchés Agricoles,* PIDMA, P143417) and the Cameroon Transport Sector Development Project (P150999). PULCI, following previous work of the Cameroon Agricultural Competitiveness Project (*Programme d'Appui à la Compétitivité Agricole,* PACA,

resources for the people living along the river with a minimum water discharge of 22 m^3/s in Bongor/Yagoua (in Cameroon); and (iii) during the wet season, sustain the function of floods in the wetlands (e.g. 1,500 m^3/s downstream of Bongor/Yagoua). There are currently not enough gauging stations in the Chari and Logone basin to measure/ensure these minimal water discharges.

[15] Report No. 107896-CM dated February 28, 2017.

P112635), is working to improve irrigation and flood protection in a sustainable manner for the riverine population of the Far-North. Furthermore, the World Bank approved a similar project in the North region called VIVA of the Benue Project (P166072), where lessons learnt and economies of scale will be derived to improve the conditions of the poor farmers in the North and Far-North. In addition, the project will be implemented in coordination with the Regional Lake Chad Recovery and Development Project (P161706). That project focuses on knowledge sharing, improving connectivity, and supporting livelihoods in the Chad basin and the Logone-Chari sub-basin. Strategies for transboundary water resources monitoring in support of integrated management and flood-response coordination will be explored.

20. **The proposed project focuses on adoption of climate-smart practices, reduction in irrigation energy use, reducing emissions from deforestation and forest degradation, and agricultural management activities that improve carbon pools.** The project is expected to result in net emission reductions due to implementing improved System of Rice Intensification (SRI) techniques, as in Mali and Madagascar, for irrigated rice crops and improving access to irrigation for annual crops. In addition, the use of zero-emissions, zero-energy gravity-based systems for the SEMRY-II system, and energy efficiency gains from pumping improvements in the SEMRY-I system are expected to also contribute to net mitigation. The project is estimated to result in net emissions of -411,230 tCO2-eq over the economic lifetime of the project, with annual net emissions of -20,562 tCO2-eq. Implementing SRI techniques will yield net emissions of -534,136 tCO2-eq due to reductions in methane emissions from rice fields, while improved access to irrigation for annual crops are expected to result in net emissions of -23,256 tCO_2-eq. These emissions reductions are attributable to the infrastructure financed under Subcomponents 1.1 and 1.2, the land leveling and land preparation activities, and the irrigation and drainage management activities financed under Subcomponent 1.3. Activities under Component 2 also help incentivize farmers to use water more efficiently, thus limiting methane emissions from rice fields, while the training program under Subcomponent 3.2 will train farmers how to implement climate-smart agriculture (CSA) approaches. The only two sources of net emissions increases are from fertilizer use, 143,692 tCO_2-eq, and tilapia aquaculture at 2,470 tCO_2-eq. The gross emissions across the economic lifetime of the project are estimated at 1,381,132 tCO_2-eq. In addition, the activities under Component 1 to improve the operation of the Maga Dam, the introduction of monitoring systems, and investments in downstream irrigation and drainage infrastructure will improve beneficiaries' resilience to climate change-exacerbated droughts and sedimentation, while also improving the Borrower's ability to monitor and react to climate change-induced floods. The activities under Component 2 will give farmers the incentives and ability to use water resources more efficiently during climate change-induced droughts. The technical capacity and institutional strengthening activities under Component 3 will increase the Borrower's ability to plan for the effects of climate change-related shocks to water availability in the project area, as well to plan for flood management.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

21. The Project Development Objective (PDO) is to improve irrigation and drainage services and agricultural production in the irrigated areas of the Logone Valley.

PDO Level Indicators

22. The key project indicators will measure:

a. Cropping intensity of developed perimeters (hectares harvested per year/hectares equipped for irrigation); from 0.8 to 1.8;

b. Area provided with improved irrigation and drainage services (ha); (core indicator);
c. Area prepared (harrowed/ploughed) by the farmers or a private provider (from 700 to 17,500 ha/year);[16]
d. Agricultural production (rice) in the area (from 50,000 tons/year to 115,000 tons/year); and
e. Direct beneficiaries of irrigation and drainage investments (from 0 to 30,000).

The indicators under (a) and (b) above relate to improve irrigation and drainage services; (c) and (d) are related to improve agricultural production.

B. Project Components

23. The project is designed to achieve the PDO through: (i) support to regional water security and governance of the water resources, including water infrastructure safety and operations, rehabilitation of irrigation and drainage infrastructure, and support to water users organizations; (ii) promotion of agriculture production and agribusiness, including precision land leveling (PLL), land preparation, mechanized paddy cultivation operations, access to inputs and technical assistance (TA), and support to small and medium enterprises (SMEs); and (iii) the implementation of a transformational plan of SEMRY and strengthening of public services. The Government has ratified its commitment to these principles through a Development Policy Letter (Annex 8).

24. Institutional support at the national level will also be provided in the context of the preparation of the draft National Water Code. This step is necessary for the creation of an appropriate legal framework for sustainable WUAs in the long-term in Cameroon (see Annex 7).

25. The project would also include flood-preparedness and transboundary cooperation in the Logone Valley. The project has been designed to build resilience against several of the climate risks facing the Far North, especially drought, extreme precipitation, and flooding.

Component 1: Improvement of Infrastructure and Water Management (US$153.4 million equivalent from IDA)

26. The primary goal of this component is to contribute to more sustainable and equitable regional water resources management in addition to an improved irrigation development in the Logone valley, building upon the work done within the recently closed emergency PULCI Project. This will be achieved by combining infrastructure, institutional, and informational activities so that SEMRY becomes a modern water institution. The component is organized in three subcomponents: (i) upstream water resources monitoring and coordination as well as operation and safety of the main hydraulic infrastructure; (ii) rehabilitation of the eight irrigation and drainage schemes; and (iii) irrigation and drainage management. First, a water resources unit and WUA oversight unit with full Global Information System (GIS) and technical capabilities will be established within SEMRY which will be used for land tenure rights management as well. Second, the full rehabilitation of the irrigation schemes will need to be undertaken before the transfer of their operation and maintenance to the WUAs. Third, PLL of all 12,210 hectares will be carried out to enhance water use efficiency and enable private sector-led land preparation and mechanized paddy cultivation operations. It is also expected that extensive training of the WUAs will be needed, and transfer agreements between SEMRY and the WUAs will be put in place. This component will finance studies, consulting services, works, equipment, and training.

27. **Subcomponent 1.1: Security and Operation of Main Hydraulic Infrastructures** (US$1.5 million from IDA). The PULCI Project helped to rehabilitate the Maga dam and to a certain extent the Logone dike downstream from Pouss, as well as with installing a few hydromet stations and elaborating an early warning system for 70 km along the Logone river. This subcomponent will improve the operations of the main hydraulic infrastructures in

[16] 80 percent of developed areas (12,210 ha) with a cultural intensity of 1.8.

the Logone valley and will realize hydraulic and hydrological studies for elaborating the emergency preparedness plan (EPP) of the Maga dam, update the emergency response plan (ERP) of the area elaborated within PULCI, provide hydrometric equipment to monitor flow of 25 m^3/s in Bongor and 12 m^3/s in Logone-Ghana for ensuring the agreements of the Water Charter; expand the present early warning systems from 70 km to 300 km along the downstream part of the Logone river; support national and international coordination between the Recipient and Lake Chad Basin Commission (LCBC); establish updated operational rules for Maga Lake; and, train the SEMRY unit responsible for water resources.

28. **Subcomponent 1.2: Irrigation and Drainage Infrastructure, and Resettlement Action Plans (RAP) and Environmental and Social Impact Assessment (ESIA) activities** (US$146.5 million from IDA). The pumped Yagoua area (SEMRY I) consists of four major irrigation schemes totaling around 5,726 ha. The gravity-fed Maga area (SEMRY II) consists of four major irrigation schemes totaling around 6,484 ha that are supplied by water from the Maga dam. This subcomponent aims at completing the rehabilitation of the irrigation and drainage infrastructures for the irrigation perimeters (Yagoua and Maga) for a total of 12,210 ha including PLL. These activities have the potential to realize energy efficiency gains from improved pumping and locking with the continued use of zero-emissions gravity-fed systems, particularly in Maga. The emergency project (PULCI) targeted rehabilitation of various elements with a priority on the bulk-supply system, including the Maga dam and Logone dike, and some irrigation infrastructure (approximately 15 percent of the irrigation area). The responsibilities for operation and maintenance of the irrigation and drainage infrastructure will be transferred to the WUAs in two stages: (i) co-management stage from the validation of the Scheme Management Code - disbursement condition for this subcomponent- until finalization of works rehabilitation and (ii) full transfer from the signature of the Transfer Agreement (upon finalization of the works rehabilitation) onwards.

29. The project design adopts a socio-technical modernization approach in conjunction with Subcomponent 1.3. This involves not only rehabilitation, but where necessary would introduce appropriate infrastructure to enable and strengthen the practical aspects of irrigation and drainage management under the new institutional arrangements. This requires the establishment of suitably sized, financially viable, and autonomous (technical) hydraulic units for the self-governing WUAs to be established under Subcomponent 1.3. Hydraulic structures will also be needed to enable practical and enforceable distribution modalities within the boundary of the WUA area of operation. In addition, the rehabilitation will include a review of the intakes from the Logone River, particularly pumping station number 4 and Djafga. The large sedimentation rates in the Logone river, and the significant silting up of the left bank near the pumping station 4 (SP4) outlet prevent sufficient access to water for the station SP4 each year, despite the clearing work undertaken at the start of each dry season (DS). Thus, the pumping station SP4 will be properly relocated. Funds would be provided for infrastructure rehabilitation and supervision.

30. The activities associated with the environmental and social management plan (ESMP) of this subcomponent, such as the re-vegetation of the riverbanks, will be financed as services by the project. This subcomponent will also support the implementation of the RAP and ESIA activities. The contractor of works, as part of his duties, will be in charge of their timely implementation.

31. The rehabilitation includes PLL of the 12,210 hectares of irrigation schemes (within the rehabilitation contract) because currently the fields are highly unlevelled which, *inter alia*, results in: (i) huge wastage of precious and scarcely available irrigation water; (ii) inefficiency of other agricultural inputs, i.e. seed, fertilizers, herbicides, labor, machinery, etc.; and (iii) dismally low agricultural productivity. Further, the unlevelled fields pose enormous restrictions for carrying out land preparation operations with normal agricultural tractors and small machinery/implements, as it is nearly impossible to uniformly apply pre-ploughing soil-softening irrigation across the irrigation perimeter to enable use of such machines/equipment.

32. **Subcomponent 1.3: Irrigation and Drainage Management** (US$5.4 million from IDA)**.** This subcomponent will include TA and equipment for the WUAs. It will build upon the process of irrigation management that started within the PULCI project: eight WUAs are already in place (one for every irrigation scheme), eight meeting rooms have been built and equipped for the WUAs as well as eight warehouses for the Cooperatives. A Scheme Management Code has been elaborated, and needs approval by MINADER before works start, that sets out the basic rules concerning: (i) irrigation aspects of the land tenure arrangements and usufruct rights of women farmers; (ii) WUA rights and duties; (iii) WUA legal/financial oversight; (iv) infrastructure rehabilitation and transfer agreements; (v) rights and duties of the parties; (vi) a dispute resolution mechanism; (vii) WUA membership criteria (inclusion of women based on usufruct); and (viii) targets for female leadership in WUAs. The scheme management code equally includes actions to promote women's representation in WUAs, particularly in decision-making positions. These actions include awareness raising on the importance and benefits of women's participation/leadership in WUAs and training of female farmers in technical and leadership skills to facilitate their participation in WUA technical and leadership functions. The transfer process is planned in two stages: (i) co-management from the signature of the Scheme Management Code until finalization of works rehabilitation and (ii) full transfer from the signature of the Transfer Agreement (upon finalization of the works rehabilitation) onwards.

33. This subcomponent will provide TA and training to SEMRY and WUAs, including *inter alia*: (i) the development and update by SEMRY of the list of land users; (ii) preparation and implementation of transfer agreements between SEMRY and WUAs; (iii) the organization of the distribution of fees (irrigation service fee to be kept by the WUA, fee for technical support for SEMRY, and land preparation services by the private sector); (iv) training in good practices of irrigation scheduling with targets and outreach measures to ensure participation of female farmers; (v) strengthening the capacities of each WUA (including a secretary/accountant and a water operator technician); (vi) the organization of awareness campaigns for community members on health (e.g. water-borne diseases) on benefits of equal access to and education for boys and girls and on economic and food security gains from increasing women farmer's access to land, water, extension, tools and inputs and education with targets and outreach measures to ensure participation of women farmers; (vii) support for the implementation and respect of the Scheme Management Code and the rules of procedure; and (viii) providing equipment to WUAs and their facilities. A WUA manual will be elaborated for ensuring the support to each of the eight WUAs. In addition, the TA will also work with the various ministries involved in the elaboration and updated of an appropriate legal framework for irrigation management at national level. These management activities will help ensure that the Borrower will have the ability to manage climate change-related droughts, floods, and sedimentation.

Component 2: Production and Support to Agriculture Services (US$27.1 million equivalent, of which US$16.2 million from IDA and US$10.9 million from beneficiaries)

34. This component will focus on progressively promoting a prominent private sector role to improve production, markets, and support services with an emphasis on improving efficiency along the value chain. It will do so mainly by supporting: (i) the demand side for land preparation, mechanized paddy cultivation practices by creating a private sector land service delivery mechanism for provision of these services and inputs through e-vouchers, training, and awareness campaigns (Subcomponent 2.1); (ii) the supply side of goods and services through Matching Grants for business proposals, training, workshops, and studies (Subcomponent 2.2); (iii) the development of a network of management support centers through the subcomponents described below; and, (iv) technological innovation and vocational training (Component 3).

35. **Subcomponent 2.1: E-vouchers for Re-launching Production in the Irrigation Perimeters** (US$16.8 million, of which US$8.4 million from IDA and US$8.4 million from beneficiaries)**.** This subcomponent, which will

be implemented with the support of the TA of Subcomponent 1.3, will support the capacity of farmers after rehabilitation (and consequently having lost purchasing power) to purchase the following: (i) agricultural inputs; (ii) pay for land preparation services; and (iii) pay for the irrigation service fee. Female farmers will be specifically supported to enhance their access to the assets and services, and specific measures will be adopted to ensure that female farmers are aware of the e-voucher program and that barriers to their access to the e-vouchers are reduced along with a target of 30 percent women farmers. Details of the support as well as the phase-out strategy are provided in Annex 2. For each beneficiary, a subsidy in the order of US$175 per season will be provided after rehabilitation over the course of one year (two crops; US$350 on Year 1 after rehabilitation), assuming that, under the project, farmers will be able to increase production from one to two crops per year, with private sector support under the reformed SEMRY. An e-voucher manual will be elaborated through which electronic purchase orders will be based on the recently completed MINADER Manual of Agricultural Input Subsidy Procedures adopted by Prime Ministerial Decree on August 28, 2019. Grants to beneficiaries in the form of electronic vouchers are estimated at approximately US$8.4 million and will be further defined in the operations manual.

36. **Subcomponent 2.2**: **Matching Grants for Production and Agribusiness in the Valley** (US$9.4 million, of which US$6.8 million from IDA [US$5.2 million for the Matching Grants themselves and US$1.6 million for consulting services, equipment and operations] and US$2.0 million from beneficiaries). This subcomponent will finance: (a) Provision of Matching Grants to Matching Grant Beneficiaries, as further detailed in the Matching Grants Manual, to support activities related to, *inter alia*, agricultural production, mechanization, agricultural value addition, and commercialization. Matching Grants will be provided to producer organizations, associations, cooperatives, entrepreneurial farmers, and established agribusinesses or startups through three grant windows tailored to achieve specific outcomes in terms of improving production, value addition, commercialization, and service provision (see details in Annex 2 for each grant window). Following a call for proposals to submit business plans grants will be awarded on a competitive basis for up to three years to co-finance eligible sub-projects in each category. Proposals will consist of investments, TA, and working capital and will be prepared, if needed, with assistance from professionals. The Matching Grant facility will be implemented by the Project Implementation Unit (PIU)[17] and supported by a consultant hired for the duration of the project and will be in charge, among others, of the training of the local service providers for ensuring the quality of business plans. These activities will help promote crop diversification, including promoting perennial crops that act as carbon sinks, while also promoting efficient water use in the face of water shortages exacerbated by climate change. The consultant, under the supervision of the Gender Specialist of the PIU, will coordinate with local non-governmental organizations (NGOs), women associations, and women farmers groups to inform women about the Matching Grants, and how to seek support, and assist the groups in the development of business plans. Matching grant implementation will start as soon as the project becomes effective.

37. **Subcomponent 2.3: Organizational Management Support Centers (*Centres de Gestion et d'Économie et Rurale,* CGERs)** (US$1.0 million from IDA). The project will support the creation of a network of private Organizational Management Support Centers (CGERs) through the provision of TA, equipment and small works for their facilities. CGERs will be one-stop-shops that provide smallholder farmers, producers organizations, WUAs, cooperatives, and enterprises with quality assistance services that are affordable and tailored to the financial capacities of recipients, including to the needs of women farmers. These services will typically include accounting, financial management (FM), procurement, management, and in general all functions that support organizational and governance for organized producers and enterprises. Beneficiaries will be able to hire local consultants for eligible activities. The model is based on the successful experience promoted by *Société*

[17] With a clear governance framework and strong supervision.

d'Aménagement et d'Exploitation des Terres du Delta et de la Vallée du fleuve Sénégal (Land Development and Exploitation Company of the Delta and Senegal River Valley, SAED) in Senegal. A cost recovery system will reduce any dependence from the project after Year 4 of implementation. Two CGERs will be established in Yagoua and Maga during the first and second year of implementation, with a decreasing support over the project duration period. The PIU will closely monitor the CGERs on services provided to women farmers, seek feedback on satisfaction of beneficiaries and their suggestions for improvements, should those be necessary.

Component 3: Support to Sector Development and Implementation (US$37.4 million equivalent, of which US$30.4 million from IDA and US$7.0 million from the GoC)

38. **Subcomponent 3.1: Institutional Strengthening of Public Institutions** (US$8.2 million from IDA; this will include consultancy services, training and Performance-Based Conditions (PBCs). The strengthening of public institutions will relate mainly to the reform of SEMRY and the strengthening of sectoral administrations, in particular MINADER, *Ministère de l'Environnement, de la Protection de la Nature et du Développement Durable (*Ministry of Environment, Nature Protection and Sustainable Development, MINEPDED) local authorities, and traditional chiefs.

39. **In order to support SEMRY's evolution into a public establishment** ("etablissement public"), based on the elaboration of the Transformational Plan elaborated during preparation, this subcomponent will support:

(i) **Consulting services for supporting the implementation of the transformational plan of SEMRY,** including, among others, support in the procurement process for a PPP contract for the management of the processing and commercialization facilities, support for implementing the social plan and independent verification of the PBCs, transfer of other services (hotel, caretaking, etc.);
(ii) **Consulting services of an independent verification agency (IVA) to ensure compliance of the PBCs;** and
(iii) **A Public Private Partnership (PPP) procedure;** a leasing contract ("affermage") or similar—will be procured to transfer the processing and commercialization activities of SEMRY to the private sector. The selection of the Operator would be through a competitive process. Details on the procurement process are provided in Annex 1, including market test and sharing the financial analysis elaborated during preparation of these facilities.

40. **PBCs will be used to support the implementation of the transformation plan of SEMRY.** Nine (9) PBCs have been selected for a total amount of US$6 million, eight (8) with SEMRY (disbursement of US$5.5 million) and one with the WUAs- (disbursements of US$0.5 million), see details in Annex 3:

1. **SEMRY approves the amendments of its Statute as with terms and conditions of the Project Implementation Manual (PIM)** (US$0.5 million)
2. **Regularization and update of SEMRY's land tenure titles** (US$0.5 million);
3. **Land preparation services, irrigation service fees, and SEMRY's fees are separated effectively** (US$0.5 million);
4. **SEMRY implements the decision adopted under PBC#3 and improves collection rate of their fees** (US$1.0 million);
5. **Each of the eight WUAs collects irrigation service fees** (US$0.5 million)**;**
6. **Effective transfer of the management of the eight rehabilitated irrigation schemes, between SEMRY and each of the eight WUA (**US$1.5 million);
7. **Developed and conducted annual performance evaluation on the implementation of the Scheme Management Code in the eight rehabilitated irrigation schemes** (US$0.5 million);

8. **Implementation of SEMRY's social plan** (US 0.5 million)**;** and
9. **SEMRY has approved the transfer of processing and commercialization activities to the private sector** (US$0.5 million).[18]

41. In addition, the project will collaborate with MINADER at local level as well as at national level to strengthen the rice sector professional organizations and the emergence of a rice inter-professional organization capable of representing all professionals.

42. **Subcomponent 3.2: Innovation and Agricultural Training** (US$6.4 million from IDA). The project will promote Subgrants (for US$4.9 million) with local actors for improving irrigated agriculture in the Logone Valley based on a Subgrants Manual at three levels: (i) higher education such as University of Maroua; (ii) technical and vocational training (TVET) level; and (iii) at local level by the creation of Centers for Technological Innovation (CTI)/*Centres d'Innovation Technologique (CITs):*

- **At the higher education level**, subgrants will be arranged with the Universities of Maroua and Dschang for the organization of training modules on the centers of interest of the project, such as agricultural mechanization, irrigation, rice growing, quality of rice products, and climate-resilient agriculture;
- **At the TVET level**, subgrants will be signed with the Lycée Technique Agricole de Yagoua located in the project intervention area as well as with other public and private technical training centers (Centre de Formation Professionnelle). The project will support the creation and revitalization of vocational training centers in sustainable irrigated agriculture and agricultural machinery in the Yagoua and Maga areas; and
- **At the local level**, subgrants will be focused on the conversion of SEMRY's experimental farm in "Vounaloum" Yagoua into a Center for Technological Innovations (*Centre d'Innovation Technologique,* CTI) also with an antenna in Maga that will bring the participation of farmers organization into the operation and governance of the new interprofessional associative structure. Collaborations will be sought with existing institution such as AfricaRice, IRAD, IFDC and others for ensuring technological innovation and basic seed production. The CTI will become a major center for technical training in the region.

43. The absence of a national, inter-professional organization to represent and organize the rice sector is a recognized constraint. As in the other priority agricultural sectors at the national level, MINADER, on behalf of the Government, would like the rice sector to be organized with an inter-professional organization representing the various professions in irrigated and rainfed rice growing, in order to be able to transfer to it a certain number of functions. The project will support MINADER and the various representative professional organizations to facilitate the establishment of a single, autonomous, national, rice-growing inter-professional organization recognized by the State and capable of representing all the key actors concerned.

44. **Subcomponent 3.3: Project implementation and monitoring and evaluation (M&E) support** (US$22.7 million, of which US$15.7 million from IDA, which includes the project preparation advance (PPA) for US$5.7 million, and US$7.0 million from the GoC)**.**[19] The project will be implemented by a PIU (see details in Annex1) that will report to the Steering Committee and to the Director General (DG) of SEMRY. A Steering Committee, composed of representatives of the related sectoral administrations, will be set up as the implementation of the project requires an in-depth discussion around the distribution of institutional functions in the area. The

[18] Note that these PBCs are independent of each other.

[19] The PPA is a special category of disbursement in the Financial Agreement. Thus, the contribution of IDA to the project will be US$10 million to this subcomponent.

PULCI Project was an emergency project, but the VIVA Logone Project will ensure the sustainability of the functions of SEMRY. For this, it will be necessary to separate the temporary functions to be carried out by the PIU (supervision of the works, management of the Matching Grants, etc.) from the permanent functions to be carried out by SEMRY (expertise in machinery, rice growing, WUA, etc.).

45. **SEMRY is the implementing agency.** A PIU, which will be based within SEMRY and will report jointly to the Steering Committee and to the DG of SEMRY, will assist in the implementation of the project. The PIU will be responsible for the day-to-day implementation of the project. The proposed structure of the PIU (see staff list in Annex 2) and key job descriptions/profiles have been developed and agreed with MINEPAT/MINADER/SEMRY. SEMRY's staff capacity will be reinforced during implementation within Subcomponent 3.1, and SEMRY will take gradually responsibilities. Core functions and structure are detailed in the section on implementation arrangements below. This subcomponent will finance vehicles, operational costs, and consulting costs (see Annex 1 for more details). Finally, this subcomponent includes all necessary technical and social and environmental studies for project implementation, if any (ESIA, ESMP, RAP, etc. were financed as part of the PPA).

46. Government counterpart funding will cover the costs of the (i) Steering Committee; (ii) the Regional Technical Committee; (iii) the Special Tender Board; (iv) support to implementing ESMP activities; (v) any costs (including per diems) related to the carrying out of site visits, and follow-up and supervision missions and similar; and (vi) any other costs required for project implementation that are not eligible for financing by IDA.

Component 4: Contingent Emergency Response (US$0.0 million from IDA)

47. Following an eligible crisis or emergency, the Borrower may request the World Bank to re-allocate project funds to support emergency response and reconstruction. This component would draw from the uncommitted credit resources under the project from other project components to cover the emergency response.

C. Project Beneficiaries

48. **Different groups of poor people can be expected to benefit from increases in agricultural productivity from the Logone Valley irrigation project**. Poor farmers, particularly women farmers, will benefit from higher incomes brought about by the ability to increase irrigation productivity and a likely doubling of cropping intensity (to 180 percent) from the current very low land utilization on the schemes (only one crop per year). Productivity gains in irrigation farming will lead to ripple-effect benefits in the form of local economic activity for agricultural services (land preparation, farm mechanization, transport, input-supplies, milling, and marketing), and increased food availability at reduced prices, particularly during the dry season. When increased agricultural productivity leads to increases in food production, lower food prices will directly benefit the (non-farming) urban poor and net food buyers in rural areas who are the poorest in Cameroon. This is not inconsequential as high transportation costs to the Far North make food an imperfectly tradeable commodity. An important transmission mechanism from agricultural productivity to aggregate growth is through the price of food, as it allows lower labor costs in the rest of the economy to be sustained. Through infrastructure investments and support for intensifying production, the project will benefit more than 30,000 direct beneficiaries (via improved irrigation and drainage) and around 200,000 indirect beneficiaries. In addition, improved flood management, including the early warning system, would benefit an estimated 600,000 residents of the Logone Valley, both in Cameroon and Chad, extending all the way to Lake Chad. Benefits would be through an increase in flood preparedness of Government and of the wider population, and reduction in the loss of life from flood events.

Summary Project Costs and Financing

49. Project costs are summarized in Table 1 below. The IDA financing is US$200.0 million equivalent, beneficiaries' contributions are US$10.4 million, and the GoC is contributing US$7.0 million.

Table 1: Summary Project Costs and Financing

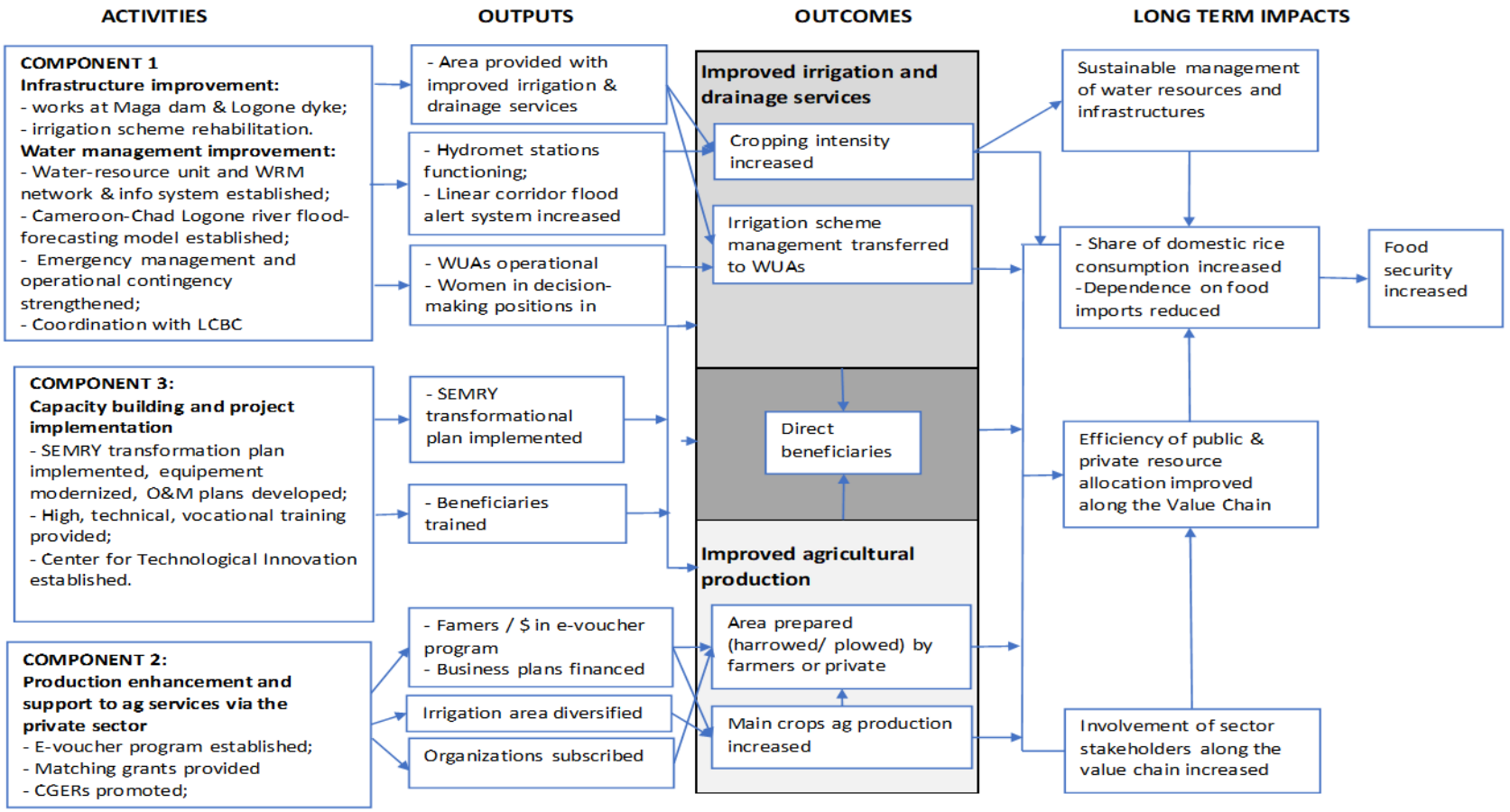
Components	IDA	Beneficiaries	Co-financing by Government	Total
SC1.1: Security and Operation of Main Hydraulic Infrastructure	1.5			1.5
SC1.2: Irrigation and Drainage Infrastructure, and RAP and ESIA	146.5			146.5
SC1.3: Irrigation and Drainage Management	5.4			5.4
Sub-total Component 1	**153.4**			**153.4**
SC2.1: E-vouchers for Re-launching Production in The Irrigation Perimeters	8.4	8.4		16.8
SC2.2: Matching grants for Production and Agribusiness in the Valley	6.8	2.0		9.3
SC2.3: Organizational Management Support Centers (CGERs)	1.0			1.0
Sub-total Component 2	**16.2**			**27.1**
SC3.1: Institutional Strengthening	8.2			8.2
SC3.2: Innovation and Agricultural Training	6.4			6.4
SC3.3: Project Implementation and M&E Support	10.0		7.0	17.0
Sub-total Component 3	**30.4**			**37.4**
Component 4: CERC	**0.0**			**0.0**
Project Preparation Facility (PPF)	**5.7**			**5.7**
Grand Total	**200.0**	**10.4**	**7.0**	**217.4**

D. Results Chain (see next page)

E. Rationale for World Bank Involvement and Role of Partners

50. The World Bank's support to Cameroon through this project will create synergy among the ongoing or completed national and regional projects and fill the financing gaps. Currently, there are a range of projects working on various sectors and themes such as irrigation, agriculture, flood protection, transport, climate resilience, transboundary water management, market development, and transport. The implementation of this project will complement and amplify the overall development impacts of these projects. It specifically helps the Cameroon government to unlock the benefits of infrastructure sunk costs of the recently closed Flood Emergency Project (P143940) as well as work in close collaboration with the VIVA-Benoue Project (P166072) which is very similar in nature. In addition to financing, the World Bank will provide unparalleled technical input based on its rich international operational experience on irrigation, agriculture, water infrastructure development, transboundary water management, climate adaptation and resilience, and institutional reforms (see also Annex 4 Implementation Support Plan).

Theory of Change



F. Lessons Learned and Reflected in the Project Design

51. Irrigation development and management in Cameroon have not evolved since the 1980s, contrary to other countries in the region. Lessons learnt in other African countries, as well as in Organization for Economic Co-operation and Development (OECD) countries, show that it is fundamental to separate irrigation management from agricultural support services, transfer irrigation management to WUAs, and bring in the private sector and farmers organizations for maximizing cropping intensity for services such as mechanization and commercialization. For the last 30 years, SAED in Senegal has had an extensive program of transfer of responsibilities to WUAs and farmers groups, reaching a high degree of delegation and crop intensification in the Senegal river valley. The *Office du Niger* in Mali has had a similar process of transfer of responsibilities. The World Bank has been supporting processes in other countries, such as Nigeria with the Transforming Irrigation Management in Nigeria (TRIMING) Project (P123112).

52. The recent PULCI Project focused mainly on emergency flood protection measures through upgrading of the 70 km flood dike along the Logone River and the 27 km of the Maga dam. The project also included rehabilitation of the irrigation bulk-water infrastructure located on the dam and dike, including some intakes, main canals and secondary canals. Yet, both schemes remain grossly underutilized due to a mix of limiting factors that include: the archaic, highly-centralized and inefficient institutional arrangements of the SEMRY parastatal that was established in 1954 and last re-organized in 1971; mostly dilapidated irrigation and drainage infrastructure constructed between 1972 and 1986; and wholly inadequate farm-systems support arrangements.

53. Four key conditions are required for the project to succeed in its expected transformational role: (i) government commitment to financial sustainability and institutional reforms (working on the institutional framework at national level); (ii) accountability of irrigation agencies to farmers; this includes a commitment from agencies to provide satisfactory services (a transformation plan of SEMRY is included in project design; (iii) participation of water users through empowered WUAs, which set and collect fees and also make spending decisions; and (iv) farmers' willingness and ability to pay Operations and Maintenance (O&M) fees.

54. Lessons regarding the matching grants learned from the PIDMA and the Livestock Development Project (PRODEL) Project (P154908) include: (a) it is very important to have proper support mechanisms for the preparation of BPs as (i) there are few qualified technical service providers in Cameroon (this is a principal constraint in PIDMA and PRODEL), therefore it would be useful to plan to mobilize qualified operators, internationally recruited if needed, and (ii) those implementing actions with matching grants need a lot of support from the service providers during both preparation and implementation of BPs; (b) the preparation of some standard BP models is very useful to help and guide project holders and technical services providers; (c) it is important that the selection process ensures equity, transparency, and accessibility of the matching grants to the targeted farmers (one must look carefully at the selection criteria, how they plan to communicate, etc.); (d) one size does not fit all, given different types/mechanisms/sizes of matching grants to respond to the differentiated needs of the farmers; (e) it is important to have simple procedures which are implementable to avoid lengthy instruction times; (f) it is better to decentralize the instruction of demands to streamline procedures; and (g) it is useful to plan from the start a mechanism for sharing lesson and to improve/simplify the processing of requests where feasible.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

55. MINEPAT will lead the Project Steering Committee (PSC) as President. In addition, MINEPAT is responsible for ensuring the annual provision of funds for O&M of the main infrastructure of the region, such as

the Maga dam and the Logone dike. The implementing agency *(agence d'exécution)* is SEMRY, which reports to MINADER who will act as Vice-President of the Steering Committee. SEMRY is the main government entity responsible for agriculture and irrigation development in the Far North region.

56. A PIU, to be based within SEMRY, will report jointly to the Steering Committee and to the DG of SEMRY, will assist in the implementation of the project (see Annex 1). The creation of this unit is necessary because of capacity limitations within SEMRY. As SEMRY evolves and develops its full capacity, the PIU roles can diminish and SEMRY will take on full responsibility for long-term activities in order to adopt and continue the change and adaptation process beyond the execution of the project. Changes of roles will be approved by the PSC.

57. SEMRY will be subject to a major restructuring effort under Component 3; this is fundamental in order to design and put in place a modern institution accountable for government public services for irrigation agriculture in the Far-North. In the medium term, as it acquires capacity, SEMRY will be responsible for the long-term sustainability of all the investments (such as dam/dike maintenance, WUAs oversight, farmers training), and it will progressively get involved in the management of the contracts, such as those between WUAs and SEMRY. The PIU will progressively transfer the project's management to SEMRY, which is expected to happen from before and during the third year of implementation.

58. The main strength of this arrangement is that SEMRY is the long-established local presence, and with substantial local development experience, being a permanent long-term development actor in the agricultural and irrigation sector. The PSC will be chaired by a representative of MINEPAT at the director level, with the Project Coordinator serving as secretary. The PSC will be comprised, *inter alia,* of (i) representatives of MINEPAT, MINADER, MINTP, MINEFI, MINEPDED, MINEE, *Caisse Autonome d'Amortissement*/Autonomous Amortization Funds (CAA), the Governor of the Far North Region, and SEMRY; and (ii) representatives of producer organizations and WUAs from the Yagoua and Maga areas.

59. The PIU would be established, drawing on the successes of the PULCI Project, including potential re-contracting of qualified technical personnel into the VIVA Logone PIU team. Several high-quality development studies were carried out by international consulting firms for the engineering and institutional modernization activities. Consolidated procurement experience would be brought into the PIU from the PULCI cadre or separately by advertisement nationally. The PIU will include a cross-cutting team (Coordinator, Change Management Specialist, FM Specialist, Procurement Specialist, M&E Specialist, Environmental Specialist, Social Specialist, Gender Specialist, Communication Specialist, Agri-business Specialist, and Agri-finance Specialist, two Accountants and an Internal Auditor). The technical team such as water resources, irrigation, etc., will be part of the new SEMRY staff. The implementation of Subcomponent 3.1 (Institutional Strengthening), including implementation of PBCs, would be supported by a TA and monitored by the Change Management Specialist.

60. Under Component 3, SEMRY will be strengthened and modernized. On the one hand, it will gradually terminate operations that are better operated through a functioning private sector, while on the other hand it will take on strategic and regulatory functions that are within the responsibility of a modern public sector agency in charge of the development of the Far-North of Cameroon. The current and proposed new structures of SEMRY are described in Annexes 2 and 6.

B. Results Monitoring and Evaluation Arrangements

61. Project-level M&E systems, detailed in the M&E manual (which will be part of the PIM) will track progress during implementation, measure intermediate outcomes, evaluate progress on PBCs,[20] and evaluate project

[20] With clear verification protocols and monitoring.

impacts. The monitoring and evaluation system (MES) will capture information on project results against the targets set as part of the Results Framework (RF). An IVA will be in charge of the verification of progress to achievements expected for PBCs. The PSC will oversee this work.

62. To inform RF indicators at project inception, a baseline survey was conducted during project preparation. Beneficiaries will be surveyed subsequently in Year 3 (mid-term) and Year 6 (project end) to track changes in their livelihood conditions attributable to the project. As the implementing agency, the SEMRY's PIU will be responsible for the overall monitoring and reporting of project progress. In addition to regular monitoring and reporting on the agreed project indicators, activities to be monitored include the timely, efficient, and transparent supervision of procurement and contract management; rehabilitation of irrigation schemes' effective implementation of the ESMP and RAPs; and successful completion of studies and training activities.

63. Progress reports will be prepared for each semester of project implementation and will be submitted to the World Bank no later than 45 days after the end of the period covered by the reports. Monitoring of results and outcomes, in accordance with the project RF (Section VII), will be reported in the project progress reports. An M&E specialist will be retained at the PIU to implement and coordinate all M&E activities under the project. Furthermore, the World Bank will supervise the project over its lifetime. Up to the Mid-Term Review (MTR), which will be carried out no later than four years after effectiveness, the project will produce semi-annual reports. The MTR will reassess the periodicity of project implementation reports as may be required.

C. Sustainability

64. Sustainability of project achievements is predicated on a number of project design features *inter alia* aimed at: (i) reform of SEMRY in particular, as SEMRY is strengthened and transformed, it is expected to take over many of the PIU responsibilities before or during Year 3 of the project (thereby assuring the sustainability of the project); (ii) establishing the necessary legal frameworks and regulations for compulsory adhesion to WUAs as commonly done in most OECD countries; (iii) increasing competitiveness in the agriculture sector by enhancing productivity and resilience through promotion of PSP in irrigated agriculture and access to improved agricultural technologies; (iv) ensuring sustainable support to farmers' access to relevant production information and best practices for decision-making, such as via the Organizational Management Support Centers; (v) mid-to long-term management responsibility over parts of the irrigation schemes shifted to WUAs (formed, trained and capacitated under the project), dealing with their organizational governance (including women leadership) and FM;(v) supporting farmers and SMEs to access finance for their investments in sustainable production methods; (vi) addressing specific challenges such as significantly increasing the cropping intensity; and (vii) empowering local-level stakeholders through training and capacity-building to address specific challenges. Institutional strengthening and transformation of SEMRY will make it a more effective institution, which is expected to result in more sustainable outcomes for the project area and for the general development of Far-North in Cameroon.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis (if applicable)

65. **Technical analysis.** The project has been designed to ensure efficient, sustainable, and equitable irrigation and drainage services as well as water resources management in the Logone River valley and to increase agricultural production, along with improved market access, for both domestic and export markets.

66. Component 1 has as primary goal to contribute to a more sustainable and equitable regional water resources management in addition to an improved irrigation and drainage services in the Logone valley, building upon the work done within the PULCI Project. This will be achieved by combining infrastructure, institutional, and informational activities so that SEMRY becomes a modern water institution. Subcomponents under

Component 1 include: (a) upstream water resources monitoring and coordination as well as operation and safety of main hydraulic infrastructure; (b) rehabilitation of irrigation and drainage infrastructure as well as irrigation schemes; and (c) irrigation and drainage management. Transfer will be done on a two-phase approach: (i) at the start of the project on a co-management basis between SEMRY and the WUAs and (ii) once the schemes will be rehabilitated with a transfer. The rehabilitation of the irrigation schemes will be undertaken gradually during three-four years and will include PLL of all 12,210 hectares of the eight (8) schemes (four (4) in Yagoua and Maga) to enhance water use efficiency and enable private sector-led land preparation and mechanized paddy cultivation operations. Climate-smart technologies to produce two rice crops per year and to diversify production towards higher value crops and aquaculture would contribute to sub-regional food security with a significant national market and large regional export markets.

67. Components 2 and 3 will encourage a prominent private sector role to improve production, markets, and agricultural support services with an emphasis on improving efficiency along the value chain of rice, other irrigated crops, and aquaculture. It will do so by supporting: (i) the demand side for PLL, land preparation services, agricultural inputs and advisory services, and mechanized paddy cultivation operations; (ii) the supply side of goods and services with Matching Grants; (iii) the development of a network of management support centers and the project provision of vouchers, matching grants, and extension services; (iv) the reform of SEMRY into a modern institutions focused on Government role; and (v) technological innovation and vocational training.

Development impact in terms of expected benefits and costs

68. The project is expected to contribute to food security, water security/water resources management, economic growth, and enhanced climate resilience for farmers in the northern regions of Cameroon. It will create the enabling conditions for the development of the Logone River Valley through concerted structural and non-structural interventions. Among these, it is expected to develop sustainable, CSA production systems, improve water management, promote farmer-led irrigation out of the SEMRY's irrigation schemes, and developing cost-effective irrigation systems and other interventions that are critical to improving agricultural production and water use efficiency at the farm level. The project would also ensure the adoption of modern production technologies and setting up the necessary support for sustainable and inclusive value chain development intended to help farmers to improve their income by growing and marketing their rice and higher value crops (HVCs).

69. Project activities are foreseen to yield positive impacts such as (i) safeguarding the basic socio-economic infrastructures in the North region; and (ii) improving food security in the north of the country, where 60 percent of the population are at risk of food insecurity. Rice, one of Cameroon's main food imports, grown in the North by both traditional and modern methods, will particularly be supported. Livestock has also a role in the region, particularly for the migrant cattle herders, the Fulani.

70. The economic and financial analysis (EFA) was prepared together with the counterpart team based on relevant data collected since the 2018 World Bank preparation missions. This assessment was based on "with and without project" scenarios prepared during the February 2020 World Bank mission, including the proposed investments for the project. Scenarios were defined and revised as new project design details were made available in October 2021. The scenarios and EFA results are presented below. The scenarios allowed estimating the incremental costs and benefits that the project interventions and activities would induce under the three complementary components.

71. **Total project costs are estimated at US$217.4 million**. Investments would be financed mainly by IDA (US$200 million) and by beneficiaries (US$10.4 million) with loans from commercial banks. The Government would contribute US$7.0 million. The project would be fully justified with an Economic Rate of Return (ERR) of

10.2 percent and a Net Present Value (NPV) of FCFA 39.9 billion (equivalent to US$66.4 million). By adding the greenhouse gas (GHG) emission mitigation, the ERR of the project increases from the estimated 10.2 percent to 12.6 and 17.0 percent, respectively, when using the low and high shadow price of carbon.

72. **Institutional modernization of SEMRY**. The institutional reform of SEMRY is expected to improve organizational efficiency, reduce overhead and O&M costs, and ease the budgetary burden on the government, which is increasingly challenging. The segmentation of business lines into discreet operations, with an appropriate mix of private and public-sector ownership will particularly help farmers to have timely and affordable mechanization, rice milling, marketing, and irrigation water delivery services and allow them to avoid the problems of late plowing, poor land leveling, slacking of farm land, and low and unpredictable crop prices. The institutional modernization will be an opportunity to clarify land tenure rights in the irrigation schemes. The irrigation schemes will remain State land but building on similar contexts and experiences in Africa (in Burkina, Mali, Niger, and Senegal), State land management will be improved and land tenure rights for users will be enhanced.

73. **Establishment of SEMRY-Water and Logone River Water Resources Monitoring and Coordination** allows for monitoring the water resources of the Logone River and its major tributaries. The resulting water resources data will be analyzed and disseminated to mitigate flood risks and enhance transboundary water dialogue among partners.

74. **Modernization of Irrigation and Drainage Infrastructure** is expected to significantly improve the availability and reliability of irrigation water as well as improve water use efficiency at the farm level by creating opportunities, increasing cropping intensity, improving crop yields, and opening possibilities for crop diversification.

75. **The CSA interventions** are expected to contribute to the sustainable improvement of agricultural and water productivity with possible climate adaptation and mitigation co-benefits. These interventions have added benefits of lowering irrigation water demand, improving soil health, and reducing the exposure of farmers to toxic chemicals.

76. **Interventions in input and output markets and value additions will have significant impacts on farmers' income.** Farmers will have better and stable prices for their produce and access agricultural inputs at reasonable prices. Value addition activities, such as processing, will enable farmers to have a greater share of the overall direct and indirect benefits generated due to project interventions in the region.

77. **From a regional perspective**, the project has spillovers within the region such as: (i) pilot notification/data sharing from Cameroon as upstream riparian (by respecting the commitments of the Water Charter); (ii) improving regional decision support systems for management of Lake Chad (improving livelihoods and food security in the region); (iii) improving regional flood/drought management through data/information harmonization and data sharing between Chad and Cameroon; and (iv) joint flood/drought contingency planning between Chad and Cameroon along the Chari-Logone.

Rationale for public sector provisioning/financing

78. The public-sector financing of this project is justified based on the following four rationales. First, the project is planned to be implemented in the region of Cameroon lagging in socio-economic development. The far-north region exhibits the highest poverty rates, and the disparity is widening over time. Ecologically, the Far North is the most fragile region in Cameroon, with a Sahelian climate and vegetation. Barren soils constitute some 25–30 percent of the surface, and erosion is a dangerous threat to agriculture. Agriculture in this environment is highly vulnerable to climatic variability and is also increasingly vulnerable to climate change which

in turn threatens rural livelihoods and that of smallholder farmers in particular. The role of the public sector in providing and co-financing the provision of modern technologies to disadvantaged smallholder farmers, such as those in the northern region of Cameroon, is very critical in fighting poverty. Thus, the project is expected to contribute to the narrowing of the income disparity between the regions of Cameroon. Second, the project involves institutional reforms, which is naturally within the domain of public sector intervention. Third, the project involves the collection, analysis, and distribution of water resources data, which will be used by a variety of stakeholders in Cameroon, in the region and internationally, particularly in Chad. These sorts of water-related data and information are not optimally available, if efforts of collection, analysis, maintenance and distribution are left to the private sector. Finally, the interventions will have transboundary water implications with the possibilities of both positive and negative externality effects.

Value added of the World Bank's support

79. The World Bank has wide knowledge and experience related to the design and financing of projects aimed at improving smallholder production systems and developing new value chains and linkages to markets, including in Africa and elsewhere. The World Bank also has experience with water management sector reforms in various countries. The experience obtained in other regions and countries can be usefully applied in Cameroon's northern provinces. The World Bank is also rapidly extending its knowledge about Climate Smart Agriculture, which is highly relevant, given the vulnerability of the far-north region to climate change and food insecurity. The World Bank will provide technical and strategic knowledge transfer through the participation of specialists with ample experience in these areas while also sharing best practices in M&E.

B. Fiduciary

(i) Financial Management

80. An FM assessment of SEMRY was conducted in line with the World Bank Directive FM Manual for Investment Project Financing (IPF) operations to determine whether the proposed FM arrangements for this project are considered adequate. The assessment concluded that SEMRY's FM capacity will need to be strengthened by relying on the PIU that will be established under the SEMRY to manage the overall coordination and implementation of the project, including FM aspects. Specifically, the PIU will establish and maintain adequate FM arrangements that will (i) correctly and completely record all transactions and balances related to the project; (ii) prepare the project's financial reports in an accurate, reliable and timely manner; (iii) secure the project's assets; and (iv) ensure that the project will be subject to auditing arrangements acceptable to the World Bank. In order for the PIU to fulfill these requirements, an experienced FM officer and an accountant will be recruited during the PPA implementation period to ensure they are on board by effectiveness.

81. The overall FM residual risk is Substantial. This is due mainly to the complexity of the project, which includes the support to the irrigation sector development that is being transformed. In addition, the project will implement an e-voucher mechanism and a matching grants scheme. The project will therefore operate in a quite new water sector organization with many new and restructured entities (WUAs, Special Committees, Producers' organizations and cooperatives, private sector, etc.). The project design also incorporates results-based financing under Subcomponent 3.1.

82. With respect to the use of country systems, the project will rely on the existing FM arrangements put in place to manage donor-funded projects. These arrangements are housed in two main institutions: (1) CAA (Autonomous Amortization Funds), which is equipped with dedicated tools developed by the World Bank Institutional Development Fund (IDF). These tools include (i) a standardized FM Manual; and (ii) an integrated FM system for donor-funded projects (namely SIGED), which includes modules relating to (a) the project cycle;

(b) budgeting and accounting; (c) automated payments; and (d) electronic filing. The Ministry of Public Procurement which is responsible for *ex ante* control of all suppliers' invoices associated with a contract which must be exercised prior to payment by CAA.

83. In addition, and in light of the above, the following additional risk mitigation measures will be adopted to strengthen the FM arrangements:

(i) The mandate of the PULCI PIU in charge of the implementation of the PPA has been extended to implement the project until the new PIU key staff (including the FM Officer and the accountant) is hired and fully operational.

84. Moreover, the following additional measures should be undertaken after the project becomes effective:

(ii) The standardized FM Manual of Procedures developed by CAA with World Bank IDF support has been customized to reflect the project specificities;
(iii) An accounting software will be purchased and installed at the PIU to handle accounting and reporting needs under the project;
(iv) An internal auditor will be recruited to conduct *ex-post* reviews of the project transactions and procedures, and to ensure that identified weaknesses are addressed in a satisfactorily manner; and
(v) The audited financial statements for SEMRY will be provided to the World Bank in addition to the Project Financial Statement audit.
(vi) An external auditor will be recruited to conduct an annual financial audit of the financial statements of the project along with a review of the internal control system, including that set up under Component 3.

85. Finally, before the project starts disbursing:

(vii) A draft scheme management code has been discussed by the Board of Directors of SEMRY and will next be transmitted to MINADER for comment and eventual approval. This is a disbursement condition for Subcomponent 1.2.
(viii) Specific manuals will be developed and will detail the management arrangements (beneficiaries' selection criteria, funds transfer conditions, accounting and reporting requirements, management needs, etc.) for grants to WUAs (Subcomponent 1.3), e-vouchers to farmers (Subcomponent 2.1) and Matching Grants (Subcomponent 2.2) ; and Sub-Grants with local actors for agricultural innovation and production (universities and training centers) under Subcomponent 3.2 with details conditions of selecting beneficiaries, receiving, expensing and justifying grants.

(ix) The project will be disbursed in line with *Disbursement Guidelines for World Bank IPF Operation*s (dated February 2017), together with the current arrangement that involves the CAA as a public accountant. At the time of preparing the FM assessment and for the reason set forth in subsection 5.2 of the Disbursement Guidelines, the advancing of financing proceeds into a Designated Account is not a Disbursement Method currently available under this Financing. As the foregoing measure is deemed temporary, disbursement arrangements have been designed to include the use of Designated Accounts to the extent such use is permitted at a later date during project implementation, provided that the Disbursement and Financial Information Letter will first need to be amended at a later date to reflect such arrangements, if already signed before.

86. The IPF-PBC related disbursements (under Subcomponent 3.1) will be made upon achievement of PBCs and against eligible expenditures and provided (i) expenditures incurred are sufficient to cover the PBC amount; and (ii) the PBCs have been verified using the agreed verification protocols. The advance option will be made available to the Government to prefinance activities that will help achieve PBCs. Therefore, a dedicated

Designated Account (DA) would be opened for such advance that will be deducted from the amount to be paid upon achievement of the indicators. An IVA will be recruited to verify the achievements of the PBCs based on an agreed verification protocol. The remaining components will follow the standard disbursement arrangements (advance, direct payments, reimbursement, special commitments) and will be documented using statement of expenditures (SOEs). Detailed disbursement arrangements are provided in Annex 1.

87. The proposed FM arrangements for this project are considered adequate and meet the World Bank's minimum FM requirements.

(ii) Procurement

88. Procurement for goods, works, non-consulting, and consulting services will be carried out in accordance with the procedures specified in the latest World Bank Procurement Regulations for IPF Borrowers dated November 2020 (Procurement Regulations), the Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (revised as of July 1, 2016; Anti-Corruption Guidelines), and provisions stipulated in the Financing Agreement.

89. The proposed project will use the Systematic Tracking of Exchanges in Procurement (STEP) system. STEP is a planning and tracking system which would provide data on procurement activities, establish benchmarks, monitor delays, and measure procurement performance.

90. A procurement assessment was carried out during the preparation of the project (see details in Annex 1). The overall procurement risk is High, but after the proposed mitigation measures have been implemented, the remaining risk will be Substantial. The key procurement risks under the project are as follows: (a) staff involved in the project may not have sufficient knowledge of the New Procurement Framework (NPF), and/or there is a risk of confusing NPF with former Procurement and Consultant's guidelines; (b) procurement staff with the experience required to effectively implement procurement actions on time, and in line with World Bank procurement policies and procedures are insufficient; (c) inadequate communication and interaction between beneficiaries and the PIU may lead to delays in procurement and poor cost projections; (d) administrative routines may result in procurement delays with the potential to impact project implementation; (e) the procurement in a specialized market with few bidders can restrict competition and possibly increase prices and collusion risks; (f) the corruption risks in procurement of big contracts taking into account Cameroon's Corruption Perception Index; and (g) poor filing which may lead to loss of documents. Overall, all these risks can cause mis-procurement, 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.

91. The Project Procurement Strategy for Development (PPSD) identified the appropriate selection methods, market approach, and type of review by the WBG for the high-risk and high-value contracts that will be executed during the implementation of the proposed project, for example the contract for works. The PPSD and draft Procurement Plan PP were approved during negotiations. During implementation, the Procurement Plan will be updated as required, at least annually, to reflect actual program implementation needs and improvements in institutional capacity.

C. Safeguards

(i) Environmental Safeguards

92. The proposed project triggers the World Bank's Operation Policy on Environmental Assessment (OP 4.01). The project lies in the tropical savannah climate zone with Sahelian traits, and potential adverse environmental and social (E&S) impacts, including significant, permanent, residual, and irreversible effects could

occur; therefore, the project has been designated as Category A. Adverse impacts may include: (i) changes to soil characteristics and fertility from the use of inorganic chemicals; (ii) changes in soil structure and texture and risk of soil erosion /leaching due to earthworks and machinery movements; (iii) public health risks due to waterborne diseases along with the expansion of irrigated areas and in light of COVID19 prevalence of migrant workers will likely pose an increased risk of accelerated contagion in the longer term; an economic downturn will push more unemployed people into illegal activities as a coping strategy; (iv) health and safety risks for workers and neighboring populations; (v) risks associated with the development and dissemination of new agricultural technologies; (vi) risks of pest issues in the project command area; and (vii) downstream risks from previous and future investments, issues related to maintaining canals and drains, etc. Specific environmental risks are related to excavation, waste disposal, disposal of demolished material, impacts on topsoil, vegetation and opening of borrow pits. In addition, the project should contribute to local climate change with the emission of methane generally observed in rice growing areas. Other potential impacts include (but are not limited to): destruction of plant cover, risk of destruction of wildlife habitat and straying of wildlife with excavation work, risk of occupational accidents and occupational health and safety (OHS), risk of traffic accidents, risk of destruction or desecration of Physical Cultural Resources in this area including graves.

93. **On the other hand, the project is expected to have potential positive environmental impacts in the project area**. Farmer Field Schools (FFS) demonstrations, through the CTI, will contribute to improving soil management and introduce sustainable cropping practices. Promoting the adoption of priority technologies (Integrated Nutrient Management, improved soil management, organic farming techniques, diversification into higher value horticultural crops with lower water demand, etc.) would raise the awareness of sustainable environmental management among government staff, famers, and water users. The project will also generate employment for local populations, contribute to local development with various supports to be given to local communities, create development of economic activities around the work sites, generate business opportunities for economic operators of the area (catering, supply of materials and equipment to contractors, etc.).

94. **Environmental management instruments.** A number of safeguards instruments have been prepared or will be prepared for the project as follows:

- An Environmental and Social Management Framework (ESMF) and a Pest Management Plan (PMP) have been prepared. The ESMF and PMP were consulted upon and disclosed on February 17, 2021, both in-country and at World Bank website.
- All environmental assessments for the purpose of sub-projects will: (i) assess the environmental, labor, OHS issues and problems related to use of agro-chemicals; (ii) understand the status of current use of agro-chemicals; (iii) assess the level of awareness of farmers in handling and management of pests and pesticides; and (iv) provide recommendations. In addition, competition for water is increasing and the modernization of irrigation will take into account other uses of water in the catchment in terms of quantity as well as of quality. A minimum flow to be allowed to flow into the Logone has been agreed with the LCBC.

95. An international, independent consulting firm was contracted to prepare a full ESIA/ESMP for the 12,210 hectares of irrigation schemes. The documents include other instruments such as: (i) the Emergency Preparedness and Response Plan; (ii) the Water Quality Monitoring Plan; and (iii) the Heritage Management Plan. The preparation process is complete and clearances were obtained on April, 29, 2021. The ESIA and ESMP were disclosed both in country and on the World Bank website on May 1, 2021.

96. **ESMP.** E&S mitigation measures linked to rehabilitation of downstream infrastructure assets and PLL of all 12,210 hectares will be incorporated in the bidding documents for the contractors, who will be required to submit a draft of a site-specific ESMP (or Contractor ESMP) as part of the tendering requirements. The contractor

and subcontractors are contractually required to develop an emergency preparedness and response plan as well as a chance find procedure as part of their ESMP. In addition, they will have to produce a site-specific OHS Plan and related procedures that prescribe how to identify and minimize hazards to workers; provide appropriate equipment; identify preventive and protective measures; train workers; and document and report accidents, diseases, incidents, and near misses. Based on the ESMF and ESIA/ESMP, the residual E&S impacts after the mitigation measures are acceptable.

97. **Environmental Safeguards policies.** The World Bank's safeguards policies triggered for the project and underpinning its safeguards instruments are: Environmental Assessment OP/BP 4.01; Natural Habitats OP/BP 4.04; Forests OP/BP 4.36; Pest Management OP 4.09; Physical Cultural Resources OP/BP 4.11; Safety of Dams OP/BP 4.37; and Projects on International Waterways OP/BP 7.50. The project is subjected to the WBG General Environmental, Health and Safety (EHS) Guidelines, the World Bank EHS for annual crop production, and the application of these guidelines is tailored to the hazards and risks to be established on the basis of the results of the ESIA/ESMP. According to the requirements of the latter directive, special attention should be paid to the following environmental issues: the pressure often exerted by agriculture on water resources and water stress, management of soil erosion and loss of the production capacity of the soil, the impacts linked to use of pesticides (including the health impact for farmers), the eutrophication of the aquatic environment due to the increase in organic loads, the management of crop residues and other solid waste, and the atmospheric emissions generated by crops and civil works.

98. **Environmental Assessment OP/BP 4.01.** As highlighted above, safeguards instruments prepared in compliance with OP/BP 4.01 include: (i) ESMF; (ii) ESIA/ESMP for 12,210 hectares irrigation schemes; and (iii) a PMP. The ESMF includes the grievance redress mechanism (GRM) showing how the eventual grievances linked to the project will be prevented and managed. The code of conduct will be a part of contract of any stakeholders of the project for implementation during their intervention. Safeguards instruments showed clear links for follow-up from ESIA → ESMP → civil works contracts → terms of reference (TOR) of supervising engineers → firms assisting Borrower with E&S monitoring → TOR of PIU E&S staff → World Bank task team implementation support plans.

99. MINEPAT/MINADER and SEMRY will set up their E&S team to support the preparation, implementation, and monitoring of the ESMPs. Qualified E&S specialists will be on the ground, and their capacity will be strengthened throughout the lifecycle of the project. E&S mitigation measures linked to construction activities will be incorporated in the bidding documents and contractual arrangements. The bidding documents will clearly state that no construction works will begin prior to the clearance of the Contractor ESMPs by the Owner's Engineer/Project Owner and no objection by the World Bank.

100. **Natural Habitats OP/BP 4.04.** The proposed project does not encroach on any protected areas. However, this policy has been triggered because downstream impacts may affect a wetland, which is the Waza-Logone floodplain. There are three national parks (Waza, Kalamaloue, Mozogo goro) where poaching poses a management problem. However, none of these protected areas are close to the project site. In addition, given the current COVID-19 pandemic, the ESIA/ESMP identified and included measures to address the underlying causes of diseases with zoonotic origin in the project area of influence by targeting activities that reduce human-wildlife interaction and human-wildlife conflict.

101. **Forests OP/BP 4.36.** The project does not support commercial forest exploitation. However, given the Sahelian traits of the project area of influence with tree density and species decline, this policy is triggered because the ESIA/ESMP identified the felling of trees covering a total of about 2,000 hectares. As an illustration, 1,500 trees were cut down as part of the PULCI project.

102. **Pest Management OP 4.09.** Major interventions are planned to enhance agricultural and water productivity, and this may lead to an increased use of pesticides and other agrochemicals. Some residual pesticides may affect water courses downstream. Most of the watercourses and existing cultivable fields are infested with aquatic weeds. This creates breeding grounds for insect pests both for agriculture and public health, in addition to snails which serve as vectors for parasitic flukes of man and livestock. Neglected areas are likely to serve not only as seed bank from which seeds are easily dispersed over-and-over again to the fields, but their weed flora could also serve as temporary host for many field crop pests when the principal host crop is out of season. To address pest and pesticide issues, vectors, and their associated diseases, a PMP was prepared, consulted upon, and disclosed.

103. **Physical Cultural Resources OP/BP 4.11.** Previous studies in the region revealed local significant heritage places such as graveyards. Mitigation measures are incorporated into the disclosed ESIA/ESMP report. Contractors will be contractually required to develop a chance find procedure as part of their ESMP, at least 30 days in advance before commencement of works. A Cultural Resource Management Plan will be annexed to the ESMP regarding this matter.

104. **Projects on International Waterways OP/BP 7.50.** This policy is triggered because the Logone river is part of the Lake Chad basin with multiple implications upstream and downstream. The GoC notified the riparian countries before appraisal through the LCBC commission. The agreements within the Water Charter need to be respected.[21] A response was received from the LCBC, confirming a provisional no-objection on March 3, 2021 and a definitive one on July 14, 2021, to the project, and that other riparian countries have been informed of the project. The regional management approved the completion process on August 6, 2021. Thus, the riparian notification process has been completed.

105. **Safety of Dams OP/BP 4.37.** This policy is triggered because gravity-fed Maga area (SEMRY II) consisting of four irrigation schemes are supplied by water from the Maga dam. The 6.5 m high and 27 km long Maga embankment dam has recently been fully rehabilitated under the PULCI project with World Bank-funded support to ensure an acceptable standard of safety in accordance with Good International Industry Practice (GIIP). Works have been commissioned and the taking over certificate issued on May 28, 2020. In addition, SEMRY will continue operation and maintenance of the dam as defined in the O&M plan (*Manuel d'exploitation et maintenance de la digue de Maga, Avril* 2019) to ensure its long-term integrity and safe operation. Failure to maintain works properly may render the flood protective system inoperative during periods when protection is needed. As well, neglect of maintenance could mean significant capital expenditures in the future to rehabilitate a deteriorated structure. The O&M plan clearly defines the surveillance activities of the dam for both normal conditions and during floods. In order to keep the infrastructures secure and the populations safe, the following has been agreed: (i) the project will validate the ERP developed by PULCI for the 70 km of the Logone dike during Year 1; and (ii) the ERP for the 300 km along the Logone dike will be elaborated over the course of the project cycle. Regarding the EPP for the Maga dam: The project will elaborate an EPP in line with the ERP for the Logone dike, including a dam break analysis and inundation mapping, by Year 3. Finally, regarding security, the project will elaborate a "flood safety management plan" by the time the project starts.

[21] (i) limit total water withdrawal from the Lake Chad basin to 6 km3/year (presently water withdrawal is 2 km3/year); (ii) in the DS preserve the ecosystem and guarantee the availability of the resources for the people living along the river with a minimum water discharge of 22 m3/s in Bongor/Yagoua; and (iii) in the wet season, in order to sustain the function of floods in the wetlands, permit a minimum flow of 1,500 m3/s downstream of Bongor/Yagoua.

Social Safeguards

106. **Involuntary Resettlement of Populations OP/BP 4.12.** The implementation of the activities of Component 1 related to improvement of infrastructures and water management and some activities of Component 2 based on production and support to agricultural services trigger OP/BP 4.12 (Involuntary resettlement of populations); this will lead to both physical and economical resettlement. Regarding the physical displacement of families who will be affected by the rehabilitation works of the 18 km of the dike between Mourla-Tékélé, the construction of the crossing structures and the new pumping station n°4, the project will capitalize on experiences successfully implemented under the PULCI. Overall, it will be about rebuilding 339 units of huts (huts, kitchens, latrines) and 160 socio-community infrastructures (such as classrooms, shops, places of worship, smoking rooms, boreholes, merchant sheds). The economic resettlement is justified by temporarily economic displacements and loss of livelihoods. Regarding these economic losses due to the rehabilitation works, two compensation options will be retained, namely, Option 1: Financing of the operating accounts, i.e. 20 bags of paddy equivalent to FCFA 200,000 /plot and campaign, taking into account the activities of the rice value chain by directing the population towards related activities, such as breeding, fish farming, etc., or income-generating activities (crafts, petty trade, processing of agricultural products, etc.); and Option 2: Temporary jobs on worksites, giving priority to project-affected persons (PAPs) in recruiting unskilled and specialized labor of equal skill. This option will be implemented according to the terms of temporary employment on the following worksites: (a) rehabilitation of the perimeters; (b) revegetation of the Logone protection dike over 67 km from Yagoua to Pouss; (c) revegetation of the Logone protection dike over 21 km between Pouss and Tékélé; (d) revegetation of certain points of the Maga dam; and (e) enhancement of borrow pits operated by PULCI and/or development of borrow pits used by VIVA-Logone.

107. To mitigate this impact, the Government prepared a Social Assessment (SA) and a Resettlement Policy Framework (RPF) for the project. The GRM presented inside the ESMF will include in the RPF specific emphasis on the practical approach to be used to prevent and manage any eventual grievances link to resettlement process (including gender-based violence (GBV)/sexual exploitation and abuse (SEA)/ sexual harassment (SH)-related). The SA and RPF have been approved and disclosed by the World Bank on March 26th and March 23rd, 2021 as well as on the websites of MINEPAT and PULCI. By mutual agreement, the World Bank and the Government have adopted a principle of supporting people who will temporarily lose their livelihoods and, by extension, their income during the perimeter rehabilitation works. The affected people will be primarily recruited for work requiring high labor intensity (HIMO) such as planting trees in six municipalities (Maga, Vele, Kaï Kaï, Bogo, Yagoua, Maroua III), revegetation of the slopes of the Logone dike, riprap on the banks of the Logone and on the Maga dike as part of Component 1 relating to the Improvement of infrastructures and water management. This principle is based on the feedback from PULCI where the producers had not received compensation linked to the loss of two to three agricultural campaigns due to the rehabilitation works on the perimeters in Maga (lockers 2 and 3) and in Yagoua (SP4 and SP3). In terms of allocation of plots, the principle of SEMRY would be that the same owners be renewed on their respective plots in the perimeters once rehabilitated. However, for the sake of fairness and transparency, the World Bank and SEMRY have agreed that the list of beneficiaries and the list of operators of the plots within these perimeters will be updated when the RAPs will be carried out. The Subcomponent 2.1 related to E-vouchers for re-launching production in the irrigation perimeters offers additional opportunities to strengthen the support measures for producers who suffer economic losses during the works.

108. **Gender.** The project activities contribute to reducing identified gender gaps in terms of access to income generation opportunities for farmers, resources and assets, employment in public institutions, capacities, vulnerability to violence, and voice and decision-making in WUAs. The project gender approach will rely on tools

to promote equity and inclusion of vulnerable groups (women, widows, women heads of households, persons with disabilities, minority groups, etc.). Those approaches aim to reduce gender disparities by (i) specifically targeting women farmers for e-vouchers to enable them to purchase agricultural inputs, pay for land preparation services and irrigation and drainage service fees, thereby increasing their productivity, etc.; (ii) establishing favorable schemes for women under the business plans/matching grants component (higher subsidy); (iii) tailoring the services offered by the CGES (financial capacity building and other quality and affordable assistance) to the needs of women farmers; (iv) promoting women's leadership and representation in decision-making positions within WUAs through specific WUA constitutional provisions (such as membership criteria and quotas for female membership and leadership) as well as technical and leadership training for women; (v) raising awareness and capacity of farmers and community members (including SEMRY staff) on the benefits of gender equality, women participation and leadership; and (vi) regular and targeted consultations with women (in small groups with female facilitators) gathering their opinions about potential barriers and risks that women might face if taking leadership roles and suggestions on measures to reduce those barriers or risks. The progress on these actions will be monitored through a few indicators measuring the reduction in gender gaps in access to agricultural inputs and services, entrepreneurship, and leadership in WUAs.

109. **GBV.** The prevalence of physical and sexual violence in Cameroon is very high (55 percent of women in Cameroon reported ever experiencing violence, 54 percent in the Far North Province). As is the acceptance of the use of violence by husbands/partners - almost half of women (47 percent) think that men are justified for beating their wives, 38 percent of men share those views. Although 37 percent of survivors seek help, women most often seek support from family and friends and very rarely from specialized services. Available prevalence data is old (DHS 2011) and does not take into account the insecurity and violence that Cameroon experienced in the recent years. The SEA/SH risk assessment tool has been applied to the project and concluded that the project risk for SEA is "substantial." In accordance with the guidance outlined in the SEA/SH Good Practice Note, the project identifies and mitigates the risks of GBV and in particular SEA and SH through implementation of a number of measures, including hiring of a Gender/GBV expert, ensuring prohibition of SEA/SH is included in code of conduct signed by all personnel and workers linked to the project, adapting the project GRM to manage GBV/SEA/SH complaints in a confidential and survivor centers manner, while offering referral to GBV service providers for medical care, psycho-social assistance and/or legal aid, developing a comprehensive information campaign, capacity building for community members on GBV/SEA/SH risks, content of code of conduct, and ways to signal an abuse or misconduct.

110. **Citizens' engagement**. Citizens and civil society organizations (CSOs) are key partners in the planning and implementation of activities and will be involved in monitoring and assessing implementation. The project's focus on modernizing the irrigation sector broadly, and SEMRY specifically, calls for the engagement of citizens in the reform process. Modern institutions are characterized, among others, by a shift in attention to customers and broad-based engagement by a range of stakeholders, particularly those that are more vulnerable to exclusion. In restructuring SEMRY, the project will consider introducing customer-facing systems that enable a two-way interface between beneficiaries and government. Citizens will be involved in all areas of the project. For instance, involving citizens in water governance, such as in O&M of the irrigation management that will be transferred to them via the WUAs, has been shown to empower citizens and foster accountability from the government. The project's proposal to establish a water resources monitoring network and information system to monitor hydro and weather data will benefit from involving citizens in contributing local-level data and participate in problem solving. In addition, the Organizational Management Support Centers that the project proposes to create, will be strengthened by enabling users to provide feedback (e.g. through score-cards, satisfaction surveys, social audits). Women will be specifically targeted in the citizen engagement activities

through separate consultations in small groups, facilitated by a woman, to ensure that the activities of the project are fully accessible to them and that they don't create negative impacts for them. Those consultations will also be used to identify any risks women run while taking part in project activities and ways on how to best mitigate them, as well as to assess whether the GRM developed by the project is accessible and safe to women and responds to the needs of anyone affected by GBV or SEA/SH. Finally, citizen's engagement will also be monitored with a particular index on the degree of stakeholder consultations at the local level, including for example the Regional Technical Monitoring Group (twice a year) as well as a wide range of local consultation seeking participation and inclusion from local population.

111. **Institutional Arrangement for Safeguards Management.** SEMRY will be implementing the project, and as a result, they will be responsible also for compliance with the related E&S safeguards. SEMRY does not have a dedicated Safeguards Unit, and the PIU will recruit a social and an environmental specialist. SEMRY will need capacity building to strengthen its management and monitoring of occupational safety risks, E&S risks, and impacts related to the rehabilitation of the irrigation schemes. This capacity building will be ongoing and monitored by the World Bank.

112. **Contractors entrusted with works and their sub-contractors will be subject to OHS contractual provisions and industry standards,** which will match the scope of works and address aspects such as: construction site maintenance; worker accommodation; management of access roads, including security and access, as well as fuel storage area, workshop, warehouse; ongoing training for all workers; sanctions and penalties to address E&S non-conformities and late payment of wages; adequate meals; site safety plans; internal and external GRMs; documented internal work regulations, including conditions for overtime pay; medical evacuation; reporting (monthly, quarterly including accident statistics, workers grievances and social security contributions, etc.); preparation and approval of site-specific EMSPs; etc. The Owner's Engineers (OEs) to be contracted by the PIU will ensure that execution of works by contractors comply with established environmental, health, and safety (EHS) contractual requirements and the OEs' may be required to hire EHS and social development specialists to monitor contractors' EHS performance.

113. **Rice farmers, WUAs, and other beneficiaries.** Rice farmers and WUAs may have inadequate capacity to effectively implement the ESMF requirements under Component 1 and mitigation measures included in the ESIA/ESMPs for Component 2. An OHS, and social focal point will be proposed by each WUA. Designated focal points responsible in the long run for implementing the environment, health workplace safety, and social requirements in the cultivable fields and during postharvest activities, will attend training on ESMF/ESMP implementation and good practices for the protection of the environment, including water, energy, soil health, biodiversity and pest ecology management, and to manage grievances and GBV issues. In addition, the project will provide farmers with training and TA.

114. **Cameroon has an existing institutional structure overseeing E&S safeguards**, notably including MINEPDED and other sector ministries (Ministry of Domain, Cadastral and Land Registration Affairs; Ministry of Public Health; MINEE, etc.), which are responsible for approving ESIAs. The country also has a comprehensive environmental legal framework, including the 1996 Environmental Law and its implementation decrees. Any project for which an environmental assessment is carried out is subject to the administrative and technical supervision of the relevant authorities, which focus especially on the effective implementation of the ESMP included in the ESIA. The Order No 0010/MINEP of April 3, 2013, requires that Committees are set up in each concerned Division of the country for the technical and administrative supervision of ESMPs. The compensation to PAPs must be completed prior to works start in their respective irrigation schemes. However, these committees are mostly not operational as they lack adequate financing, and they are not fully integrated into the Ministry's planning process. The project will bear the costs associated with the operation of the different

Divisional Committees in charge of monitoring ESMPs in the project areas, which will be better known once full ESIA/RAPs have been prepared and arrangements are made concerning the functioning of such Committees.

115. There is an existing institutional setup, which has familiarity with World Bank safeguards requirements. The environmental specialist and the sociologist of the current PIU will then be the immediate and core responsible persons for ensuring good E&S performance. However, to promote a mid- and long-term management of E&S issues associated with the improvements of irrigation, drainage infrastructure and smart climate agriculture, E&S functions will be mainstreamed into SEMRY functional organigram; a SEMRY Environment & Social department would be established.

Grievance Redress Mechanisms

116. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance 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 Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

V. KEY RISKS

117. **The project's overall risk rating is Substantial**. Political and governance risks, macroeconomic risks, and E&S risks are assessed as High. Several other risks are considered Substantial, including sector strategies and policies, institutional capacity for implementation and sustainability, fiduciary, and stakeholders. Technical design of the project and other risks are assessed as Moderate.

118. **Political and governance risks are High,** including given the challenging security situation in the North as well as the Western part of the country. There are further risks from weak Government capacities as well as national party politics, given some observed radicalization of the political process. Elite capture may increase these risks. The PIM specifies who is eligible and who is not be eligible to receive project support (e.g. Government officials and their kin will not be eligible), and that names of all beneficiaries of matching grants and vouchers will be published.

119. **Macroeconomic risk is rated Substantial**. The medium-term outlook is extremely challenging as the COVID-19 pandemic deteriorates global and regional economic environments and has resulted in a large decrease in the price of oil. A further unanticipated widening of the fiscal deficit would put pressure on the Government to reduce spending on key programs in sectors such as agriculture, health, and education. Security operations on the borders and in North West and South West are expected to drive public expenditure up. The Bank also financed, in September 2020, the Cameroon COVID-19 Preparedness and Response Project using a multiphase programmatic approach (MPA).

120. **Risks related to Sector Strategy and Policy are rated as Substantial.** Reasons for the existing risks include absent, weak, and/or contradictory legislation and regulations, along with various distortions, including excessive government involvement in production activities, which have limited private sector development. **A**

central issue for project success is that there is no specific legal framework for the creation of WUAs, which are to be responsible initially for tertiary canals of the project and later also for the entire scheme. As a mitigation measure to reduce the risk from High to Substantial is a Development Policy Letter with specific proposed, actions to be undertaken, supported also via an expected DPO. Furthermore, the Scheme Management Code has been elaborated during preparation, and its validation is expected as a disbursement condition for Subcomponent 1.2. **A second key problem under this risk category relates to land tenure and allocation of State land.** One land issue risk is linked to a lack of transparency or misunderstanding about the process on land management in the irrigation scheme. So far, people have been given a certificate of attribution to work in the State land. The project will rehabilitate an existing irrigation scheme to make it more efficient; thus, the project will have to manage with a pre-existing situation; from a land tenure point of view, this could be more challenging than setting up a new irrigation scheme. Another risk is of deepening the already existing gender gap if the needs of women farmers are not identified, analyzed, and addressed both in terms of women's full participation in project activities but also in mitigation of any risks of GBV or sexual exploitation, abuse or harassment, often used in attempts to maintain the status quo when women's social and financial situation improves. A gender action plan, including mitigation measures against SEA/SH risks, will be developed and monitored by the PIU Gender Specialist during project implementation to ensure the risks are minimized. A further risk, not uncommon, is regarding a potential elite capture during or after the project in the project area. Elite capture has already been identified as an issue and specific actions need to be undertaken to mitigate it. **Subsequently, some experiences exist with matching grants and vouchers; nevertheless, there will be challenges to its effective, fair implementation;** therefore, an Agri-finance Specialist will need to be recruited into the PIU to help manage this.

121. **Technical design of the project is assessed as Moderate.** The infrastructures already exist, the rehabilitation contract is to be done in one bid document with two lots; so it is rather straightforward. On the other hand, the implementation of the transformational plan of SEMRY and the transfer of responsibilities to WUAs, the privatization process, and the provision of vouchers and matching grants will be more challenging. Mitigation actions include a clear execution manual in general and also for Component 2, including a consulting service for supporting its implementation. A special emphasis will need to be placed also on awareness and communication with involvement of local authorities in the process of preparation and implementation of the project.

122. **Risks related to Institutional Capacity for Implementation and Sustainability are assessed as Substantial.** Institutional capacities for project implementation are weak; therefore, the project will use a PIU and also support a transformation plan for SEMRY. In order to mitigate these risks, the transformation plan and a new draft Statute were elaborated and approved before negotiations. The transformation plan will have an implementation of five years with clear milestones that easily can be monitored and also reviewed at mid-term, if necessary. There is further a risk that financial institutions may have difficulties to lend if business plans are not prepared well and also given their limited access to long-term resources which are necessary to on-lend for investments, along with the matching grants. Other specific risks and proposed mitigation measures are as follows: The lack of reliable data may limit information on project performance during implementation; a MES would therefore be established to improve data collection (including for gender) during project implementation. To mitigate the risk related to the Partner Financial Institutions (PFIs), the project will work with financial institutions which are stable and preferably have some experience with funding under a matching grant approach.

123. **Fiduciary risk is rated Substantial.** An FM assessment was conducted at SEMRY. The assessment concluded that the FM overall residual risk is deemed Substantial. This is due mainly to the complexity of the

project, which includes the implementation of the Scheme Management Code and National Water Code being prepared by the Government, based on consistent legal and institutional framework amendments. In addition, the project will implement an e-voucher mechanism and a matching grants mechanism. The project will therefore operate in a quite new water sector organization with many new/reorganized entities (WUAs, Special Committees, producers' organizations and cooperatives, private sector, etc.). It also incorporates PBCs under Subcomponent 3.1. Related risks are attenuated by some experience gained by SEMRY in managing World Bank operations with the implementation of the PULCI, and the fact that the PIU to be set up will largely benefit from the PULCI. The assessment was performed in accordance with the Directives and Policy for IPF, the World Bank Guidance on FM in World Bank IPF Operations issued on February 28, 2017, and the guiding principles in risk assessment issued in April 2020. In so doing, the team went beyond the Borrowers' knowledge of the World Bank's fiduciary rules to focus more on lessons learned considering their track record in implementing previous World Bank-financed similar operations. The proposed mitigation measures aim to reduce the likelihood and/or impact of the identified risks.

124. **An assessment of the capacity of the PIU to implement procurement activities of the project was carried out**. The overall procurement risk is High, but after the proposed mitigation measures have been implemented, the remaining risk will be reduced to Substantial. These measures include: (a) hire, on a competitive basis, a procurement specialist who is experienced and familiar with World Bank procurement procedures and policies, to be located within the PIU. If this requirement is not met within six months after effectiveness of the project, the Procurement Specialist hired by the project during the preparation phase will support procurement activities until the procurement specialist for the PIU is recruited; (b) train all procurement staff on the NPF; (c) develop and adopt by no later than two months after effectiveness, a Procedures Manual (Administration, Finance, and Accounting) to clarify roles for each team member involved in the procurement process, and define the maximum delay for each procurement stage, specifically with regard to review and approval systems, and the signing of contracts (see Annex 1 for other mitigation measures); (d) set a special tender board for the project in line with Cameroon's procurement regulations to oversee review of procurement documents, request for quotations, request for proposals, request for bids, evaluation reports, and drafting of contracts; and (e) improve the filing system at the PIU level to ensure compliance with World Bank procurement filing manual.

125. **E&S risks are High**. The overall E&S risks are rated High, given the scale of efforts (12,210 hectares of irrigation schemes to be rehabilitated) to be undertaken. According to the findings of the ESIA/ESMP, the main potential environmental risks of the project are related to changes to soil characteristics from the use of inorganic chemicals; along with the quality of the water and in light of COVID-19 prevalence of migrant workers who will likely pose an increased risk of accelerated contagion; health and safety risks for workers and neighboring populations; etc. The major social risk of the project could be linked to the lack of transparency and use of the parcels in the rehabilitated irrigation schemes. During the last years only approximately 10,000 ha were used, while the rehabilitation will increase this to 12,210 ha. The RAP has identified 14,583 PAPs, yet some parcels did not receive water during the last years. It will be important to update the GIS of the eight (8) irrigation schemes and the attribution list of the users.

126. **Additional risks related to climatic extremes:** floods (especially in Maga) and drought (especially in Yagoua) as well as an increased risk of flooding downstream of the protected area. Before and during harvest times, there are sometimes birds, insects, etc., that can significantly impact the yields. These potential environmental risks and impacts are likely to be permanent, transboundary, cumulative, and irreversible; thus, the project is categorized as A (full assessment).

127. To mitigate the above-mentioned potential risks, a number of safeguards instruments have been prepared (ESMF, ESIA/ESMP, PMP, etc.) and the hydraulic and hydrological study of the Logone basin, together with the EPP of Maga dam, will be undertaken.

128. Even though experience and capacity for designing and implementing E&S safeguards measures have been acquired from the PULCI project, the GoC has capacity limitations and might not satisfactorily ensure a thorough safeguards compliance monitoring. To ensure that GoC and WBG's E&S safeguard standards are met, the World Bank team has included resources for the recruitment of two safeguards specialists as well as the costs associated with the operation of the different Divisional Committees in charge of monitoring ESMPs in the project areas.

129. **Stakeholder risk is Moderate**, given the numerous actors engaged at the national, regional, and local levels both within Government, in the private sector, and with NGOs. This will be mitigated with the project's coordination, communication, and institutional development efforts, as well as the participatory approach with the establishment of a PIU in Yagoua. A Regional Technical Monitoring Group is organized for supporting stakeholders in the process in the Far-North, support to the LCBC, and is also planned at a regional level between Cameroon and Chad.

130. **Other risks**: Health. The risk related to the spread of COVID-19 is considered Substantial for the Logone valley area. The project will need to carefully follow this and take remedial actions where feasible. More generally, it is important to move forward with the national COVID-19 vaccination program supported also by the World Bank.

VI. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Cameroon

Valorization of Investments in the Valley of the Logone

Project Development Objectives(s)

To improve irrigation and drainage services and agricultural production in the irrigated areas of the Logone Valley

Project Development Objective Indicators

Indicator Name	PBC	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
to improve irrigation and drainage services and agricultural production in the irrigated areas of th									
Cropping intensity of developed perimeters (hectares harvested per year/hectares equipped for irrigation) (Number)		0.80	0.80	0.80	1.00	1.20	1.50	1.80	1.80
Area provided with improved irrigation and drainage services (hectares); (core indicator) (Hectare(Ha))		0.00	0.00	0.00	8,123.00	9,807.00	12,210.00	12,210.00	12,210.00
Area prepared by (harrowed/ploughed) by the farmers or a private provider (ha/year) (Hectare(Ha))		700.00	700.00	1,500.00	3,200.00	8,300.00	14,600.00	17,500.00	17,500.00

Indicator Name	PBC	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
Agricultural production (rice) in the area (tons per year) (Tones/year)		50,000.00	50,000.00	50,000.00	50,000.00	85,000.00	100,000.00	115,000.00	115,000.00
Direct beneficiaries (number) (Number)		0.00	100.00	1,210.00	19,000.00	24,000.00	29,100.00	30,000.00	30,000.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
Component 1: Improvement of Infrastructures and Water Management									
Hydromet stations functioning improving climate change monitoring (Number)		3.00	3.00	3.00	10.00	10.00	10.00	10.00	10.00
Increase in linear corridor flood alert system (km) (Kilometers)		70.00	70.00	70.00	150.00	250.00	300.00	300.00	300.00
Irrigation scheme management transferred to water user associations (hectares) (Hectare(Ha))		0.00	0.00	0.00	8,123.00	9,807.00	12,210.00	12,210.00	12,210.00
Operational WUAs (Number)		0.00	0.00	0.00	4.00	6.00	8.00	8.00	8.00
Women in decision-making positions in WUAs (Number)		0.00	0.00	0.00	10.00	15.00	20.00	20.00	20.00

Indicator Name	PBC	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
Component 2: Production and Support to Agricultural Services									
Farmers reached with e-voucher program (Number)		0.00	0.00	0.00	16,246.00	19,614.00	24,420.00	24,420.00	24,420.00
Amounts of total vouchers (US$ million) of which females at least 30 percent (Amount(USD))		0.00	0.00	0.00	5.60	1.20	1.60	0.00	8.40
Of which females(US$ million); at least 30 percent (Amount(USD))		0.00	0.00	0.00	1.70	0.30	0.50		2.50
Business plans financed (Number)		0.00	0.00	640.00	1,550.00	2,474.00	2,490.00	2,490.00	2,490.00
of which business plans of female entrepreneurs/farmers (Number)		0.00	0.00	270.00	651.00	1,039.00	1,046.00	1,046.00	1,046.00
Total amount of business plans financed (US$ million) (Amount(USD))		0.00	0.00	0.85	2.70	4.75	5.20	5.20	5.20
of which for female farmers/groups (Amount(USD))		0.00	0.00	2.70	0.67	0.89	1.07	1.07	1.07
Irrigation area diversified (hectares) (Hectare(Ha))		0.00	0.00	100.00	300.00	500.00	800.00	1,000.00	1,000.00
Organizations subscribed to the CGER (Number)		0.00	0.00	10.00	25.00	35.00	45.00	50.00	50.00
Component 3: Capacity Building and Implementation									
A "new SEMRY" operational based on the	PBC 1, 2,	New SEMRY not operational							New SEMRY fully operational

Indicator Name	PBC	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
implementation of the transformational plan (based on PBCs) (Text)	3, 4, 5, 6, 7, 8, 9								
Beneficiaries having received training (Number)		0.00	100.00	410.00	825.00	1,240.00	1,650.00	2,050.00	2,050.00
Beneficiaries having received training at the Innovation Training Center (females at least 30 percent) (Number)		0.00	50.00	200.00	400.00	600.00	800.00	1,000.00	1,000.00
Beneficiaries having received training at technical and vocational levels (females at least 30 percent) (Number)		0.00	50.00	200.00	400.00	600.00	800.00	1,000.00	1,000.00
Beneficiaries having received training at higher education level (females at least 30 percent) (Number)		0.00	0.00	10.00	25.00	40.00	50.00	50.00	50.00
Citizen engagement indicator: Stakeholder and citizen participation in the Steering Committee and Regional Technical Group (Number)		0.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Grievances received and addressed within the specified GRM timeframe		0.00	75.00	80.00	85.00	85.00	90.00	90.00	90.00

Indicator Name	PBC	Baseline	Intermediate Targets						End Target
			1	2	3	4	5	6	
(Percentage)									

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Cropping intensity of developed perimeters (hectares harvested per year/hectares equipped for irrigation)	Annually harvested area divided by irrigated area	Yearly	PIU progress reports	Yearly surveys administered with representative sample of targeted project beneficiaries	PIU
Area provided with improved irrigation and drainage services (hectares); (core indicator)	This indicator measures the command areas that have legally been transferred to WUAs	Yearly	PIU progress reports	As transfers to WUAs involve legal documents, the total areas transferred are known to the PIU.	PIU
Area prepared by (harrowed/ploughed) by the farmers or a private provider (ha/year)	This indicator measures the extent to which farmers or private sector enterprises have prepared and seeded rice and/or other crops	Yearly	PIU progress reports	Yearly surveys administrated with representative sample of targeted project beneficiaries	PIU

Agricultural production (rice) in the area (tons per year)	This indicator estimates the total quantity of agricultural production	Yearly	PIU progress reports	Yearly surveys administrated with representative sample of targeted project beneficiaries	PIU
Direct beneficiaries (number)	This indicator measures the direct beneficiaries from irrigation and drainage services	Yearly	PIU progress report	Yearly estimates	PIU

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Hydromet stations functioning improving climate change monitoring	Hydromet stations measuring water quality, water quantity, rain, etc.	Yearly	PIU progress reports	Yearly assessment	PIU
Increase in linear corridor flood alert system (km)	Warning system ahead of rising water levels above certain thresholds	Yearly	PIU progress reports	Yearly assessment	PIU
Irrigation scheme management transferred to water user associations (hectares)	Project-financed irrigation and drainage	Yearly	PIU progress reports	Yearly assessment	PIU
Operational WUAs	Number of fully operational WUAs	Yearly	PIU progress reports	Yearly assessment	PIU
Women in decision-making positions in WUAs	Number of women on key management committee	Yearly	PIU progress reports	Yearly assessment	PIU

Farmers reached with e-voucher program	Number of farmers benefitting from e-vouchers	Yearly	PIU progress reports	Yearly assessment	PIU
Amounts of total vouchers (US$ million) of which females at least 30 percent	Value of distributed and received e-vouchers	Yearly	PIU progress reports	Yearly assessment	
Of which females(US$ million); at least 30 percent	PIU progress reports	Yearly	PIU progress reports	Yearly assessment	PIU
Business plans financed		Yearly	PIU progress reports	Yearly assessment	PIU
of which business plans of female entrepreneurs/farmers		Yearly	PIU progress reports	Yearly assessment	PIU
Total amount of business plans financed (US$ million)		Yearly	PIU progress reports	Yearly assessment	PIU
of which for female farmers/groups					
Irrigation area diversified (hectares)		Yearly	PIU progress reports	Yearly assessment	PIU
Organizations subscribed to the CGER	Differentiate by type of organization	Yearly	PIU progress reports	Yearly assessment	PIU
A "new SEMRY" operational based on the implementation of the transformational plan (based on PBCs)	The "new SEMRY" statute has been adopted with new organization and governance structure by the Recipient. Irrigation management has been	Semester	PSC progress reports	The IVA will verify progress towards achievement of intermediate target. Since this Indicator is related to PBCs 1-5,	PIU

	transferred to the WUA, land preparation service and rice commercialization/transformation transferred to the private sector. This indicator will be monitored using the 5 PBCs.			more detail about the verification protocols could be found the correspondent annex.	
Beneficiaries having received training	Number of trainees in all the educational centers	Yearly	PIU progress reports	Yearly assessment	PIU
Beneficiaries having received training at the Innovation Training Center (females at least 30 percent)		Yearly	PIU progress reports	Yearly assessment	PIU
Beneficiaries having received training at technical and vocational levels (females at least 30 percent)		Yearly	PIU progress reports	Yearly assessment	PIU
Beneficiaries having received training at higher education level (females at least 30 percent)		Yearly	PIU progress reports	Yearly assessment	PIU
Citizen engagement indicator: Stakeholder and citizen participation in the Steering Committee and Regional Technical Group	This indicator measures the degree of citizen engagement in general, and particularly stakeholder participation, in the project. Widespread local particpation of the stakeholders (WUAs, farmers, beneficiaries, etc) will be promoted in the Steering Committee and Regional Technical	Yearly	PIU progress report	Yearly assessment	PIU

	Monitoring group. These two groups meet at least twice per year (each of them) so this would make the total of 4 in the results framework. In addition, there will be regular consultations with stakeholders and women by the GBV NGO or GBV expert (the frequency of those is still to be determined).				
Grievances received and addressed within the specified GRM timeframe					

Performance-Based Conditions Matrix

PBC 1	SEMRY approves the amendments of its Statute.			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Text	500,000.00	0.25
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Inadequate SEMRY organizational and governance structure			
1st year	PBC1.1. SEMRY's has amended and approved its statute to include, inter alia, the setting up of sound governance arrangements that foster		125,000.00	New Statute of SEMRY under terms and conditions of the PIM approved.

	accountability and professionalism, the revision of its organizational structure, the application of new approaches of irrigation management, and promotion of private sector participation for land preparation and rice commercialization/transformation, under terms and conditions described in the PIM.		
2nd year	PBC#1.2: MINADER has concurred and approved SEMRY's amended statute referred to in PBC#1.1, all under terms and conditions described in PIM.	125,000.00	New Statute of SEMRY under terms and conditions of the PIM approved.
3rd year	PBC#1.3: The Recipient has adopted and published a decree approving SEMRY's amended statute, all under terms and conditions described in the PIM.	250,000.00	New Statute of SEMRY under terms and conditions of the PIM approved.
4th year	New Statute under terms and conditions of the PIM approved	0.00	New Statute of SEMRY under terms and conditions of the PIM approved.
5th year	New Statute under terms and conditions of the PIM approved	0.00	New Statute of SEMRY under terms and conditions of the PIM approved.

PBC 2	Regularization and update of the SEMRY's land tenure titles.			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Text	500,000.00	0.25
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Land title of SEMRY is outdated (1980s)			
1st year	Land title of SEMRY is outdated (1980s)		0.00	New land title is issued. .

2nd year	The Minister of State Property, Surveys and Land Tenure (MINDCAF) has adopted and published an Arrêté, or equivalent administrative act, incorporating into the private domain of the State the irrigation schemes and facilities in the selected areas of Yagoua and Maga ,all under terms and conditions described in the PIM.	500,000.00	New land title is issued.
3rd year	SEMRY's land tenure title updated	0.00	New land title is issued.
4th year	SEMRY's land tenure title updated.	0.00	New land title is issued.
5th year	SEMRY's land tenure title updated.	0.00	New land title is issued.

PBC 3	Land preparation services, irrigation service fees, and SEMRY's fees are separated effectively.			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Text	500,000.00	0.25
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	All fees (irrigation service, land preparation, and training&support) are merged into 1 creating confusion.			
1st year	SEMRY has adopted a decision approving that SEMRY will no longer collect Land Preparation Fees and that the remaining fees to be collected are separated as follows: (i) an annual training and support fee to be collected by SEMRY, and (ii) an irrigation and drainage fee to be collected by each WUA, all under terms and conditions		500,000.00	SEMRY has issued a decision, or equivalent administrative act, approving the separation of land and irrigation service fees into

	described in the PIM.		
2nd year	Fees continue separated: one for SEMRY, one for WUA and land preparation (harrowing) services.	0.00	Regulation for fee separation issued.
3rd year	Fees continue separated: one for SEMRY, one for WUA and land preparation (harrowing) services.	0.00	Regulation for fee separation issued.
4th year	Fees continue separated: one for SEMRY, one for WUA and land preparation (harrowing) services.	0.00	Regulation for fee separation issued.
5th year	Fees continue separated: one for SEMRY, one for WUA and land preparation (harrowing) services.	0.00	Regulation for fee separation issued.

PBC 4	SEMRY implements the decision adopted under PBC#3 and improves collection rate of their fees			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	Yes	Amount(USD)	1,000,000.00	0.50
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	1,500,000.00			
1st year	600,000.00		300,000.00	(0.50*amount collected by SEMRY)
2nd year	600,000.00		300,000.00	(0.50*amount collected by SEMRY)
3rd year	620,000.00		236,000.00	(0.38*amount collected by SEMRY)
4th year	570,000.00		114,000.00	(0.20*amount collected by SEMRY)
5th year	500,000.00		50,000.00	(0.10*amount collected by SEMRY)

PBC 5	Each of the 8 WUAs collects irrigation service fees.			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	Yes	Amount(USD)	500,000.00	0.50
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	0.00			
1st year	300,000.00		75,000.00	(0.25*amount of water fees recovered by the WUAs)
2nd year	300,000.00		75,000.00	(0.25*amount of water fees recovered by the WUAs)
3rd year	1,000,000.00		100,000.00	(0.1*amount of water fees recovered by the WUAs)
4th year	1,500,000.00		120,000.00	(0.08*amount of water fees recovered by the WUAs)
5th year	2,000,000.00		130,000.00	(0.065*amount of water fees recovered by the WUAs)

PBC 6	Effective transfer of the management of the 8 rehabilitated irrigation schemes, between SEMRY and each of the 8 WUA			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	Yes	Text	1,500,000.00	1.00
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	No transfer exists. Irrigation & Drainage Management done by SEMRY.			

1st year	No transfer exists. Irrigation & Drainage Management done by SEMRY.	0.00	125 US$ per hectare transferred
2nd year	No transfer exists. Irrigation & Drainage Management done by SEMRY.	0.00	125 US$ per hectare transferred
3rd year	4 Irrigation schemes completely transferred: Maga West, Maga East, SP3 and SP4. Approximately 8,123.5 ha	1,000,000.00	125 US$ per hectare transferred
4th year	6 Irrigation schemes completely transferred. 4 of previous year plus Pouss and SP1 (1,684.2 additional ha)	200,000.00	125 US$ per hectare transferred
5th year	8 Irrigation schemes completely transferred: 6 of previous year plus Guirvidig and SP2 (additional 2,402.3 ha)	300,000.00	125 US$ per hectare transferred

PBC 7	Developed and conducted Annual performance evaluation on the implementation of the Scheme Management Code in the 8 rehabilitated irrigation schemes			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Text	500,000.00	0.25
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	Not implemented			
1st year	For each 1% satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to USD 1000 may be made available for withdrawal by		100,000.00	Scheme Management Code implemented

	the Recipient, up to the total amount allocated to the PBC#7, all under terms and conditions described in the PIM.		
2nd year	For each 1% satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to USD 1000 may be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#7, all under terms and conditions described in the PIM.	100,000.00	Scheme Management Code implemented
3rd year	For each 1% satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to USD 1000 may be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#7, all under terms and conditions described in the PIM.	100,000.00	Scheme Management Code implemented
4th year	For each 1% satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to USD 1000 may be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#7, all under terms and conditions described in the PIM.	100,000.00	Scheme Management Code implemented
5th year	For each 1% satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to USD 1000 may be made available for withdrawal by	100,000.00	Scheme Management Code implemented

	the Recipient, up to the total amount allocated to the PBC#7, all under terms and conditions described in the PIM.			
PBC 8	Implementation of SEMRY's Social plan			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	Yes	Text	500,000.00	0.25
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	0.00			
1st year	The social plan elaborated has 8 phases. An amount corresponding to USD 62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.		100,000.00	US$62,500 per phase implementation of social plan.
2nd year	The social plan elaborated has 8 phases. An amount corresponding to USD 62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.		100,000.00	US$62,500 per phase implementation of social plan.
3rd year	The social plan elaborated has 8 phases. An amount corresponding to USD 62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms		100,000.00	US$62,500 per phase implementation of social plan.

	and conditions described in the PIM.		
4th year	The social plan elaborated has 8 phases. An amount corresponding to USD 62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.	100,000.00	US$62,500 per phase implementation of social plan.
5th year	The social plan elaborated has 8 phases. An amount corresponding to USD 62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.	100,000.00	US$62,500 per phase implementation of social plan.

PBC 9	SEMRY has approved the transfer of processing and commercialization activities to the private sector.			
Type of PBC	**Scalability**	**Unit of Measure**	**Total Allocated Amount (USD)**	**As % of Total Financing Amount**
Output	No	Yes/No	500,000.00	
Period	**Value**		**Allocated Amount (USD)**	**Formula**
Baseline	No			
1st year	No		0.00	PPP contract signed (Y/N)
2nd year	No		0.00	PPP contract signed (Y/N)
3rd year	Yes		500,000.00	PPP contract signed (Y/N)
4th year	Yes		0.00	PPP contract signed (Y/N)

5th year	Yes	0.00	PPP contract signed (Y/N)

Verification Protocol Table: Performance-Based Conditions	
PBC 1	SEMRY approves the amendments of its Statute.
Description	To support (i) the setting up of sound governance arrangements that foster accountability and professionalism on the part of SEMRY and (ii) the application of the new approaches (transfer of irrigation management to WUAs and promotion of private sector participation for land preparation and rice commercialization/transformation), this PBC will disburse the set amount upon verification that the new Statute that has been revised and approve. It is anticipated that this will: (i) ensure the adoption of the new Statue of SEMRY under the terms and conditions approved by the Project Implementation Manual (PIM). This will be done in three stages: (i) Board of Semry send new Statue to MINADER (ii) MINADER sends the new Statute to the Prime Minister's Office; and (ii) President approves new Statute.
Data source/ Agency	SEMRY/MINADER/Decree from Presidential Office
Verification Entity	IVA
Procedure	Verification protocols to be implemented by the IVA: New Statute approved and adopted. The elaboration and approval of the new Statute shall include a confirmation or modification of SEMRY governance set-up, its managerial and operational structure, staff selection procedures for high-level decision-making and mid-level technical positions. The assessment of the organization and governance arrangements follow the recommendations elaborated in the transformational plan of SEMRY with the following five documents: (1) Organizational structure revised; (2) Transfer services to private sector. (3) New organogram and Board composition. (4) Social plan. (5) Transformational Plan.
PBC 2	Regularization and update of the SEMRY's land tenure titles.
Description	SEMRY does not have a formal title relating to the land in the irrigation schemes and other land under its control. The land was transferred into the private domain of the State in on the basis of a declaration of public utility (DUP) dated 15 January 1971. However, the next necessary step in the process, the issuance of a land title was never completed. Logically therefore

	as SEMRY does not have a clear legal title to the land which means in turn that it could not and still cannot confer any kind of clear legal rights (in the form say of a usufruct right) upon the farmers. Moreover, the DUP pre-dates the current legal framework for land tenure in Cameroon which is essentially contained in two Ordinances adopted in 1974. This means that the land tenure legislation applicable in 1971 was the former colonial legislation then still in force. The next step is for SEMRY to complete the process begun in 1971 by acquiring a formal land title. Land title will be issued based on the national legislation.
Data source/ Agency	The Minister of State Property, Surveys and Land Tenure (MINDCAF) issues a new title for SEMRY.
Verification Entity	IVA
Procedure	A formal process needs to be followed until MINDCAF can issue the new updated titles. The procedure is as follows: 1. First of all, on the basis of the DUP SEMRY must formally request the departmental offices of the Ministère des Domaines, du Cadastre et des Affaires Foncières (MINDCAF) of the Mayo Danay department to transform the DUP into a land title. 2. This must be accompanied by payment of the relevant fee. 3. On re ceipt of this request the departmental office of MINDCAF must undertake a topographical and cadastral survey for which the fee is calculated in accordance with the area to be registered (Loi de finance 1990/91). 4. On the basis of the surve y, the departmental office of MINDCAF will prepare a detailed plan that must be signed by the signature of the office chief. 5. &nb sp; The file is then sent to the regional service, accompanied by the relevant fee, for verification and publication in the Bulletin of Domanial Advices. 6. If there are no objections within a stipulated period t he file is sent to the conservateur foncier for the procedures of issuing the land title, again accompanied by the appropriate fee.
PBC 3	Land preparation services, irrigation service fees, and SEMRY's fees are separated effectively.
Description	SEMRY has adopted a decision approving that SEMRY will no longer collect Land Preparation Fees and that the remaining fees to be collected are separated as follows: (i) an annual training and support fee to be collected by SEMRY, and (ii) an irrigation and drainage fee to be collected by each WUA, all under terms and conditions described in the PIM. Farmers will be able to choose how to do land preparation services.
Data source/ Agency	SEMRY
Verification Entity	IVA

Procedure	Verification of SEMRY's decision.
PBC 4	SEMRY implements the decision adopted under PBC#3 and improves collection rate of their fees
Description	This PBC refers to the fee collected by SEMRY (part of their support to farmers and land). It (i) encourages SEMRY as their fee diminishes in the process (from 52.500 FCFA per ha before project, to 18.000 FCFA/ha in the co-management period and 5.000 FCFA per ha after transfer) and (ii) promotes increasing collection rate by supporting their fee recovery on a gradual decreasing basis over 5 years.
Data source/ Agency	Annual Audit of SEMRY
Verification Entity	IVA
Procedure	The fee in the period prior to the project was 52,500 FCFA per parcel of half hectare . The transfer will be done in 2 phases: 1. Co-management period. As soon as project is approved and PBC3 (split of fees) is effective; and 2. Complete transfer: once each of the 8 irrigation schemes will be rehabilitated, a complete transfer will be done. The agreed fee for SEMRY is (i) 18,000 FCFA per parcel in the co-management period; and (ii) 5,000 FCFA per parcel once the transfer is complete. The objective of this PBC is to support SEMRY in fee collection aspects as it will drop dramatically considering "their amount" has been cut by approx. 10%, from 52,500 to 5,000 FCFA per parcel.
PBC 5	Each of the 8 WUAs collects irrigation service fees.
Description	This PCB describes the amount of irrigation service fee recovered by the WUA. This is support to each of the 8 WUAs (not to SEMRY) for their gradual uptake and stimulation of fee recovery.
Data source/ Agency	Annual audit of the 8 WUAs
Verification Entity	IVA
Procedure	The fee in the period prior to the project was 52,500 FCFA per parcel of half hectare. As a result of the transformation of SEMRY, it is planned to split the fee into 3 parts: (i) SEMRY fee for land allocation and general support to farmers.

	(ii) WUA fee for irrigation and drainage services. . (iii) The third part which corresponds to land preparation (ploughing and harrowing), the farmers will manage at their own discretion. The transfer will be done in 2 phases: i. Co-management period. As soon as project is approved and PBC3 (split of fees) is effective; and ii. Complete transfer: once each of the 8 irrigation schemes will be rehabilitated, a complete transfer will be done. The irrigation and drainage service fee for the WUAs is: (i) 9,000 FCFA per parcel in the co-management period; and (ii) 22,500 FCFA per parcel after transfer. The objective of this PBC is to support the 8 WUAs (on an independent basis) as they need to collect the irrigation and drainage service fee for improving operation and maintenance of the schemes.
PBC 6	Effective transfer of the management of the 8 rehabilitated irrigation schemes, between SEMRY and each of the 8 WUA
Description	This indicator measures the finalization of the transfer of irrigation management process from SEMRY to the WUA . The process is done in two stages: (i) upon project effectiveness, co-management period, WUAs will take responsibility of the tertiaries canals. (ii) upon rehabilitation work completion, a Transfer Agreements have been signed between SEMRY and each WUA for each of the eight (8) irrigation schemes rehabilitated under component 1.2 of Schedule 1, under terms and conditions described in the PIM.
Data source/ Agency	SEMRY annual audits. Transfer Agreement signed between SEMRY and each one of the 8 WUAs.
Verification Entity	IVA
Procedure	Transfer Agreements to be signed as irrigation schemes are being rehabilitated. Size of areas: SP1: 732 ha / SP2: 1492 ha / SP3: 1669 ha / SP4: 1833 ha Pouss: 952.2 ha / Maga West: 2264.7 ha / Maga East: 2356.8 ha / Guirvidig: 910.3 ha Year 1 is basically launching the procurement of the works. Year 2 is launching works. Year 3. Rehabilitation works in principle in 4 schemes (Maga West, Maga Est, SP4 and SP3) and hence their transfer upon completion. Approximately 8,123.5 ha transferred: payment equal to about US$1 million Year 4. Rehabilitation works in principle in 4 schemes (Pouss and SP1) and hence their transfer upon

	completion. Approximately 1,684.2 additional ha transferred: payment equal to about US$0.2 million Year 5. Rehabilitation works in principle in 4 schemes (Guirvidig and SP2) and hence their transfer upon completion. Final 2,402.3 ha transferred, payment equal to about US$0.3 million.
PBC 7	Developed and conducted Annual performance evaluation on the implementation of the Scheme Management Code in the 8 rehabilitated irrigation schemes
Description	This PBC rates the satisfaction in the implementation of the “Scheme management Code” on each of the 8 irrigation schemes. Annual surveys on the degree of satisfaction, complaints and irrigation service delivery will be elaborated.
Data source/ Agency	Annual evaluation of the implementation of the “Scheme management Code”
Verification Entity	IVA
Procedure	The Recipient has conducted five (5) annual performance evaluation on the implementation of the Scheme Management Code in each of the eight (8) rehabilitated irrigation schemes, all under terms and conditions described in the PIM. (a) Annual report in a g iven year (b) Annual report in a subsequent year (c) Annual report in a subsequent year (d) Annual report in a sub sequent year (e) Annual report in a subsequent year The consulting firm for the TA of subcomponents 1.3 and 3.1 will be asked in their TOR to elaborate an index (report's scorecard) to measure the performance of the implementation of the Scheme Management Code. Some criteria to consider for the report scorecard are: i. Preparation of annual maintenance plan (WUA, SEMRY); ii. Complying with irrigation schedule; iii. Special survey of tail-enders; iv. Irrigated area; v. Fee recovery; vi. Satisfaction survey; vii. Quantitative reduction in complaints; viii. Regularity of meetings of general assembly; and ix. Regularity of meetings of management committee.

PBC 8	Implementation of SEMRY's Social plan
Description	This PBC intends to evaluate the percentage of implementation of the social plan. An amount corresponding to US$62,500 per phase implementation of social plan of SEMRY under terms and conditions described in the PIM may be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#7 (US$500,000)
Data source/ Agency	Annual audit of SEMRY
Verification Entity	IVA
Procedure	SEMRY has implemented its Social plan, all under terms and conditions described in the PIM. In subcomponent 3.1. there is: (i) A TA to support the process of transformation of SEMRY including the implementation of the social plan. (ii) An IVA to verify every year the degree of implementation of the social plan of SEMRY.

PBC 9	SEMRY has approved the transfer of processing and commercialization activities to the private sector.
Description	This PBC intends to support the transfer of the commercialization/processing aspects of SEMRY to the private sector. The project intends to support the PPP process (an O&M--Operation & maintenance-- contract, a concession contract, a subcontracting agreement or a leasing contract) of the facilities (rice mill) of SEMRY. A PPP contract has been signed between SEMRY and a private company to transfer SEMRY's commercial activities, under terms and conditions as described in the PIM.
Data source/ Agency	SEMRY/MINADER
Verification Entity	IVA/CTR
Procedure	A PPP contract has been signed between SEMRY and a private company to transfer SEMRY's commercial activities , under terms and conditions as described in the PIM. In subcomponent 3.1 there are 2 consulting services: (i) to support the implementation of the transformation plan of SEMRY, including the procurement process for the transfer of the commercialization / processing facilitiies of SEMRY to the private sector. (ii) to verify (IVA) the contract for the O&M of the commercialization/ processing facilities of SEMRY is signed.

ANNEX 1: Implementation Arrangements and Support Plan

Project Institutional and Implementation Arrangements

1. **The GoC borrows via the MINEPAT.** MINEPAT will serve in the PSC as President. In addition, MINEPAT is responsible for ensuring the annual provision of funds for O&M of the main infrastructure of the region, such as the Maga dam and the Logone dike. **The agency with overall responsibility for the project *(maître d'ouvrage)* is the MINEPAT. The implementing agency *(agence d'exécution)* is SEMRY, which reports to MINADER.**

2. **A PSC will be created. It will be chaired by MINEPAT and will include a Vice-president appointed by MINADER.SEMRY is under MINADER and hence MINADER participation is fundamental for the reform of SEMRY and achieving the PDOs.** The PSC will be responsible, *inter alia*, for: (i) providing strategic oversight and guidance to the project; (ii) supervising the implementation and monitoring the performance of the project; (iii) identifying, in cooperation with the World Bank, any necessary adjustments to the project design or implementation plan, based on the performance monitoring results; (iv) approving the project's annual work plans and budgets, to be prepared by the PIU; (v) approving the timing of the steps for the phased transfer of project implementation responsibility from the PIU to SEMRY; and (vi) ensuring the timely mobilization of counterpart funds. In particular, the PSC will monitor closely the implementation of the transformation process within SEMRY, assessing progress against targets and milestones, and providing recommendations and advice to MINADER and SEMRY for corrective actions where necessary. The PSC will be comprised of a maximum of 15 members including, *inter alia,* representatives of MINEPAT, MINADER, MINFIN, Technical Commission for Rehabilitation of Public Sector Enterprises/*Commission Technique de Réhabilitation des Entreprises du Secteur Public et Parapublic (CTR)*, MINEPIA, MINEE, Ministry of Social Affairs (MINAAS), MINTP, MINEPDED, CAA, the Governor of the Far North Region, SEMRY, one representative of the Yagoua-WUAs and another of the Maga-WUAs, as well as a representative of rice growing Cooperative in Yagoua and another from Maga. The secretariat for the PSC will be provided by the PIU of the project. The PSC will meet at least twice per year. In addition, the chair of the PSC may convene additional important meetings, and invite technical experts to participate, as necessary.

3. **A Regional Technical Monitoring Group/*Group Regionale Suivi Technique* (RTMG/GRST**) chaired by the Governor and having as members the regional representatives of the ministries concerned and representatives of WUA/CGER and Cooperatives. The GRST meets at least twice a year, and its main task is to provide technical support to the PSC. The composition of the RTMG will be the regional delegates of the various Ministries as well as the participation of two WUA delegates and farmer's cooperatives from the Maga and Yagoua areas. In addition, the chair of the RTMG may invite for additional important meetings technical experts in particular fields of domain. The PIU will act as secretariat of the RTMG, ensuring a homogenous perspective of the project with the PSC.

4. **A PIU, which will be based within SEMRY and will report jointly to the Chair of the PSC and to the DG of SEMRY, will assist in the implementation of the project.** The creation of this unit is necessary because of capacity limitations within SEMRY. As SEMRY evolves and develops its full capacity, by year 3, the PIU roles will have diminished, and SEMRY will take on full responsibility for long-term activities in order to adopt and continue the change and adaptation process beyond the execution of the project. These changes of roles will be evaluated and approved by the PSC.

5. **The roles and functions of the PIU and of the new-SEMRY have been discussed extensively and agreed with the Government for ensuring the long-term sustainability of the project.** The PIU will include a cross-cutting team: Coordinator, Change Management Specialist, FM Specialist, Procurement Specialist, M&E Specialist, Environmental Specialist, Social Specialist, Gender Specialist, Communications Specialist, Agri-business specialist and Agri-finance Specialist, two Accountants, and an Internal Auditor (see Table 1.1). The technical units will be within SEMRY as agreed upon the new organogram including the recruitment of the new units (e.g. GIS, WUA support, water resources, Training center/ICT, maintenance department). This staff will support the implementation of Component 1 (Hydrologist, Irrigation Engineer, WUA Specialist); and (ii) implementation of Subcomponent 3.2 (agronomical expert, research and extension). In addition, at the departmental level, there is a Commission to assess and monitor the GRM. It is chaired by the prefect of Mayo-Danay and, as necessary, he will manage complaints at the highest level. This Commission, which brings together most of the departmental delegates from the ministries, works in collaboration with the local grievances' management committees (collection and processing of requests).

7. The operation of the Steering Committee, the RTMG, and any commission is supported by resources from the Public Investment Budget of the Cameroonian State (Counterpart Fund).

8. **Budgeting.** The overall responsibility for the preparation of a work plan and the annual budget *(plan de travail et du budget annuel, PTBA)* will be with the PIU. The different stages of budget preparation and management (preparation, review, adoption, and execution) will be detailed in the FM section of the PIM. The annual work plan and budget will be prepared each year in consultation within SEMRY, and submitted to a first level of approval by the PSC and then resubmitted to a second level of approval (Notice of Non-Objection) by the World Bank. Each PTBA approval process at all levels must be triggered within a reasonable time to facilitate their inclusion in the national finance law of the reference year. A budget execution report will be included in the documentation to allow monitoring of project implementation.

9. **Implementation schedule.** The proposed project would be implemented over a seven-year period, with a closing date of June 30, 2029. The contracts for the identified infrastructure works are all expected to be signed during the first 12 months of implementation.

FM and Disbursement

10. In line with the guidelines as stated in the World Bank Directive FM Manual for World Bank Investment Financing Operations issued March 1, 2010 (revised in September, 2021), and the guiding principles in risk assessment issued in April 2020, a FM assessment of SEMRY was performed. In so doing, the team went beyond the Borrowers' knowledge of the World Bank's FM rules to focus more on lessons learned considering their track record in implementing previous World Bank financed operations similar operations. The proposed following mitigation measures aim to reduce the likelihood and/or impact of the identified risks.

Financial Management Arrangements

11. In line with the use of the country national system, the project's FM arrangements will rely on the existing country FM arrangements put in place to manage donor-funded projects. These arrangements are centered on two main institutions: (a) the Autonomous Sinking Funds (CAA) equipped with dedicated tools developed by the World Bank IDF and (b) the Ministry of Public Procurement in charge of *ex ante* control of all supplier invoices associated with a contract before any payment by CAA.

12. ***Staffing***. The PIU will be responsible for the day-to-day implementation of FM activities and will be staffed with a qualified FM team comprised of an FM officer and an accountant. During implementation,

depending on the workload of the accounting function and the additional work dedicated to e-vouchers and grants activities, the project may consider recruiting a second accountant. The team will be supported by an internal auditor. The team will ensure the transmission of financial data, archiving of financial data, and additional controls to be implemented in order to ensure accuracy and completeness of the project financial data. This also includes ensuring that every transaction is duly authorized and properly recorded and that assets are safeguarded.

13. ***Budgeting.*** Overall responsibility for preparing an annual work plan and related budget will lie with the PIU. The different stages of budget elaboration and management (preparation, revision, adoption, and execution) will be detailed in the FM procedures' manual. The annual work plan and budget will be prepared annually for approval by the PSC and submitted to the World Bank for approval (No Objection) early enough to have them approved and included in the national finance law. A budget execution report will be included in the reporting scheme to enable the monitoring of the project implementation.

14. ***Accounting Policies and Procedures.*** The PIU's FM team will assume the overall responsibility for maintaining accounts associated with project's activities and ensuring that annual financial statements are produced in a timely manner, and in accordance with accounting standards that are in effect in Cameroon.[22] This will be ensured through the customization of the accounting software currently in use for PULCI that will be parameterized accordingly. The software might be capable of keeping records of the project financial activities and generate financial statements that are in line with the project reporting requirements. The software might be able to also record procurement transactions and keep track of the project assets. The budget and accounting modules of the integrated FM system for donor-funded projects (SIGED) is being used by the CAA and for the sake of consolidation and ease of data sharing, the project will procure, install and use same system namely TOMPRO developed by TOMATE. It is expected that the information system will be in place and customized to record the project's transactions and to produce periodic reports not later than two months after the effectiveness date. E-vouchers and matching grants beneficiaries will send to the projects their accounting details five days after the end of each month, to enable the project to integrate data on time in the project's monthly accounts.

Internal Control and Internal Auditing.

15. FM procedures' manual. Administrative, financial, and accounting procedures will be specified in the Procedures Manual (Administration, Finance and Account). The manual will include a clear description of initiation and approval processes, and the designation of duties and responsibilities. The FM procedures' manual for PULCI as well as the standardized FM Manual of Procedures developed by CAA with World Bank IDF support will be customized to reflect the specificities of the project. The PIU will make use of the computerized accounting system to capture all project-related transactions. FM officers will be responsible for maintaining all controls to ensure: (i) that the project funds are used only for the purposes they were intended in an efficient and economical way; (ii) the preparation of regular, accurate, reliable, and timely financial reports; and (iii) that the project's assets are adequately safeguarded. Those internal control arrangements are reinforced by the Government's internal control arrangements, such as the prior visa payment by the Ministry of Public Contracts that will apply to project's invoices and CAA controls regarding withdrawal applications and payment requests.

16. Specific activities: E-vouchers, Matching Grants, support to WUAs and local actors for innovation, training and agricultural production: (i) The e-voucher subsidy mechanism will be established through an

[22] The Accounting Principles set out by L'Organisation pour l'Harmonisation en Afrique du Droit des Affaires–OHADA.

agreement between the project, eligible Farmers, Distributors/Suppliers and a Microfinance institution (MFI) where the farmer will have an account opened with his deposit (quota share). This arrangement and deposit will trigger the delivery in real time of an e-voucher by the MFI to the distributors. At the supplier's request made periodically, the project and the bank jointly pay the supplier for the delivered goods/equipment, subject to the presentation of the e-voucher and the delivery note; (ii) For matching grants, each eligible business plan will be co-financed by the grant, personal contribution from the beneficiary and a bank credit/statement. Funds will be made available in a beneficiary bank account dedicated to the operation. The grant will finance equipment and works (new buildings, agricultural machinery, plants, drying areas, silos, etc.) and TA, while the needs of working capital will be covered by the other financing sources (personal contribution and bank credit). The receiving enterprises will prepare financial statements in a standardized format and at a periodicity to be defined in a specific manual; (iii) For WUAs, support will be provided to WUAs in form of grants, TA, as well as support to their organization, accounting and reporting requirements. The WUAs will be assisted by experts paid by the PIU, under the coordination of the latter; and (iv) Collaboration with other institutions will be explored in order to develop an agricultural program for reinforcing the capacities in irrigated agriculture the Far North of Cameroon. A Sub-Grant manual will be elaborated for the selection of actors (universities, training centers, technical centers) and implementation of the activities.

17. Specific manuals will be prepared for e-vouchers and matching grants mechanisms, as well as for WUAs and local actors for training and agricultural production. They will detail processes for selecting the beneficiaries, transferring funds, justifying and verifying the effective use of funds allocated, ensuring physical execution and control mechanisms, and for accounting for those transactions following the appropriate accounting principles. The validation of those manuals will be conditions for the related disbursement categories.

18. Internal audit. Considering the complex nature of the project, and to ensure the integrity of the internal control environment and associated systems throughout the life of the project, an internal auditor will be recruited. The internal auditor will conduct *ex post* reviews of project's transactions executed in support of the matching grants and the implementation of the related activities. In addition, the Internal Auditor will be required to conduct a periodic review of the continuing adequacy of the internal control environment in general and report on its state to project management and the steering committee. The scope of intervention of the internal auditor will specifically include e-vouchers, matching grants and WUAs activities. Internal audit reports will be produced quarterly, or within a shorter period, depending on the risk matrix and its associated audit plan, both of which must be elaborated during the first month of the internal auditor's assignment.

19. Training from the World Bank. To sustain the capacity building initiatives for the project team, the World Bank Finance and Loan Department and FM units will provide training to the project FM team on disbursement and FM procedures. All these measures will aim to further enhance the project's internal control system.

20. ***Financial Reporting and Monitoring***. Interim financial reports (IFRs) will be generated using the computerized FM system. They will be prepared and submitted to the World Bank within 45 days of the end of each calendar quarter. The content of the IFR will typically include: (i) the sources and uses of funds by the classification of project expenditures (detailed by components and activities); (ii) a comparison of budgeted and actual project expenditure (commitment and disbursement) by date and for the quarter; (iii) a statement on the use of funds by component or activity; (iv) the DAs activity; and (v) a physical progress report on project implementation. The format of the IFR was agreed at negotiations. Monthly financial statements will

be submitted by the e-vouchers and matching grants beneficiaries to the project within ten days of the end of each month, in a format that will be outlined in the specific manuals. At the end of each fiscal year, the Project will prepare annual financial statements that will be subject to external audit.

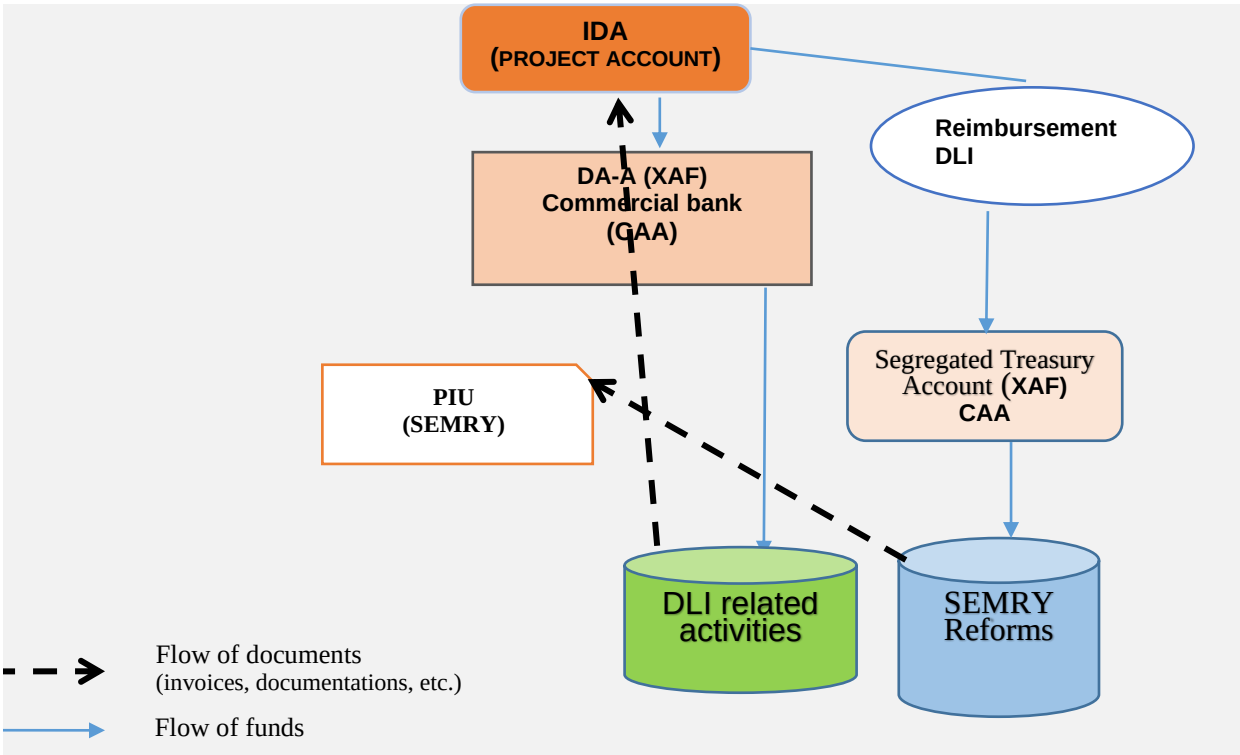
21. ***External Auditing***. The annual financial statements prepared by the PIU as well as the internal control system will be subject to an annual audit by a reputable and independent auditing firm based on TOR satisfactory to IDA. The scope of the audit will be tailored to the project's specific risks in accordance with World Bank requirements and will be agreed upon with the Government. In particular, the independent auditor will audit the use of all funds flowing from DAs to beneficiaries. The project will comply with the World Bank's access to information and disclosure policies by making all disclosable audit reports (opinion report only) promptly available to the public after receiving them. The project's external auditor will be hired within six months of project effectiveness. A single audit opinion, in compliance with International Standards on Auditing, will be issued and will cover all project receipts, payments, and accounts. The audited financial statements, along with the auditor's report and management letter (incorporating management's comments), covering any identified internal control and accounting system weaknesses, will be submitted to IDA within six months of the end of each financial year. In addition to the project financial statements audits, the Entity (SEMRY) financial statements should be audited every financial year, and the approved audit reports will be submitted to IDA along with the Project Financial Statements.

22. ***Funds Flow and Disbursement Arrangements***. The flow of funds will rely on the Government's banking arrangements through CAA. In this regard, CAA's managing directors will continue to act as public accountants. This includes signing authorization for all means of payment using the automated payments module of the CAA information system for donor financing. Since the project will have three components – using different financing modalities (e.g., PBC under Subcomponent 3.1; e-voucher and matching grants under Subcomponents 1.3, 2.1 and 2.2; and TA using traditional transaction methods), arrangements will be adjusted to these specific needs.

23. **PBC – Subcomponent 3.1 (see detailed table in Annex 3).** Subcomponent 3.1, among its activities, supports/induces the implementation of SEMRY institutional reforms. Under the subcomponent, achievements under the project will be monitored through predetermined indicators. Disbursements of the loan proceeds will be made on an agreed scale and schedule according to the achievement of the indicators (PBC). The verification of the achievement of the PBC will be done based on verification protocols by an IVA that have been detailed in the IVA contract and in the procedures' manual. Upon achievement of the PBC, and after the IVA has provided evidence of such achievement as confirmed by the World Bank, funds claimed will be disbursed into an account to be opened and managed by CAA provided a prior agreement is reached with the government. Funds will be capped at agreed amounts for PBCs and be disbursed against specific SEMRY eligible expenditures. Once deposited in the account, funds will be directed to activities related to institutional reforms at SEMRY established under the project. The eligible expenditures include equipment, personnel during the first four years, operation and maintenance, consulting services, implementation of social plan. Detailed procedures for the disbursement of IPF-PBC will be presented in the Disbursement and Financial Information Letter (DFIL).

24. Advances on the achievement of PBCs will be made available to the project and a dedicated DA will be opened if the project decides to call on such opportunity. The advances will be deducted from the amount to be paid upon achievement of the PBC.

Figure 1.1: Disbursement Channel for PBC Activities



Other activities, including e-voucher and matching grants mechanisms

25. One DA B will be opened in a commercial bank acceptable to the World Bank for TA activities; transaction accounts may be opened at the PIU level. As per country system, the signatory of the DA is the General Manager of CAA. The transactions account will be replenished periodically by funds transferred from the DA B to finance eligible expenditures at the local level. A second DA C will be opened for the e-voucher mechanism to finance activities under Subcomponent 2.1 and for the matching grants mechanism to finance activities under Subcomponent 2.2. Details on flow of funds and FM aspects for DA-C will be provided in the specific manuals to be prepared for those two subcomponents.

Figure 1.2: Disbursement Channel for other activities, including e-voucher and matching grants mechanisms

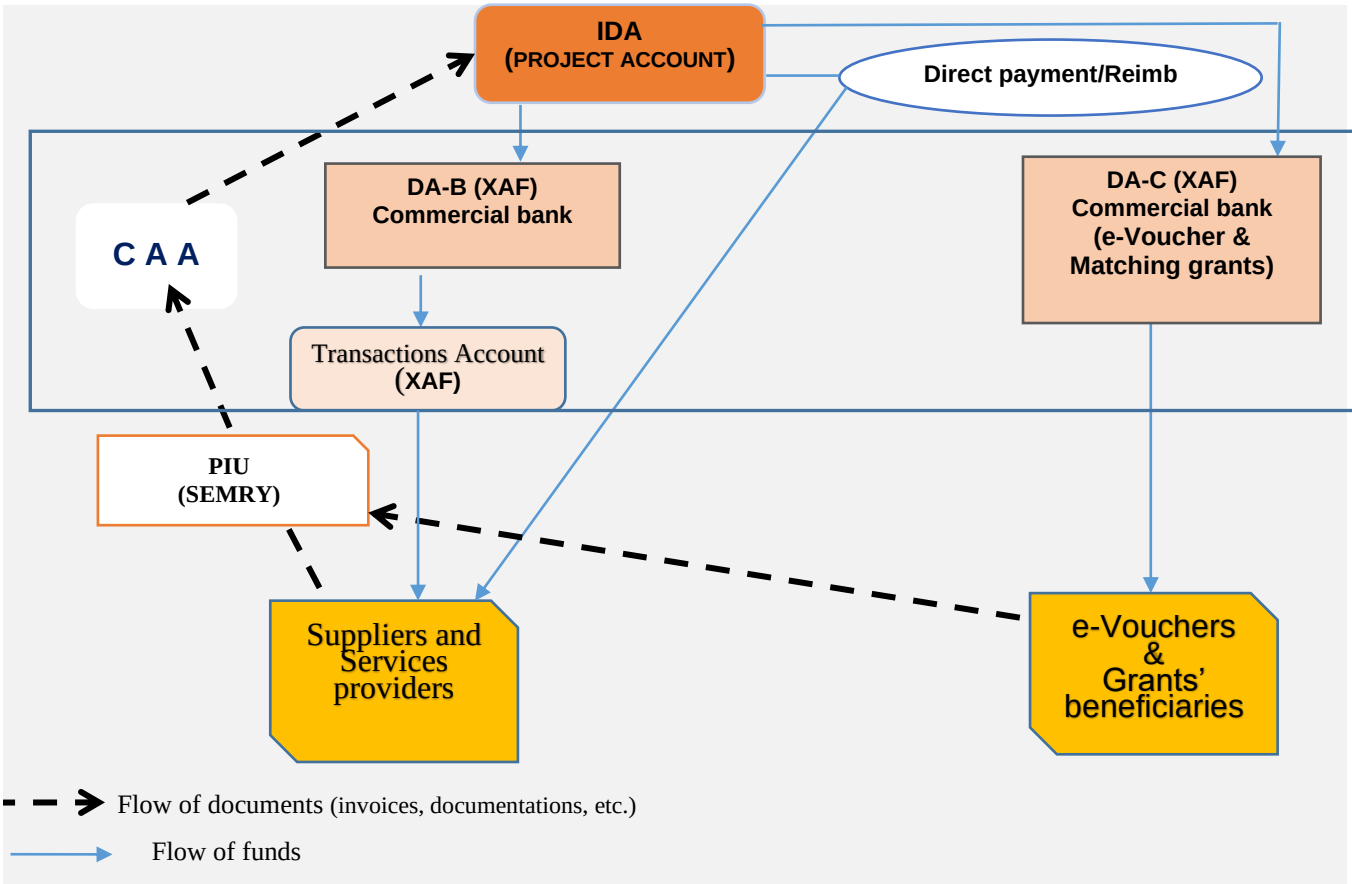


Table 1.1: Financial Management Action Plan

Action to be undertaken	Time-frame	Responsible body
1- Extend the mandate of the PPA PIU to implement the project until the new PIU staff is hired and operational	Done	MINEPAT
2- Approve the final version of the PIM	Done	PPA Unit (PULCI)
3- Customize the standardized project FM procedures to reflect the project specificities as part of the PIM	No later than two (2) months after effectiveness	PIU
4- Prepare a specific manual for WUAs	Disbursement condition under the related category	PIU
5- Prepare the e-voucher manual	Disbursement condition under the related category	PIU

Action to be undertaken	Time-frame	Responsible body
6- Prepare the matching grants manual	Disbursement condition under the related category	PIU
7- Prepare the Subgrant manual for Innovation and Agricultural Training	Disbursement condition under the related category	PIU
8- Customize the accounting software currently used for PULCI, to handle accounting and reporting needs under the project	No later than two (2) months after effectiveness	PIU
9- Recruit a third-party verification agent	No later than three (3) months after effectiveness	PIU
10- Recruit an internal auditor to conduct ex-post reviews of the project transactions and procedures	Within six (6) months after effectiveness	PIU
11- Recruit an external auditor to conduct annual financial audit of the financial statements of the project along with the review of the internal control system	Within four (4) months after effectiveness	PIU

26. ***Implementation Support Plan for FM.*** FM implementation support will be made available depending on intensity and frequency in line with a risk-based approach and will involve a collaborative approach with the entire Task Team. An initial implementation support mission will be undertaken three months following project effectiveness. Thereafter, implementation support missions will be scheduled using the risk-based approach model, and will include the following activities: (i) monitoring of FM arrangements during the supervision process at intervals determined by the risk rating assigned to the overall FM Assessment at entry, and subsequently during implementation (included in the implementation status and results report - ISR); (ii) integrated fiduciary review of key contracts; (iii) review of the IFRs; (iv) review of the audit reports and management letters from the external auditors and follow-up on material accountability issues by engaging with the task team leader, the recipient, and/or Auditors; the quality of the audit (internal and external) will also be monitored closely to ensure that it covers all relevant aspects and to ensure confidence with regard to the appropriate use of funds by recipients; (v) on the ground supervision; and (vi) assistance to build or maintain appropriate FM capacity and efficient systems of internal control.

27. ***Conclusions of the FM Assessment.*** The overall FM residual risk at preparation is considered **Substantial**. The proposed FM arrangements for this project are considered adequate and meet the World Bank's minimum FM requirements.

Procurement

28. **Regulations**. Procurement for goods, works, non-consulting, and consulting services will be carried out in accordance with the procedures specified in the World Bank Procurement Regulations dated November 2020 (Procurement Regulations), and provisions stipulated in the Financing Agreement. **Fraud, coercion, and corruption**. The project's procurement activities will be carried out in accordance with the Anti-Corruption Guidelines (revised as of July 1, 2016).

29. **Procurement** information **and** documentation **- filing and database.** Procurement information will be recorded and reported as follows:

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

(ii) Contract award information will be promptly recorded and contract rosters, as agreed, will be maintained.

(iii) Comprehensive quarterly reports indicating: (a) revised cost estimates, where applicable, for each contract; (b) status of ongoing 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 (c) updated Procurement Plans, including revised dates, where applicable, for all procurement actions.

30. **Advertising Procedure**

- **General Procurement Notice, Specific Procurement Notices**, Requests for Expression of Interest, and results of the evaluation and contracts award should be published in accordance with advertising provisions in the Procurement Regulations.
- **For request for bids and request for proposals that involve international bidders/consultants,** the contract awards shall be published in the United Nations Development Business in line with the Provisions of the Procurement Regulations. For works and goods, the information to publish shall specify: (a) the name of each bidder who submitted a bid; (b) bid prices as read out at bid opening; (c) the name and evaluated prices of each bid that was evaluated; (d) the names of bidders whose bids were rejected and the reasons for their rejection; and (e) the name of the winning bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. For consultants, the following information must be published: (a) names of all consultants who submitted proposals; (b) technical points assigned to each consultant; (c) evaluated prices of each consultant; (d) final point ranking of the consultants; and (e) the name of the winning consultant and the price, duration, and summary scope of the contract. The same information will be sent to all consultants who submitted proposals.
- **For other contracts,** the information should be published in national/regional gazette periodically (at least, quarterly) and in the format of a summarized table covering the previous period with the following information: (a) the name of the bidder/consultant to whom the contract was awarded; (b) the price; (c) duration; and (d) scope of the contract.
- **Procurement for sub-projects: Procurement (works, goods, and services) for Subcomponent 1.3 and Components 2 and 3 will be conducted on the basis of community participation** in accordance with clause 6.38 and 6.57 of the World Bank Procurement Regulations (Particular types of Approved selection Arrangements and particular Types of Contractual Arrangements), and other procurement/selection methods detailed in the specific implementation manual for WUA, matching-grant, e-voucher approved by the World Bank.
- **Training, workshops, and conferences**. The training (including training material and support), workshops, and conference attendance, will be carried out based on an approved annual training and workshop/conference plan. A detailed plan providing the nature of training/workshop, number of trainees/participants, duration, staff months, timing, and estimated cost will be submitted to IDA for review and approval before initiating the process. The appropriate methods of selection will be derived from the detailed schedule. After the training, the beneficiaries will be requested to submit a brief report

indicating what skills have been acquired and how these skills will contribute to enhance his/her performance and contribute to the attainment of the PDO.

- **Operating costs.** Operating costs financed by the project are incremental expenses, including office supplies, vehicles operation and maintenance, maintenance of equipment, communication costs, supervision costs (that is, transport, accommodation, and per diem), and salaries of locally contracted staff. They will be procured using the procurement procedures specified in the project's manual of administrative, financial, and accounting procedures.

31. **Assessment of the PIU Capacities to Implement Procurement**

- The procurement activities for the project will be executed by the PIU reporting to SEMRY and to the PSC. The SEMRY PIU will carry out the following activities: (a) managing the overall procurement activities and ensuring compliance with the procurement process described in the relevant manuals; (b) ensuring compliance of bidding documents, draft Requests For Proposals, evaluation reports, and contracts with World Bank procedures; (c) preparing and updating of the Procurement Plan; (d) monitoring the implementation of procurement activities; (e) developing procurement reports; and (f) seeking and obtaining approval of internal designated entities and then on IDA on procurement documents as required.
- An assessment of the capacity of the PIU to implement procurement activities of the project was carried out during the project preparation. The assessment reviewed the organizational structure for implementation of the project, the procurement capacity (past procurement experience, staff in charge of procurement, tools including manuals, procurement filing, etc.) of the SEMRY and the interaction between the different agencies/stakeholders involved in the project as the project will implement an e-voucher and a matching grants mechanism also.
- The assessment revealed that: (a) beneficiary agencies do not have sufficient technical expertise to prepare the technical documents (TORs, bidding documents, technical specification), subject to the recruitment of consultants to reinforce specific activities; (b) procurement capacity within MINMAP, particularly with regard to IDA financing, is limited; and (c) SEMRY has not experienced World Bank procurement procedures.
- The key risks identified for procurement under the project are as follows: (a) technical staff not familiarized with complex works, which may lead to poor technical documents; (b) staff involved in the project may not have sufficient knowledge of the NPF and/or there is a risk of confusion with previous sets of guidelines; (c) there is lack of proficient procurement staff to implement actions on time and in line with the NPF; (d) inadequate communication and interaction between the beneficiaries and the PIU may lead to delays in procurement processes and poor cost estimations; (e) administrative routines may increase delays in the procurement processes and affect project implementation; (f) the procurement in a specialized market with few bidders can restrict competition and possibly increase prices and collusion risks; (g) the corruption risks in procurement of big contracts; and (h) poor filing which may lead to loss of documents. Overall, all these risks can cause mis-procurement, 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.

32. **Contract management capability**. The major consultancy contracts are awarded by the PIU. The PIU being the nodal agency is overall responsible for the compliance to the agreed procurement procedures and processes and shall monitor the contractual performance including contract management issues, if any.

33. **The overall procurement risk** for the project is rated Substantial after adopting the agreed mitigation action plan summarized in Table 1.2 below.

Table 1.2: Action Plan Mitigation Measures

Risk	Action	Responsibility	Date
1. Staff involved in the project who may not have sufficient knowledge on the NPF and/or risk of confusion with the former guidelines	Hire a Procurement Specialist based on TOR acceptable to the World Bank Organize workshop sessions to train all staff involved in the procurement of the project on the NPF Continuous hands-on trainings of identified key staff on the NPF	PIU World Bank Procurement Specialist PS/World Bank	No later than 6 months after effectiveness During the life of the project During the life of the project
2. Technical staff not familiarized with complex works, which may lead to poor technical documents	Hire on competitive basis qualified technical consultants to support drafting technical documents and participate in evaluation committees for complex projects	PIU	6 months after effectiveness
3. Inadequate communication and interaction between the beneficiaries and the PIU, which may lead to delays in procurement processes and poor estimation of the costs	Elaborate the manual of administrative, financial, accounting procedures to consider the NPF and 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	PIU	No later than 2 months after effectiveness
	Elaborate the matching grants manual	PIU	No withdrawal under category (4) until the Recipient has adopted the Matching Grants Manual
	Elaborate the operations manual, including a specific section for the e-voucher mechanism	PIU	No withdrawal under category (3) until the Recipient has adopted the E-Vouchers Manual
	Elaborate the Sub-Grants manual (innovation, training and agricultural production)	PIU	No withdrawal under category (5) until the Recipient has adopted the Sub-Grants Manual
4. Administrative routines may increase delays in the	Exercise quality control on all aspects of the procurement process, including developing TORs, technical	PIU	During the life of the project

Risk	Action	Responsibility	Date
procurement processes and affect project implementation	specifications, bidding documents, proposals, request for quotations, evaluation, and award		
	Monitor, on a regular basis, the Procurement Plan implementation and set up a close follow-up in relations with beneficiaries and official bodies involved (Ministry of Public Contracts [*Ministère des Marchés Publics*], CAA) to ensure that appropriate actions are taken on time	PIU	During the life of the project
5. Procurement in a specialized market with few bidders can restrict competition and possibly increase prices and collusion risks	All procurement of large contracts will be thoroughly reviewed by the World Bank All procurement of large contracts will be thoroughly reviewed by the World Bank	PIU	During the life of the project
6. Corruption risks in procurement of large contracts	The Borrower will regularly update its market survey and cost estimates	PIU	During the life of the project
7. Poor filing, which can lead to loss of documents	Set an appropriate filing system at the level of PIU to ensure compliance with the World Bank procurement filing manual	PIU/Procurement Specialist	During the life of the project

34. **Frequency of procurement reviews and supervision:** The World Bank's prior and post reviews will be carried out based on thresholds indicated in Table 1.3. IDA will conduct six-monthly supervision missions and annual post-procurement reviews. The standard post-procurement reviews by World Bank staff should cover at least 20 percent of contracts subject to post-review. Entering timely and accurate data and information on procurement is essential for post-review work under STEP. Post reviews consist of reviewing technical, financial, and procurement reports on project procurement actions by World Bank staff or consultants selected and hired by the World Bank. Project supervision missions shall include a World Bank procurement specialist or a specialized consultant. IDA may also conduct an independent procurement review at any time until two years after the closing date of the project.

35. **Procurement prior review**. The procurement risk is rated High. Table 1.3 summarizes the procurement prior review for High risk. These prior review thresholds can evolve according to the variation of procurement risk during the life of the project.

Table 1.3: Procurement Prior Review Thresholds (US$ millions)

Type of Procurement	Thresholds (based on residual risks: substantial)
Works	10

Goods, Information technology, and non-consulting services	2
Consulting firms	1
Individual consultants	0.3

36. **PPSD and Procurement Plan**

a. The different approaches, the selection methods for pre-qualification, estimated costs, prior review requirements, and time frame are agreed between the recipient and the World Bank in the Procurement Plan;
b. A PPSD and a derived Procurement Plan for the first 18 months of program implementation were prepared during appraisal and the final versions discussed and approved during negotiations. During implementation, the Procurement Plan will be updated as required—at least annually—to reflect the actual program implementation needs and improvements in institutional capacity; and
c. Preferred arrangements of major contracts. As per the PPSD, Table 1.4 summarizes the key high-risk value and prior review contracts for the proposed project.

Table 1.4: Summary of Key High-risk Contracts

Contract Description	**Cost Estimate (US$)**	**Review by the World Bank**	**Procurement Approach:** • **National** • **International** • **Open** • **Limited** • **Direct Selection** • **Single Source** • **QCBS/CQS.** • **Negotiations** • **Best and Final Offer (BAFO)**	**Evaluation Method** • **Rated** • **Least cost**	**Risk rating:** • **High** • **Substantial** • **Low**
MAJOR WORKS					
*Irrigation rehabilitation works**	168 000 000	A priori	International Competitive bidding	Least Cost	High
CONSULTING SERVICES					
Consulting services for hydrology study including dam safety and flooding management.	500 000	Post	QCBS	Rated criteria	High
Consulting services for supporting Irrigation Management (Subcomponent 1.3+3.1)	3 000 000	Prior	Single Source Selection		High
Consulting services for supporting implementation of Matching Grants*.	2 500 000	Prior	QCBS	Rated criteria	High
Consulting services for supporting implementation of transformational plan of SEMRY (sc 3.1).	1 400 000	Prior	Single Source Selection		High
Consulting services for verification of PBCs (Subcomponent 3.1.).	400 000	Post	CQS		High
CONTRACT ALREADY SIGNED and phase 1 executed Consulting services for design, procurement support for work and supervision of irrigation rehabilitation works. Phase 1 design. Phase 2 procurement support and construction supervision.	7 000 000 (2 500 000 and 4 500 000)	Prior	QCBS	Rated criteria	High

* HEIS will apply

Risks Related to the Procurement process

37. A series of risks related to the selection of the Operator and risks surrounding the execution of the PPP Contract for the transfer of the processing and commercialization activities to the private sector are presented below. The most significant risks relate to the selection of the Operator and risks surrounding PPP Contract execution and the corresponding mitigation are shown below (*Matrix of Risks and Mitigation Measures*):

Table 1.5: Risks and Mitigation Measures

	Risks	Mitigation Measures
(i)	Sufficient availability of competitive and motivated private sector partners ready to participate in the tender process	A market test shall be conducted in a transparent fashion to collect private sector feedback. The tender documents shared with firms attending the market test session will then be updated to reflect acceptable remarks. The goal is to make the tender process attractive to potential applicants. An initial selection will be conducted to identify the most qualified firms so that the leading applicants will be confident that they are being ranked against appropriate competitors.
(ii)	It represents an up-front significant investment and cost to replace or repair equipment for the Operator	The PPP/leasing contract would clearly indicate costs to be covered by SEMRY.
(iii)	Timely access to the installations (which should be a condition to the start of the PPP contract)	Actions should be taken to guarantee access to the installations and materials as soon as the contract award is notified to the Operator.
(iv)	Timely resolution of employment of former staff of SEMRY – with relocation/transfer, or hiring by the Operator, if possible.	SEMRY shall decide on the relocation/transfer of its current staff and negotiate with the Operator the hiring of staff meeting all necessary qualifications.
(v)	The Operator could be inclined to give priority to export of rice to neighboring countries. It would not affect the rice producers, but it would not achieve the objective of reducing imports and related foreign currencies.	This risk is certainly the most difficult to mitigate. Apart from imposing taxes on the export of rice, there is not much one can do. However, the PPP contract could specify the ceiling of exports (for instance less than 30 percent of commercialized rice), and the Regulator could monitor compliance with that obligation.
(vi)	Due to lack of maintenance by the Operator, assets might deteriorate fast.	The entity playing the role of Regulator shall ensure that the Operator is taking care of maintenance and replacement of assets when they reach the limit of their life cycle. Penalties shall be specified in the PPP contract accordingly.
(vii)	Security in the sub-region	The location of the sub-region is raising concern of security linked to terrorism. As a mitigation measure, the Government should install an alert system based on national and international intelligence.
(viii)	Failure of the Operator to be compliant with E&S obligations, including SEA and/or SH.	The Operator shall sign a Declaration to perform ES obligations, and a Committee of Prevention and Resolution of Dispute (CPRD) shall be in place to decide disqualification of the Operator or Operator's Personnel.
(ix)	Failure of the Government to perform its obligations under the PPP Contract.	The project includes a specific PBC (#9: SEMRY has approved the transfer of processing and commercialization activities to the private sector).

ANNEX 2: Detailed Project Description

Component 1: Improvements of Infrastructure and Water Management (US$153.4 million equivalent from IDA)

1. The primary goal of this component is to contribute to a more sustainable and equitable regional water resources and irrigation management and development in the Logone Valley. This will be achieved by combining infrastructural, institutional, and informational activities so that SEMRY becomes a modern water institution, such as the SAED. The component is organized in three subcomponents: (a) upstream water resources monitoring and coordination as well as operation and safety of main hydraulic infrastructure; (b) irrigation and drainage rehabilitation; and (c) irrigation and drainage management. First, a water resources unit and a WUA oversight unit with full GIS and technical capabilities will be established within SEMRY. Second, the full rehabilitation of the irrigation schemes will need to be undertaken before the transfer of their operation and maintenance to the WUAs. It is also expected that extensive training of the WUAs will be needed and performance agreements between SEMRY and the WUAs will be put in place. This component may qualify for both climate change adaptation and mitigation co-benefits. It will finance studies, consulting services, works, equipment, and training.

2. **Subcomponent 1.1: Security and Operation of Main Hydraulic Infrastructures** (US$1.4 million from IDA)**.** This subcomponent would include TA for the establishment of a water-resource unit within the restructured SEMRY, along with training, equipment, works, and linkages for measurements and coordination with the LCBC, of which Cameroon is a founding member. The restructured SEMRY would be responsible for water-resource data collection, analysis, and distribution of results. It would also be responsible for coordination with LCBC about transboundary water-resource management and flood protocols. The Commission is located in N'Djamena, just 200 km to the north on the opposite bank of the Logone River. Nine main activities are envisaged:

- Activity 1. Establish a water resources monitoring network and information system to monitor weather data; groundwater and river water levels; river-flows (ensuring a minimum flow of 25 m^3/s in Bongor and 12 m^3/s in Logone-Ghana); water quality; and sediment loads in the Logone Valley. The activity would support the introduction of modern technology, including real time, low-cost GSM telemetry and will be linked to national and regional LCBC water resources monitoring and information systems;
- Activity 2. Establish a joint Cameroon-Chad flood-forecasting model in the Logone river sub-basin and improve the decision support systems within the Chad Basin;
- Activity 3. Expand the present early warning systems from 70 km to 300 km all along the downstream part of the Logone river;
- Activity 4. Support national coordination (with the Hydrological Research Center/*Centre de Recherches Hydrologiques*, the National Meteorological Agency/*Direction de la Météorologie Nationale*, and the National Observatory for Climate Change/*Observatoire National Sur les Changements Climatiques)*;
- Activity 5. Establish hydrometric stations in Mayo Tsanaga and Mayo Boula, as well as construction of some structures to trap sediments in those two Mayos;
- Activity 6. Support regional coordination with the LCBC through capacity building and strategic basin planning. This activity includes the collation of existing information using modern GIS, remote sensing, and other spatial datasets and tools;
- Activity 7. Rehabilitate the Logone dike from Pouss to the north and improve its design for an efficient protection of Maga irrigated perimeters; and
- Activity 8. Establish updated operational rules for Lake Maga and train the SEMRY unit of Water Resources in its management. For that, a proper water balance model of the lake should be established, emphasizing evaporation losses, which are quite considerable due to the large, inundated area and the shallowness of the lake; and

- Activity 9: Elaborating the EPP of the Maga dam and update the ERP of the area elaborated within PULCI.

3. As a result of all of these activities, the capacity of SEMRY to track climate-related data and respond in real time to climate-induced risks like flooding, drought, and sedimentation would be increased sustainably through the project, both in terms of monitoring local hydrological conditions, as well as being able to effectively use the resulting infrastructure. In addition, the project will finance small works for completing the activities that were initiated under PULCI. For the Logone dike it will: (i) provide slope protection with vetiver and/or other grasses along the 90 km; (ii) improve the existing access track at the toe of the dike along the Logone river and improve the existing access track along the Maga dam, which are both key for ensuring transport of agricultural production and safety of the region; (iii) improve the access to irrigated perimeters by constructing 03 small bridges on Mayo Guerléo, petit Goromo and SP4 Dama village; (iv) construct livestock and human crossings/ramps at specific locations; and (v) install river bank stabilization works at critical points. At the Maga dam the project will: (i) protect about 750 m of the upstream slope with rip-rap or another method considered adequate; (ii) install piezometers at some critical points along the slope to monitor the water level and groundwater table location; (iii) install drainage at critical points to collect and monitor possible seepage; and (iv) install geodetic marks for settlement measurement. The O&M manual of the dike and appurtenant structures will be updated by integrating all the necessary works to guarantee satisfactory and safe operation as well as a monitoring and safety program.

4. **Subcomponent 1.2. Irrigation and Drainage Infrastructure, and RAP and ESIA activities** (US$146.5 million from IDA). The project area covers a portion of the Logone Valley located in the administrative region of the Far North of Cameroon (see Annex 9). It spans four districts (Yagoua, Vele, Kaï kaï, and Maga). Its climate is of the Sahelian type with an average annual precipitation around 700 mm. Most of the precipitation is concentrated over three months (July, August, and September).

5. The pumped irrigation schemes (4) in Yagoua (SEMRY I), around 5,726 ha in total and developed in 1977, are supplied with water pumped from the Logone River. The four pumping stations are supplied with electric energy from the network of the national electricity company of Cameroon (ENEO). The gravity-fed schemes (4) from Maga reservoir (SEMRY II) total around 6,484 ha and were developed in 1985. The dam of Lake Maga was built between 1978 and 1979 with the aim of creating a reservoir with a net storage of 330 million m^3 of water[23] intended for the irrigation of Maga scheme (SEMRY II). The dam is equipped with four irrigation outlets.

6. These schemes are equipped with irrigation and drainage infrastructures of a classic but well-developed design, with a higher level of internal regulation. However, deferred maintenance over the past 30 to 40 years has resulted in the deterioration of the irrigation and drainage infrastructure of the rice areas of Yagoua and Maga. Partial rehabilitation works have been carried out as part of the emergency flood control project (PULCI) implemented since 2014 in the far north of Cameroon.

7. This subcomponent aims at completing the rehabilitation of the irrigation and drainage infrastructures for the irrigation schemes (Yagoua and Maga). These activities have the potential to realize energy efficiency gains from improved pumping and locking-in the continued use of zero-emissions gravity-fed systems, particularly in Maga.

8. This subcomponent will also support the implementation of the RAP and ESIA activities as per its designs. Timely execution of these activities is crucial; the project foresees to give the responsibility of implementation to the contractor in charge of works.

[23] In 2019, due to sedimentation, only 260 million m^3 of net storage remained.

9. The PULCI project targeted rehabilitation of various elements with a priority on the bulk-supply system, including the Maga dam and Logone dike, and some irrigation infrastructure (approximately 30 percent of half of the schemes, equivalent to 15 percent of the irrigation area). A contract for update of detailed design and construction supervision was awarded during project preparation (April 2020). This contract aims to establish detailed design and bidding documents for the rehabilitation of the roughly 12,210 ha irrigation schemes. The Detailed Design (APD) for a global solution to the area planned for October 2021 will be reviewed and cleared by the World Bank. Further bidding documents will be elaborated. The APD plans a full and comprehensive rehabilitation of the area including: (i) complete rehabilitation of the works started under PULCI (SP3 and SP4 in Yagoua and OP2&OP3 in Maga); (ii) complete rehabilitation of the remaining schemes (SP1 and SP2 in Yagoua and OP1 &OP4 in Maga); (iii) drainage networks of all the irrigation schemes; (iv) replacement of the Logone river water intakes for SP4; (v) improvement of the intake for OP1 (Pouss) that feed into Maga Lake, currently affected by important sedimentation; and (vi) PLL of all the eight irrigation schemes. In fact, the existing intake structure SP4 have been incorrectly located/oriented, which causes the entrainment of large quantities of sediment along with the abstracted water, thus clogging the irrigation channels and Lake Maga itself. The new gravity intakes should be located at the end of the outer bank of a riverbed bend, aligned at no more than 45 degrees relative to the river flow direction.

10. An approximation of the implementation schedule for this subcomponent as well as the number of beneficiary households is presented in the Table 2.1 below:

Table 2.1: Main Activities by Project Year

Year	Activities	Number of beneficiary households
2022	Procurement of works contracts	
2023	Start of works	
2024	8,124 hectares rehabilitated	16,247
2025	1,684 hectares rehabilitated	3,368
2026	2,402 hectares rehabilitated	4,805
2027	Total of 12,210 hectares	Total of 24,420households

11. The responsibilities for operation and maintenance of the irrigation and drainage infrastructure will be transferred in two stages to the WUAs: (i) co-management period between project approval (2021) and the end of rehabilitation works with an intense training period as detailed in Subcomponent 1.3 and (ii) final transfer once works are finalized where the WUAs will take full responsibility. Arrangements, such as performance contracts and training, will need to be put in place between the transformed SEMRY and the WUAs.

12. In this subcomponent, the project will adopt a socio-technical modernization approach in conjunction with Subcomponent 1.3. This would involve not only rehabilitation (repair of what was previously constructed), but where necessary one would introduce appropriate infrastructure to enable and strengthen the practical aspects of irrigation and drainage management under the new institutional arrangements. This would require the establishment of suitably sized, financially viable, and autonomous (technical) hydraulic units for the self-governing WUAs to be established under Subcomponent 1.3. Technical design would therefore require attention to flow-control and flow-measurement at key outlet points, to enable performance-based legal agreements between the WUAs and the higher-level, bulk-water operator (SEMRY). Hydraulic structures would also be needed to enable practical and enforceable distribution modalities within the boundary of the WUA area of operation. Funds would be provided for infrastructure construction and supervision.

13. Subcomponent 1.2 also aims at PLL of the 12,210 hectares of irrigation schemes. Currently the fields are highly unlevelled which, *inter alia*, results in: (i) huge wastage of precious and scarcely available irrigation water; (ii) adversely affects efficiency of other agricultural inputs, i.e. seed, fertilizers, herbicides, labor, machinery, etc.; and (iii) the combined effect of these factors leads to dismally low agricultural productivity. Further, the unlevelled fields pose enormous restrictions for carrying out land preparation operations with normal agricultural tractors and small machinery/implements, as it is nearly impossible to uniformly apply pre-ploughing soil softening irrigation across the irrigation schemes to enable use of such machines/equipment. PLL is otherwise an extremely viable technology on a standalone basis, which brings high economic and financial returns.

14. **Subcomponent 1.3: Irrigation and Drainage Management** (US$5.4 million from IDA)**.** This subcomponent will include TA and equipment for the WUAs. It will build upon the process of irrigation management that started within the PULCI project: eight WUAs are already in place (one for every irrigation scheme), eight meeting rooms have been built and equipped for the WUAs as well as eight warehouses for the Cooperatives. A "Scheme Management Code" has been elaborated during project preparation, to be approved before rehabilitation works start, that sets out the basic rules concerning: (i) irrigation aspects of the land tenure arrangements and usufruct rights of women farmers; (ii) WUA rights and duties; (iii) WUA legal/financial oversight; (iv) infrastructure rehabilitation and transfer agreements; (v) rights and duties of the parties; (vi) a dispute resolution mechanism; (vii) WUA membership criteria (inclusion of women based on usufruct); and (viii) targets for female leadership in WUAs. The scheme management code equally includes actions to promote women's representation in WUAs, particularly in decision-making positions. These actions include awareness raising on the importance and benefits of women's participation/leadership in WUAs and training of female farmers in technical and leadership skills to facilitate their participation in WUA technical and leadership functions. The transfer process is planned in two stages: (i) co-management from the signature of the Scheme Management Code to finalization of works rehabilitation and (ii) full transfer from the signature of the Transfer Agreement (upon finalization of the works rehabilitation) onwards.

15. This subcomponent will provide TA and training to SEMRY and WUAs including *inter alia*: (i) the development and update by SEMRY of the list of land users; (ii) preparation and implementation of transfer agreements between SEMRY and WUAs; (iii) the organization of the distribution of fees (irrigation service fee to be kept by the WUA, fee for technical support for SEMRY, and land preparation services by the private sector); (iv) training in good practices of irrigation scheduling with targets and outreach measures to ensure participation of female farmers; (v) strengthening the capacities of each WUA (including a secretary/accountant and a water operator technician); (vi) the organization of awareness campaigns for community members on health (e.g. water-borne diseases) on benefits of equal access to and education for boys and girls and on economic and food security gains from increasing women farmer's access to land, water, extension, tools and inputs and education with targets and outreach measures to ensure participation of women farmers; (vii) support for the implementation and respect of the Scheme Management Code and the rules of procedure; and (viii) providing equipment to WUAs and their facilities. In addition, the TA will also work with the various Ministries involved in the elaboration and updated of an appropriate legal framework for irrigation management by the WUAs. These management activities will help ensure that the Borrower will have the ability to manage climate change-related droughts, floods, and sedimentation.

16. On land issues, the SEMRY institutional modernization will be an opportunity to clarify land tenure rights in the irrigation schemes. The TA will deal with both the land allocation process (which criteria and how these criteria have been identified). A key aspect is to make all the land right activities as transparent as possible with clear communications with beneficiaries, PAPs, and all the stakeholders involved, and publish to whom land has been allocated. To date, the irrigation schemes are State land, managed by SEMRY, and farmers have been given a

certificate of attribution to develop the State land. In compliance with the current legal framework, the irrigation schemes will remain State land but State land management will be improved and land tenure rights for users will be enhanced. One of the objectives of the TA will be to propose and set up a balanced relationship between farmers, WUAs, and SEMRY, in an agricultural production of WUA-farmers contract including technical specifications. This land tenure technical specification update will include transfer conditions, rights and obligations for all the stakeholders, fees, duration and termination conditions, etc. Also, the TA will make sure the land and the tenure rights are properly recorded. This will include support to the various units of SEMRY dealing with this, such as the GIS unit, the WUA support unit, etc., to set up an updated map to ensure sustainable land allocation management.

Component 2: Production and Support to Agriculture Services (US$27.1 million equivalent, of which US$16.2 million from IDA and US$10.9 million from beneficiaries)

17. This s *component will focus on gradually promoting a prominent private sector role to improve production, markets, and support services with an emphasis on improving efficiency along the value chain of rice* (and other irrigated crops outside the perimeter), in collaboration with the banking sector (commercial banks and microfinance institutions).It will do so mainly by promoting (i) the demand side for land preparation, mechanized paddy cultivation practices by creating service delivery mechanisms in the private sector for provision of these services and inputs through e-vouchers, training, and awareness campaigns (Subcomponent 2.1); (ii) the supply side of goods and services through matching grants for business proposals, training, workshops, and studies (Subcomponent 2.2); and (iii) the provision of organizational and business management support to farmers organizations, WUA, cooperatives, enterprises, and common interest groups (Subcomponent 2.3).

18. **Subcomponent 2.1: E-vouchers for Re-Launching Production in the Irrigation Perimeters** (US$16.8 million, of which US$8.4 million from IDA and US$8.4 million from beneficiaries). This subcomponent will support the capacity of farmers to purchase agricultural inputs, to facilitate the revival of production activities after the break due to the period of work to rehabilitate the rice fields and to enable them from the first years to carry out two rice production campaigns. An E-Voucher Manual will be prepared to support a mechanism that will help pay for (i) the irrigation and drainage service fee; (ii) land preparation; and (iii) fertilizers (see Table 2.2). For each beneficiary holding a half hectare plot of land, a subsidy of the order of US$175 (for two times) will be provided during the first year (two crops; see Table 2.2), assuming that, under the project, farmers will be able to increase production from one to two crops per year, with private sector support under the reformed SEMRY.

19. Poor land levelling and inadequate land preparation have been identified as the most significant factors that are adversely affecting the agricultural productivity in SEMRY areas. These inefficient practices consequently cause around a 30 percent loss of irrigation water as well as excessive leaching of nitrogen. SEMRY has been traditionally providing land preparation (harrowing) services to the farmers by using heavy equipment which excessively compacts the soil, entails high operational and maintenance costs, and tends to frequently break down. As a result, SEMRY can prepare only half of the irrigated perimeters in every crop season, with the other half remaining largely fallow/uncultivated. A different approach to levelling and preparing the land that is more aligned to good practices in rice producing countries would allow use of lighter and more efficient machinery as well as enable to adopt alternative conservation tillage practices, especially for incorporating organic matter into the soil. It has been successfully experimented under the PULCI project that the land can be prepared/ploughed with self-propelled power tillers and small-scale implements operated with agricultural tractors of small horsepower, if used immediately after paddy harvesting by utilizing the residual moisture and/or applying a little irrigation for softening the soil. It is, therefore, planned to create a mechanism for availability of these services in the private sector through providing matching grants (under Subcomponent 2.2 below) and e-vouchers to the farmers (under Subcomponent 2.1) for renting said machines/equipment with subsidized rates. Since smaller and technologically advanced

machinery/implements are more affordable to buy and operate, they would also provide attractive business opportunities for the prospective private service providers who see the potential offered by rehabilitation of the irrigated perimeters under the project. This system will be initiated in complete command areas of the tertiary channels as its adoption will require adjustments in irrigation water schedule of various plots depending upon growers' arrangements with the Service Provider for carrying out the land preparation/ploughing operations.

Table 2.2: Type and Cost of Vouchers for revitalizing agricultural production after rehabilitation

Type of voucher (for 0.5-hectare plot)	Year 1 (two crops)	Total (US$)
Inputs (US$200 for one crop)	50 percent (US$200)	US$200
Irrigation Service fee (US$50 for one crop)	75 percent (US$75)	US$75
Labor (mechanized work) (US$50 for 1 crop)	75 percent (US$75)	US$75
Cost of vouchers per farmer (US$)	US$350	US$350

20. A total of about 146,400 vouchers will be provided with a total value of about US$8.4 million. Given the importance of synchronizing the WUA structuring process (Subcomponent 1.3), together with the large number of farmers/vouchers, the TA of Subcomponent 1.3 will also be in charge of implementing this subcomponent. This subcomponent may also qualify for climate change adaption co-benefits. The project will specifically target women farmers to enable them to purchase agricultural inputs, pay for land preparation services, and pay for the irrigation service fee, and do PLL. Consultations with women (in small groups facilitated by a woman) will inform the women farmers about the e-vouchers and seek to understand any obstacles or risks in accessing them as well as possible ways to address those.

21. **E-voucher Manual**. An E-voucher Manual is being elaborated following the guidelines of the MINADER Manual of Agricultural Input Subsidy Procedures adopted by Prime Minister Decree on August 28, 2019. Based on the database created at SEMRY to manage land holdings and the allocation of plots within the irrigation schemes, a smartphone application could be developed for interfacing with producers benefiting from plots and subsidies. The e-voucher subsidy system is initiated by the producers, from their telephones, and with its parcel assignee identification. Each producer opens an account in a local microfinance agency that is a partner of the program and has a telephone money transfer account. All producers must therefore be strongly encouraged to take part in a process of professionalization and performance. The management of the vouchers is exclusively done electronically between the program, the microfinance agency, and the beneficiary. Delivery of subsidized fertilizer to beneficiaries will be made by local private distributors in exchange for vouchers that will be managed through mobile phones (e-vouchers) to which many farmers have access.[24] Each farmer deposits the non-subsidy amount into his bank account so that his agency can issue the corresponding electronic voucher. The local distributor receives in real time a copy of the vouchers issued and can deliver the subsidized products to the producer. The bank agency pays the distributor by bank transfer (after electronic receipt of the proof of delivery) the non-subsidy price. Periodically, for example every week or two weeks, the distributor accounts for the vouchers executed and is reimbursed the value of the subsidy granted by the program by bank transfer to his/her account.

[24]There are gaps in access to mobile phones and bank account ownership between women and men Cameroon. According to Global Findex 39 percent of men over 15 years old own a bank account compared to 30 percent of women; 31 percent of men use financial institutions compared to 23 percent of women; and 17 percent of men uses mobile money contrary to 13 percent of women (7 percent amongst the poorest people). Data from: https://globalfindex.worldbank.org/#data_sec_focus. The appraisal will focus on this, learning more about those issues in the project implementations areas and see what the project may be able to contribute.

22. Besides providing important agricultural services to the farmers, the implementation of the scheme will promote professional agricultural service provision mechanisms in the project implementation area (which could also be eligible for financing by the project on the basis of business plans, see Subcomponent 2.2 below). The first result is both the systematic "bancarization" of all producers and their generalized interconnection with SEMRY's computerized database and with the different types of suppliers of goods and professional services in the region. The second result is the acceleration of the revival of the production activity with a rhythm of two campaigns per year immediately after the delivery of the rehabilitated plots. A monitoring, evaluation, and control system will be set up to check the proper functioning of the system in the field on a permanent random basis. The third major result is obviously the development of a local and regional network of private input suppliers and private suppliers of ploughing and microplanning services in a controlled, competitive environment. Competition must be able to play its role so that prices remain under control in the interests of both producers and consumers.

23. **Subcomponent 2.2: Matching Grants for Production and Agribusiness in the** Valley (US$9.4 million, of which US$6.8 million from IDA, and US$5.2 million for the matching grants and US$1.6 million for TA). **This subcomponent will have three main windows: one for larger grants based on detailed business plans (up to US$100,000; 25 in number; 60 percent grant), one for medium-size investments (up to US$6,000; 460 in number; mainly for machinery services; 70 percent grant for men and 80 percent for women, along with a target of 30 percent female recipients), and one for small investments that may only require filling in a form (up to US$1,000; 2,000 in number; mainly for small-scale irrigation; 80 percent grant for men and 90 percent for women; with a target of 50 percent for women).Details will be provided in the Matching Grants Manual**. The subcomponent will provide grants, studies, and consultant services. These activities will help promote crop diversification, including promoting perennial crops that act as carbon sinks, while also promoting efficient water use in the face of water shortages exacerbated by climate change.

24. **Window for large grants**. This window will finance sub-projects to improve production (e.g. women-run pisciculture from borrow-pits in the perimeter), value addition (e.g. rice de-husking and packaging), commercialization (collection and transport centers, storage systems), and service provision (e.g. mechanical maintenance workshops, land mechanization services). These activities will help promote crop diversification, including promoting perennial crops that act as carbon sinks, while also promoting efficient water use in the face of water shortages exacerbated by climate change. These would, *inter alia*, include PLL, preparation, harvesting, threshing, planting, etc., and startups to innovate with low-cost technologies (e.g. linking multiple small- and medium-scale mechanization service providers with small farmers using cell-phone-based registration systems, and 'Mobile Money' – the latter has deeply penetrated into Cameroon's rural areas). Subsidies for larger business plans are expected to be capped at 60 percent[25] of the amount of the business plan built over 3 years, with a personal contribution of the promoter of a minimum of 15 percent and a bank credit/statement in the order of 25 percent, primarily covering the needs of working capital, while the grant will finance equipment and works (new buildings, agricultural machinery, plants, drying areas, silos, etc.) and TA.[26] All agribusiness companies directly or indirectly involved in a value chain will be eligible for the larger grants (production, seed, processing, mechanization, irrigation, agricultural machinery, plant protection, etc.). The same company will be eligible to receive only one grant over the duration of the project. The business plan will have to be financially viable. The receiving enterprise will have to be in good standing, and detailed financial and market information made available (e.g. financial statements of previous years and the projected financial statements, history of production, marketing and banking history, etc.). The proposal will follow a standardized outline to be detailed in the Grants Manual to be elaborated on the basis of the provisions of the grant handbook for agricultural inputs and equipment from MINADER. The

[25] The large grants could also be higher for women-run enterprises. One needs to define criteria for a women-run enterprise.
[26] Bank credit will not be a requirement in case a promoter is able to provide the entire counterpart.

business plan proposals for the larger grants will be evaluated by a multi-stakeholder commission set up by the project under the supervision of the SEMRY, before being transmitted to a PFI for evaluation by its credit committee. The World Bank will give a non-objection to each of the large grants.

25. The subcomponent will finance matching grants, studies, and consultant services. These activities will help promote crop diversification, including promoting perennial crops that act as carbon sinks, while also promoting efficient water use in the face of water shortages exacerbated by climate change. The CGER will ensure the technical and accounting support of the recipient company or famers' group during the implementation of its sub-project and report regularly to the PFI and to the project.

26. **Window for medium grants**. This window will focus mainly on mechanization services, such as land preparation (power tillers) as well as rice processing (threshers) and similar type of equipment. Poor land levelling and preparation is identified as the single most limiting factor in the Benue and other Cameroon irrigation schemes, resulting annually in 30 percent or more losses in the efficiency of water use, leakage of nitrogen, soil compaction, and ultimately poor production. SERMY traditionally provided land preparation services using heavy equipment which compact the soil, require high operational and maintenance costs, and have been provided inefficiently (no land levelling has been performed in more than 40 years). As a result, land preparation services are often suboptimal, extending to only a portion of the available irrigated perimeters. Proper precision levelling interventions as part of the land preparation routine would improve water use efficiency.

27. A different approach to levelling and land preparation more aligned to good practices in rice producing countries would allow to efficiently regulate soil moisture, which in turn would allow lighter and more efficient machinery, using alternative conservative tillage approaches, especially for incorporating organic matter into the soil. Since smaller and more technologically advanced machines are also more affordable to buy and operate, they would also provide an interesting business opportunity for prospective private service providers who see the potential offered by the rehabilitation of the irrigated areas under the project. The emergence of companies specializing in the maintenance of agricultural equipment and agro-processing will be given priority. The business plans will have to be financially viable. The proposals will need to follow a standardized outline to be detailed in the Grants Manual which is to be prepared at the beginning of the project. Partnership agreements will be established between the project and the various financial institutions involved in the rice sector. The CGER will ensure the technical and accounting support of the recipient company or famers' group during the implementation of its sub-project and report regularly to the PFI and to the project.

28. **Window for small matching grants (less than US$1,000, subsidy of 80 percent for men and 90 percent for women).** This window of less than US$1,000, with 2,000 sub-projects, is mainly for small-scale irrigation, but there could be also other aspects, such as threshers and small mechanization. In this window, the "sub-projects" will include a simple technical proposal (only investment costs, not recurrent costs) and a simple financial analysis. The small-scale irrigation will only be **outside** the SEMRY irrigation schemes. This is very important so that there is no mix with the reform of the state-owned irrigation schemes (and land). There will be approximately three models/options of small-scale irrigation sub-projects (e.g. only the moto-pump, or borehole plus moto-pump, or borehole plus moto-pump plus improvements of the efficiency), to be defined in the manual. The estimated area to benefit from improvements in small irrigation will be approximately 1,000 ha. Sub-projects of small-scale irrigation, as part of the windows for matching grants, will benefit from the Communication campaign and from the framework for training and TA as forecast on Subcomponent 3.2.

29. At present, farmers, mainly grouped near the SEMRY perimeters of Maga and Yagoua, irrigate manually or with motor pumps small plots of 500 m^2 to 1 ha, from the supply or drainage channels of the rice perimeters from the Logone river, or from shallow groundwater (less than 3 meter). The spontaneous development of this

small-scale private initiative irrigation model, more particularly in Yagoua, seems to be suitable for the production of off-season vegetable crops from October to April, and for complementary irrigation rainfed rice from May to September, as long as it is out from the irrigation scheme. Farmers use a production strategy combining and alternating off-season crops of different cycles on the irrigated plots in order to generate a continuous income to meet the daily expenses of the household and the production costs of the farm. This activity is complementary to that carried out on the irrigation schemes of SEMRY for the cultivation of rice (from December to May) on an average area of 0.5 ha.

30. Small-scale irrigation is mainly practiced by women from groundwater manually extracted from unlined wells (sumps). The techniques used considerably limit the irrigated area which rarely exceeds 500 m^2. The use of manual drilling and motor pumps is not widespread, unlike what is observed in the Benue valley. Access to these techniques would make it possible to multiply by 5 to 10 times the areas irrigated by individual farmers, including women, as several cases in Maga and Yagoua demonstrate.

31. Manual drilling is carried out by several local private operators located in Maga and Yagoua. They use the manual rotary technique, capable of reaching a depth of 15 m (diameter 63 mm) in less than a day for drilling intended for irrigation at a cost of FCFA 100,000. Another manual drilling method, "rapid well jetting," originating in northern Nigeria and mastered by private operators from Garoua, would allow drilling in just one hour to a depth of 7 m, sufficient for irrigation and the local hydrogeological context, for less than 50,000 FCFA. The productivity of the aquifer is compatible with the pumping rate of 15 m3/h observed by farmers for the supply of earth channels used for gravity irrigation by market garden crops.

32. The groundwater mobilization potential in the Logone Valley from Yagoua to Kousséri, and more particularly in the immediate vicinity of the SEMRY perimeters of Maga and Yagoua, is very significant, due to the presence of a generalized aquifer not exceeding 10 meters of depth and made up of sandy-clayey (quaternary) sedimentary formations, up to 50 meters thick. The areas favorable to small-scale irrigation in the immediate vicinity of the SEMRY perimeter are 1,700 ha in Maga and more than 2,300 ha in Yagoua. Manual drilling is a solution to limit illegal pumping in the supply or drainage structures of the SEMRY irrigated perimeter. It also makes irrigation more efficient (less water loss) by bringing the water source closer of the areas to be irrigated.

33. Motorized pumping with low-powered gasoline pumps (three to five horsepower), combined with manual drilling, is a major factor in the expansion of small-scale irrigation. The presence on the market of Maga and Yagoua of motor pumps from Nigeria (made in People's Republic of China) with a cost ranging from FCFA 75,000 to FCFA 120,000, depending on the power and quality, offers the possibility to each farmer to acquire, with own funds, the motor pump suitable for his/her needs and the financial means at his/her disposal. The estimated lifespan is between two and five years, but in reality, it depends on the number of hours of operation, and the attention paid to maintenance. Water production costs are mainly made up of fuel costs. Despite the cost of fuel (400 to 500 FCFA/liter) which can reach 40 percent of the total amount of costs, this model of small irrigation is a profitable activity. The net operating profit for a 0.5 ha market-gardened irrigated area with manual drilling and motor pump is close to FCFA 1.5 million (case of Yagoua).

34. Irrigation carried out manually with a bucket is daily and arduous, but it becomes weekly (once or twice a week) when it is motorized with gravity irrigation by basin due to the nature of the poorly permeable soils which provide better water retention in the soil. However, the transport of water in gravity earth channels depends on the topography of the plot and considerably increases the duration of irrigation and pumping, in particular due to water losses and the slowing down of the speed of water in the canals. For example, the introduction of the technique of water transport by a Californian network, widely spread in several countries in West Africa, would reduce by 30 to 40 percent the time spent on irrigation with an investment cost affordable by farmers. The lack of

financial support makes it difficult to improve and expand small-scale irrigation in the immediate environment of Maga and Yagoua. The investment capacity of producers engaged in this irrigation model is less than FCFA 100,000 for an average area of 0.5 ha. The investment cost of a small irrigation model composed of manual drilling, a low power motor pump and an efficient water distribution of the Californian network type is less than FCFA 500,000 /ha. This model is particularly well suited to small individual farmers, including women.

35. A system of preparation, monitoring, and supervision of beneficiaries will be set up and coordinated by the PIU. The scheme will have to follow the standards of the Grant Manual. The Business Plans and the Matching Grant Manual should incorporate safeguards. Thus, one of the complementary documents of the Business Plan will be the E&S review form to be validated during the process of elaboration of the Grants manual.

36. The component aims to target women farmers (30 percent of all matching grants), and the PIU Gender/GBV Expert in collaboration with local NGOs and women associations will ensure that women are informed and that their opinions and concerns about the implementation are taken into account. The PIU will be responsible for implementation and may be supported by a firm for the preparation, training, and monitoring of files. A specific manual for the implementation of each of the three windows will be elaborated and presented to the World Bank before the implementation of the project.

37. Presently, there are no farm machinery suppliers in the project area and importers/dealers in other parts of the country are also reluctant to open their branches or appoint sub-dealers. Awareness will be created amongst agricultural machinery and equipment dealers, importers, and manufacturers in Douala, Garoua, Lagdo, etc. in Cameroon as well in adjoining Chad and Nigeria about the emerging business opportunities in the project area. They will be motivated and facilitated to open their branch offices, showrooms, workshops and/or appoint their dealers, agents, distributors, etc., in Yagoua. In case it was realized that they are not still coming forward, some financial incentive will be provided to motivate them to start their business at Yagoua, in the form of a matching grant. A simple mechanism would be followed for this purpose that may require, among others, that the Supplier: (i) is a legal entity; (ii) keeps a minimum number of agricultural machinery/implements with their essential spare parts at the premises; (iii) appoints/engages one/two mechanics/operators to impart training to its clients who would purchase said machinery as well as to provide aftersales repair and maintenance services; and (iv) agrees on maintaining its business for at least three years. The PIU will advertise for invitation of applications from prospective suppliers which will be received/collected and scrutinized by the designated committee *vis-a-vis* the approved criteria. A list of eligible suppliers will be developed for supplying the equipment to private sector service providers envisaged to be created under the project. The details of this mechanism will be provided in the above-mentioned manual.

38. Standards and specifications of various types of equipment required to be promoted under the project will be developed and ceiling prices of each will be determined/fixed and periodically updated. The PIU will advertise for invitation of applications from farmers' cooperatives, private sector entrepreneurs, and individual farmers, interested in provision of agricultural machinery rental services as Service Providers in the project area. Applications will be received/collected in the PIU and will be scrutinized by the designated committee *vis-a-vis* the approved criteria. The prospective Service Provider meeting the criteria will be asked to negotiate/finalize the price of the equipment of its choice with eligible Suppliers on the PIU list. The Service Provider will then prepare bank draft/pay order/banker's cheque in favor of selected suppliers and submit it to PIU with the request to issue a supply order to the concerned Supplier. The PIU will issue the supply order to the supplier through a written letter to deliver the equipment to the Service Provider within a stipulated time. The supplier will deliver the equipment to Service Provider within timeframe specified in the supply order under intimation to PIU. On supply of the equipment to Service Provider, the PIU will arrange its inspection to ensure that it meets standards and specifications provided in the supply order. After ensuring successful delivery of equipment to Service Provider, the

PIU will hand over the original *bank draft/pay order/banker's cheque*, already provided by Service Provider, to the supplier along with project's share. The details of this mechanism will be provided in the above manual.

39. Table 2.3 provides a summary of the support for the three windows of the subcomponent. The communication campaign is one and a consultant firm will develop an integrated strategy for the three windows, with specific actions targeting women farmers. Capacity building for service providers will have different objectives (i) train people to support the preparation of business plans; (ii) training in managerial and administrative skills to ensure the sustainability of the new or existing business (e.g. how to manage accounts, how to calculate unitary prices, how to apply taxes, etc.); and (iii) improving the technical capacity of service providers by means of local technical institutions or by means of trainers. Capacity building and training services for farmers: will be provided by the CIT, farmer school, local technical institutions, etc. There is a target of 50 percent of women benefitting from such training. Women farmers will be regularly consulted on the accessibility and adequacy of those training activities to their needs and activities will be amended should it be necessary. Other strategies will be developed by the PIU under Subcomponent 3.2. Depending on the window, the proposer would need support to prepare their business plan. This support will be provided in principle by the CGER, or by private individual consultants (which were prepared by the CGER under the Capacity building for service providers). The validation of the business plans will be under the responsibility of a committee which will include the participation of the MINADER, SEMRY, PIU, and private sector.

Table 2.3: Summary of Communications and other Support Provided to the three Windows

	Small window (PIU 1 person)	Medium window (PIU 1 person)	Large window (PIU 1 person)
Communication campaign	Consultant (cabinet)		
Capacity building and training service providers	Consultant (cabinet)/CGER/technical institutions		
Capacity building and training of farmers	CIT/farmer school/technical institutions		
Elaboration of sub-projects	Service providers + CGER		
Validation of sub-projects	Committee		

40. **As soon as the project becomes effective a series of measures will be taken**:

(a) **Within the transformational plan of SEMRY, the present fee will be split into two fees:** (i) irrigation and drainage service fee (that will stay with the WUA), and (ii) land fee and general support for SEMRY services.

(b) **Matching Grants will start implementation in Year 1.** There are over 460 matching grants at the intermediary level of US$6,000 in the area, and this will increase interest from agro-business.

Table 2.4: Comparison of Matching Grants under the VIVA Benue and VIVA Logone Projects

	Small Window (up to US$1,000)	Medium Window (up to US$6,000)	Large Window (up to US$100,000)
VIVA Logone	2,000	460	25
VIVA Benue	2,000	500	100
TOTAL	4,000	960	130

41. **Combining institutional and on-the-ground measures, there will be a gradual increase of PSP in the agricultural activities in the North and a transition for land preparation from purely government (SEMRY) to the private sector.** In addition, there are economies of scale with VIVA-Benue (500 more matching grants at the same intermediary level). There will be more than 20,000 ha of irrigated land in the North and Far-North, which is expected to generate interest from private sector providers.

42. **Subcomponent 2.3: Organizational Management Support Centers – CGERs** (US$1.0 million from IDA)**.** The project will finance TA (with the consulting service of Subcomponent 2.2), equipment and small works for their facilities to promote a network of *CGERs*. An enterprise-based delivery of support services, with the status of cooperative society under OHADA law, CGERs will be one-stop-shops that provide smallholder farmers, producers organizations, WUAs, cooperatives, and enterprises with quality assistance services that are affordable and tailored to the financial capacities of recipients. These services will typically include accounting, FM, procurement, management, and in general all functions that support organizational and governance for organized producers and enterprises. Women farmers will be regularly consulted on the accessibility and adequacy of those training activities to their needs, and activities will be amended should it be necessary. The model is based on the successful experience promoted by SAED in Senegal. A cost recovery system will reduce any dependence from the project after Year 4 of implementation. Two CGERs will be established in Yagoua and Maga during the first and second year of implementation, with the assistance of an operator. To ensure a proper sequencing of the implementation activities, the contract of the operator will have to be in place prior to the effectiveness of the project.

43. A feasibility study has been conducted during the project preparation to anticipate the operation and development needs of the two CGERs. The study will examine challenges and opportunities for supporting women farmers and women's organizations, and for ensuring that women are informed and assisted with the application for e-vouchers and grants. It should be noted that the CGERs of Yagoua and Maga will be part of the CGER network. The CGERs are private organizations that should be able to finance themselves by selling their weaning products to enterprises and producers in the Logone Valley by the end of the program, without restriction. Their subsidy from the program will be regressive. At the same time, TA[27] is planned from SAED and the Senegalese CGER to support the structuring and development of the network and its activities in the Logone (and Benue) Valley. The CGER will thus make it possible to facilitate the process of professionalization of the companies and producers of the valley, their banking, digitalization, legal compliance, structuring into reliable and viable professional organizations, and the same for the WUAs. At the end of the program, the CGERs should be able to continue to operate independently, while continuing to collaborate with SEMRY, including as a service provider.

Component 3: Support to Sector Development and Implementation (US$37.4 million equivalent, of which US$30.4 million from IDA and US$7.0 million from the GoC)

44. **Subcomponent 3.1: Institutional Strengthening** (US$8.2 million from IDA). This will include consultancy services, PBCs, and an O&M contract. The strengthening of public institutions will relate mainly to the reform of SEMRY and the strengthening of sectoral administrations, in particular MINADER, MINEPDED, local authorities, and traditional chiefs.

45. Regarding SEMRY reform: A transformational plan of SEMRY has been elaborated by a management consulting firm to support that SEMRY's evolution into a public establishment/agency ("établissement public") exercising those functions that will remain the role of the State. In this sense, SEMRY's new role will be: (i) maintenance of main infrastructure (Maga dam, Logone dike, access roads, Maga reservoir, and main drains); (ii) support to farmers; and (iii) general development of the area. This will involve the gradual transfer of some of its

[27] Technical assistance will also build CGES capacity to identify, analyze, and respond to the needs of female farmers.

current responsibilities, namely: rice milling (to one or more private concessions), plowing services (to private providers), management of the irrigation network (to WUAs), and so on. A new organogram has been elaborated, with a social plan and an action plan for the transformation into the new SEMRY has been agreed.

46. **The following activities are envisaged in this subcomponent:**

a) **Consulting service for supporting the implementation of the modernization plan of SEMRY.**
b) **A PPP contract— an O&M contract, a concession contract or a leasing contract to transfer the processing and commercialization aspects of SEMRY.** The selection of the Operator would be through a competitive process. Details on the procurement process are provided in Annex 1; and
c) **Consulting service for an IVA of the PBCs.**

47. **Privatization of land preparation** will be allowed from the beginning of the project to allow private sector work in the perimeters. Farmers will be allowed to contract services or prepare land by a third-party or by themselves if they have access to equipment, for instance through matching grants**.** Once the perimeters are rehabilitated, the water management infrastructure will be transferred to WUAs.

48. **A PPP contract—an O&M (Operate and Maintain) contract, a concession contract, a subcontracting agreement or a leasing contract to transfer the commercialization aspects of SEMRY.** The selection of the Operator would be through a competitive process in accordance with the Cameroonian regulation in force. The strategy to attract the private sector is to guarantee transparency of the procurement process and to associate the transfer to the private sector with substantial subsidies – helping to upgrade utilities and the fleet of vehicles and materials, as needed. In sum, it shall consist in building trust and attractive financial arrangements.

49. In line with the above-mentioned objectives, a PPP is reasonably the best approach. It would certainly be more like a delegated service system, similar to O&M (Operate and Maintain Contract) or a full-fledge concession contract. Under the O&M arrangements, the Operator shall pay a rent for the use of the installations. It is proposed, at this stage, that the remuneration would be a lumpsum per ton of the volume of rice commercialized by the Operator. The selection of the Operator would be through a competitive process with transparent and clear criteria. **The qualified Operator with a technically responsive proposal and a better financial offer would be selected**. It is also important to select an entity playing the role of MINADER-CTR, so that the execution of the PPP contract is adequately supervised over the duration of the contract. Particular attention should be allocated to ensuring a proper maintenance of the installations, to maintain the value of the assets.

50. Potential operators would certainly be the current importers of rice in Cameroon. Ensuring competition in the transformation and commercialization of rice in the sub-region is indeed a long-term objective which might not be achieved overnight. So far, importers are buying, since decades, rice from Asia, and the State-owned Enterprise (SEMRY) has been operating alone in the remote sub-region of the project. The project will help the Borrower to demonstrate the viability of such arrangements with the private sector.

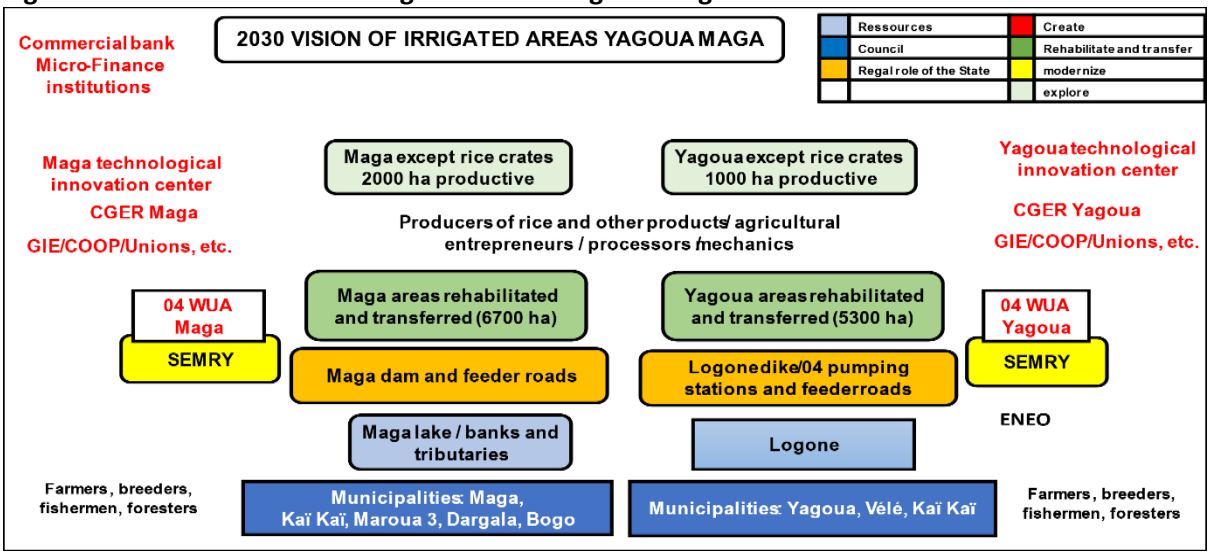
51. The terms of the PPP contract, the Initial Selection Documents, and the Request for Proposals shall be approved by the relevant governmental entity, which shall include not only the applicable Ministries but also and other national procurement and financial authorities. The PIU should be managing the procurement process, with assistance, as required, from a consultant or a consulting firm, but subject to the ultimate approval by the national authorities and the World Bank.

52. **Implementation of the Social Plan.** This has been elaborated during preparation and will need to be implemented by SEMRY with support from a cabinet during project implementation. Supplementary activities such as re-training of staff for new job opportunities and mediation services will also be provided.

53. The Figure 2.1 below summarizes the long-term vision for the management of the irrigated zones of Yagoua and Maga. It shows SEMRY's retained roles, reduced in scope but strengthened, and the roles that SEMRY will have divested to other entities, including WUAs, commercial banks and microfinance institutions, Technology Innovations Centers, management groups and cooperatives, and other entrepreneurs.

54. The transformed organization structure of SEMRY, is planned to be fully operational by 2024. The new general organization structure of SEMRY has four Directions: (i) General Direction, (ii) Technical Direction, (iii) Administration and Finance Direction, and (iv) Autonomous Direction for Maintenance and Equipment. The transformation plan was elaborated during project preparation and its implementation is part of this project, during a period of 5 years, with specific restructuring milestones that can easily be monitored and also reviewed at mid-term, if necessary.

Figure 2.1: Vision 2030 of the Irrigation Areas Yagoua-Maga



55. **PBCs for supporting the reform process.** Nine (9) PBCs, independent of each other, have been selected for a total amount of US$6 million, eight with SEMRY (disbursement of US$5.5 million) and one with the WUAs-(disbursements of US$0.5 million), see details in Annex 3:

1. **SEMRY approves the amendments of its Statute as with terms and conditions of the PIM** (US$0.5 million)
2. **Regularization and update of SEMRY's land tenure titles** (US$0.5 million);
3. **Land preparation services, irrigation service fees, and SEMRY's fees are separated effectively** (US$0.5 million);
4. **SEMRY implements the decision adopted under PBC#3 and improves collection rate of their fees** (US$1.0 million);
5. **Each of the 8 WUAs collects irrigation service fees** (US$0.5 million)**;**
6. **Effective transfer of the management of the 8 rehabilitated irrigation schemes, between SEMRY and each of the 8 WUA (**US$1.5 million);
7. **Developed and conducted annual performance evaluation on the implementation of the Scheme Management Code in the 8 rehabilitated irrigation schemes** (US$0.5 million);
8. **Implementation of SEMRY's social plan** (US$ 0.5 million)**;** and
9. **SEMRY has approved the transfer of processing and commercialization activities to the private sector** (US$0.5 million).

56. Furthermore, a twinning arrangement (South-to-South) between *SAED (Société d'Aménagement et d'Exploitation des terres du Delta et de la Vallée du fleuve Sénégal)* in Senegal and SEMRY is envisaged in order to help SEMRY modernize and assume their responsibilities. As this project will be implemented in one of the poorest regions of Cameroon, where basic public services are limited, this project will finance activities to enhance the level of access to basic services for the local population, through the construction of water supply networks and on-site sanitation or other basic facilities, expressed by local communities.

57. Finally, institutional support at the national level will also be provided in the context of the preparation of the draft Water Code and the development of a joint decision on WUA establishment and operation. These steps are necessary for the creation of an appropriate legal framework for sustainable WUAs. In addition, in order to help strengthen the rice sector at the national level, the project will provide active support to MINADER and the national rice professional organizations to enable the emergence of a rice inter-professional organization, recognized by State, and capable of representing all professionals at the national level. The new rice-growing, inter-professional organization to be created will be in line with the provisions of the recent 2020 decree, which, beyond a private inter-professional association organized around the rice/paddy product, must then be recognized by the State as the sole interlocutor representing all categories of professions in the rice-growing sector (OIRE: State Recognized Inter-Professional Organization).

58. The project is part of the dynamics of the ongoing reforms of the agricultural sector supported by all of Cameroon's technical and financial partners in order to promote a modern and private emerging agriculture. This will notably involve the establishment at the government level of a National Agricultural Development Fund (NADF) with several specialized windows for subsidizing (i) seed production, (ii) vouchers for agricultural inputs and services, (iii) business plans of agricultural production and processing enterprises, and (iv) advisory support to agricultural enterprises and their professional organizations. The NADF is intended to bring together the various financing tools, and in particular the CASs (special purpose accounts) that are due to disappear, in a mechanism organized in specialized and fully digitalized windows.

59. **Subcomponent 3.2: Innovation and Agricultural Training** (US$6.4 million from IDA). The project will promote Subgrants (US$4.9 million) based on a Subgrant Manual with local actors for improving irrigated agriculture in the Logone valley at three levels: (i) higher education such as University of Maroua; (ii) TVET level; and (iii) at local level by the creation of Centers for Technological Innovation (CTI)/*Centres d'Innovation Technologique (CITs):*

- **At the higher education level**, GAs will be arranged with the Universities of Maroua and Dschang for the organization of training modules on the centers of interest of the project, such as agricultural mechanization, irrigation, rice growing, quality of rice products, and climate-resilient agriculture;
- **At the TVET level**, a GA will be signed with the Lycée Technique Agricole de Yagoua located in the project intervention area as well as with other public and private technical training centers (Centre de Formation Professionnelle). The project will support the creation and revitalization of vocational training centers in sustainable irrigated agriculture and agricultural machinery in the Yagoua and Maga areas; and
- **At the local level**, subgrants will be focused on the conversion of SEMRY's experimental farm in "Vounaloum" Yagoua and with an antenna in Maga into a CTI that will bring the participation of farmers organization into the operation and governance of the new interprofessional associative structure. Collaborations will be sought with existing institution such as AfricaRice, IRAD, IFDC and others. The CTI will become a major center for technical training in the region.

60. **At the local level**, innovation will be supported by project financing of a newly created CTI/*Centre d'Innovation Technologique (CIT)* to be set up under Subcomponent 2.3. The CTI will be set up as an interprofessional association (OI research and development (R&D) for rice) with a board of directors, including key stakeholders of the Logone Valley (WUAs, Cooperatives, Common Interest Groups (CIGs), Centre Regional d'Appui a la Professionalization Agricole (CRPA), CNPC-C, Institute of Agricultural Research for Development (IRAD), MINADER, and SEMRY). The establishment of the CTI will be part of the agreement of the TA of Subcomponents 1.3 and 2.1, while the support for the implementation will be subject to specific agreement between the PIU and the newly established CTI. The CTI will be producing pre-basic and basic seeds and monitor the seed program, while farmers will produce certified seeds. The CTI will be led by an agronomist specializing in technological innovation, in partnership with IRAD and Africa Rice within an MoU for provision of TA, and be advised by the PIU Agronomist Specialist during the project.

61. The VIVA BENOUE and VIVA LOGONE projects will support the development of an interprofessional organization (association) to develop technological innovation and vocational training centers (CITs) specialized in irrigated agriculture, flooded rice cultivation, and appropriate production and processing technologies. The Yagoua and Lagdo centers will also have, as their main function, the production of pre-basic and basic rice seeds in order to supply seed producers in Logone and Benue with high-potential seeds. The Yagoua center will be set up on the current SEMRY seed farm in Vounaloum and the Lagdo center on a perimeter developed by MEADEN near the fish farming station on the right bank. The specific terms and conditions for the use of this State-owned land and its development will be set out in the partnership agreements drawn up between SEMRY, MEADEN, and the inter-professional association. The agreement also provides for the establishment of a branch of CIT Logone in Maga, on the one hand, and the creation of a branch of CIT Benue on the left bank in Lagdo, on the other hand.

62. It is important to underline the importance of the two centers being able to work in synergy in order to optimize costs and reduce the costs of expertise, management, supervision, etc., because they will be working on the same issues, with the same experts and advisors, and on very similar irrigated perimeters. The simplest option will be to place the future association of centers for technological innovation and vocational training in irrigated rice growing under the supervision of the next recognized inter-professional State organization (OIRE, the draft decree on OIRE is being signed by the Prime Minister's Office), a formula that should soon replace the status of public utility. As the two projects must simultaneously support the emergence of the rice inter-professional organization at the national level (Subcomponent 3.1), the structuring of the association that will manage the CITs anticipates the establishment of the state-recognized inter-professional organization.

63. Since in the Far North region there are much deeper gender disparities in access to secondary education,[28] women and girls will be specifically encouraged to take part in the trainings and education options through collaboration with local NGOs and women associations to share the information as well as feedback about possible obstacles and risks related to participation in those activities.

64. The OIRE will be subsidized by the VIVA BENUE and VIVA LOGONE projects on the basis of partnership agreements. The association's business plan and financing plan will provide for a gradual reduction in subsidies from the two VIVA projects, compensated by an equally gradual increase in income from the sale of seeds, services, and training. Even if it seems difficult to envisage self-financing, it seems important that the CTI association should

[28]According to MICS 2014, secondary school enrolment in the Far North region is 32 percent for boys, while for girls it is only 16 percent (the lowest in the whole country- the average for girls in Cameroon is 50 percent). About 21 percent of all researchers in Cameroon are women (UNESCO, June 2020), and according to Cameroon's Ministry of Higher Education, only 7 percent of the country's full professors are women. During appraisal, the project Gender Expert will analyze the challenges that girls and women face in accessing the local higher as well as TVETs and provide recommendations how the project can help to address them.

be able to cover a significant part of its own expenses by the end of the projects in seven years' time. Eventually, the sustainability of the ITAs and their subsidy will be discussed with the Government and the national rice interprofessional organization for R&D Rice.

65. Agricultural vocational training will be promoted to transfer the innovations tested by the CTI to the relevant stakeholders of the Logone Valley and to the various agricultural training institutions in the region. The CTI will periodically organize demonstrations and training sessions in the Logone Valley for rice producers, extension agents, teachers, students, and other relevant categories with an emphasis on small-scale production, mechanization, and small-scale irrigation. The CIT association will recruit at least one agronomist specializing in technological innovations and one agronomist specializing in seeds and will need to have its own technical and operational staff in each center. Each PIU of VIVA LOGONE and VIVA BENOUE will have its own agronomist specialized in innovations and professional training who will collaborate permanently with the association's managers in the two centers and their branches. They will thus contribute directly to the achievement of results throughout the duration of the project, in particular on issues of vocational training and technology transfer to local stakeholders. These specialists can then later be integrated into the MEADEN and SEMRY teams to ensure the continuity of the partnerships and support needed over the long term.

66. The TA recruited to support Subcomponents 1.3 and 2.1 of the VIVA projects comes into play in the first few years for the setting up of the association and for its support in terms of organization and management, bearing in mind that Lagdo and Yagoua must be able to manage Lagdo and Yagoua at the same time (internal rules, organization chart, job descriptions, business plan, financing plan, cash flow plan, work plan, partnership agreements, bank accounts, equipment, facilities, protocols, employment and service contracts, acquisitions, etc.). The association will join the CGER as soon as possible in order to benefit from its support in accounting and management, preparation of business plans and search for financing. The subgrants will facilitate partnership agreements with institutions such as IRAD and AFRICA RICE that will enable the CIT association (OI R&D Rice) to receive scientific support on R&D issues: rice varieties better adapted to different soils according to the seasons and cycles, cultivation techniques preserving organic matter and soil fertility, reasoned fertilization and phytosanitary protection, control of the water level and supplementary irrigation, small-scale mechanization of production and processing, energy optimization, etc.

67. The CTIs will have to relaunch R&D on varieties and the production of pre-basic and basic seeds in order to diversify the genetic resources used in the Logone and Benue valleys. It is indeed imperative to rapidly reduce the risks associated with the use of a single variety (IR46) for several decades, even if it still gives satisfactory results. The objective is to be able to increase production yields in the rainy and DSs in the irrigated perimeters, knowing that access to water can be variable, but also to be able to offer varieties adapted to the various production zones outside the plots where water management is more uncertain, or even difficult. Even if the perimeters are developed by the VIVA projects to allow two paddy harvests per year and are a priority in the government's rice production model, the CITs must also be able to propose viable technical solutions for producers located outside these perimeters, where water regulation is more difficult. The CITs must also be able to test and propose rice varieties that allow them to better target certain market segments with cultivars that have better production yields, but also better hulling yields, with less breakage, other colors, other tastes, etc. The number of varieties available globally, and within Africa Rice in particular, is considerable, and this potential for innovation is totally under-exploited in Cameroon. With the advisory support of experts from this institution, testing protocols will be developed and put in place to expand the national range.

68. IO R&D Rice functions as an innovation platform capable of testing, adapting, and sharing knowledge and seeds with all professional actors in the rice sector. The training sessions organized on seed production and technological experimentation sites are at the same time places for exchanging experiences, sharing the concerns

of professionals on all subjects of production and processing, learning and overall strengthening the capacities of all stakeholders. The platform will also make it possible to broaden the centers of interest beyond the irrigated rice sector to include lowland rice cultivation, diversification of fully irrigated crops or crops with supplementary irrigation, semi-industrialized agriculture, agroforestry and all issues of adaptation to climate change in a context where improving productivity and its sustainability are imperative. The experiments are mainly carried out in the resort.

69. **Subcomponent 3.3: Project implementation and M&E Support** (US$22.7 million, of which US$15.7 million from IDA and US$7.0 million from the GoC). The project will continue to use the PIU of the PULCI for the day-to-day implementation of the project covering technical, administrative, social and environmental safeguards as well as contract supervision roles, in compliance with World Bank procedures. In addition, the strengthening of SEMRY and a gradual transfer of responsibilities to SEMRY will be at the core of project implementation; for this purpose, an audit and strategic plan of SEMRY will be elaborated by TA.

70. The PIU will facilitate implementation of the project, M&E, FM, and procurement. The PIU will have the following responsibilities: (i) consolidating annual work programs and budgets; (ii) facilitating the implementation of project activities; (iii) ensuring that project implementation is carried out in conformity with the project implementing manuals: technical, M&E, financial, procurement, and disbursement procedures agreed between the PIU and the World Bank; (iv) M&E; and (v) preparing and transmitting technical, financial, environmental, and M&E reports to the PSC, RTMT, the World Bank, and other key stakeholders. The PIU will include: a Coordinator, Change Management Specialist, FM Specialist, Procurement Specialist, M&E Specialist, Environmental Specialist, Social Specialist, Gender Specialist, Communications Specialist, Agri-business Specialist and Agri-finance Specialist, two Accountants, and an Internal Auditor. In addition, all the necessary studies to undertake this project directly (feasibility, ESIA, etc.) or indirectly (CGER study, small-scale irrigation, etc.) are included in this subcomponent.

Component 4: Contingent Emergency Response Component (CERC) (US$0.0 million from IDA)

71. **The CERC will be established and managed in accordance with the provisions of World Bank IPF Policy** paragraphs 11, 12, and 13. In case of an eligible crisis or emergency, the Recipient may request the World Bank to re-allocate project funds to support emergency response and necessary reconstruction. This component would draw from the uncommitted resources under the project from other project components to cover the emergency response. A specific Emergency Response Operations Manual will apply to this CERC component that will include detailed operational guidelines for implementation, and its approval by the World Bank will be a disbursement condition.

72. **Arrangements for the CERC**. All expenditures under the CERC will be appraised and reviewed to determine if they are acceptable to the World Bank before any disbursement is made. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, recovery, and reconstruction.

73. **PIM**. A PIM has been prepared. The PIM covers the following areas: general purpose of PIM, project history, objectives and components, implementation timeline, institutional arrangements, landscape's overview, beneficiaries and location, budget, accounting policies, system of accounting and financial reporting, administrative procedures (operating procedures, administrative/financial, procurement, M&E, and management of fixed assets).Five separate Manuals (E-vouchers, Matching Grants, WUA, Local Actors for Agricultural Innovation and Training, and M&E) will detail the specific arrangements for those categories.

74. **Annual Work Plan (AWP)**. No later than September 15 each year (or one month after the effectiveness date for the first year of project implementation), the Government will prepare a draft annual work plan and budget

for the project for the subsequent calendar year of project implementation to be reviewed by the World Bank. AWPs and budgets may be revised as needed during project implementation, subject to prior written approval by the World Bank.

75. **World Bank supervision**. M&E will be managed by the PIU. The World Bank team will assist the PIU in tracking performance indicators during regular implementation support missions. A World Bank team will visit Cameroon and the project site twice a year following effectiveness of the project to supervise ongoing activities.

Monitoring and Evaluation

76. Project-level M&E systems, which will be detailed in the M&E manual, will track progress during implementation, measure intermediate outcomes, and evaluate project impacts. The M&E system will capture information on project results against the targets set as part of the RF.

77. To inform RF indicators at project inception, a baseline survey was conducted. Beneficiaries will be surveyed subsequently in Year 3 (mid-term) and Year 7 (project end) to track changes in their livelihood conditions attributable to the project. The PIU will be responsible for the overall monitoring and reporting of project progress. In addition to regular monitoring and reporting on the agreed project indicators, activities to be monitored include the timely, efficient, and transparent supervision of procurement and contract management; infrastructure construction; effective implementation of the Environmental and Social Management Plan and RAP; and successful completion of studies and training activities.

78. Progress reports will be prepared for each semester of project implementation and will be submitted to the World Bank no later than 45 days after the end of the period covered by the reports. Monitoring of results and outcomes, in accordance with the project's RF (Section VI), will be reported in the project progress reports. An M&E specialist will be retained at the PIU to implement and coordinate all M&E activities under the project. Furthermore, the World Bank will supervise the project over its lifetime. Up to the Mid-Term Review (MTR), which will be carried out no later than three and a half years after effectiveness, the project will produce semi-annual reports. The MTR will reassess the periodicity of project implementation reports as may be required.

ANNEX 3: Performance Based Conditions

1. **To verify progress made by SEMRY and the WUAs against the expected achievements set for each PBC to authorize disbursements under Component 3 of the project**, SEMRY shall select, hire, and retain one consulting service for supporting the implementation of its modernization plan (PBC support) and another consulting service for the verification of the compliance with the PBCs.

2. **Every six months or at dates agreed between SEMRY/MINEPAT and the World Bank, the IVA (consulting service in charge of verification) will carry out a technical verification of the level of achievement of the PBCs** described below and prepare independent verification reports covering a period and scope as set forth in the PIM, which will also describe the verification protocols in more detail. The IVA will submit each independent verification report to the SEMRY/PIU, which will include them as part of the disbursement requests.

3. **Following are the PBCs to be achieved under Component 3 for a total amount of US$6.0 million**. Out of the nine PBCs, eight will transfer funds to the SEMRY account (US$5.5 million)[29] and one PBC will transfer funds to the eight WUAs (US$0.5 million). PBCs 4, 5, 6, 7 and 8 are scalable:

PBC	Amounts of Category (2) subject to the respective PBC (million US$)	Expected to be achieved within one year from the effective date	Expected to be achieved within two years from the effective date	Expected to be achieved within three years from the effective date	4th year	5th year
1. SEMRY approves the amendments of its statute.	**0.5**					
1.1. SEMRY's has amended and approved its statute under terms and conditions described in the PIM.	0.125	X				
1.2. MINADER has concurred and approved SEMRY's amended statute referred to in PBC#1.1, all under terms and conditions described in PIM	0.125	X				
1.3. The Recipient has adopted and published a decree approving SEMRY's amended statute, all under terms and	0.250		X			

[29] In order to assist SEMRY, given its tight budget, SEMRY will be given an advance of 20 percent related to their PBCs (equal to US$1.1 million).

PBC	Amounts of Category (2) subject to the respective PBC (million US$)	Expected to be achieved within one year from the effective date	Expected to be achieved within two years from the effective date	Expected to be achieved within three years from the effective date	4th year	5th year
conditions described in the PIM						
2.Regularization and update of the SEMRY's land tenure titles	**0.5**		X			
3. Land preparation services, irrigation service fees, and SEMRY's fees are separated effectively	**0.5**	X				
4. **SEMRY implements the decision adopted under PBC#3 and improves collection rate of their fees.** Collection: Before project: collection of 51,000 FCFA/parcel. Phase 1 co-management 18,000 FCFA/parcel Phase 2 Total transfer 5,000 FCFA/parcel Value estimated for the PBC over the 5 years' period is **US$1.0** million. Estimated amounts: Y1=US$300k Y2=US$300k Y3=US$236k Y4= US$114k Y5= US$50k	**Based on SEMRY collection fee.** US$1.5 million before project starts, and it will diminish over time with the transfer 5,000 parcels at 51,000 FCFA per parcel = 765 million FCFA (or about US$1.5 million per year)	**0.5 times collection fee** Y1=US$300k Estimated fee collection US$0.6million 8 schemes co-management (12,210 ha or 10,000 ha) Estimated ha under production: 8,000 ha/Y; Collection will be 18,000 FCFA for 16,000 parcels/Y which equals to 288 million FCFA (about US$0,6 million)	**0.5 times collection fee** Y2=US$300k Estimated fee collection US$0.6 million 8 schemes co-management (12,210 ha or 10,000 ha) Estimated ha under production: 8,000 ha/Y; Collection will be 18,000 FCFA for 16,000 parcels/Y which equals to 288 million FCFA (about US$0,6 million)	**0.38 times collection fee** Y3=US$236k Estimated fee collection: US$620,000 (2 crops per year in the transferred parcels and 1 crop/year in the rest) 4 schemes co-management: Pouss, SP1, Guirvidig and SP2; fee collection: 4,086.5 ha at 36,000 FCFA per ha (18,000 FCFA per parcel) 147 million FCFA (or about US$294,000) 4 schemes transferred: Maga West, Maga East,	**0.2 times collection fee** Y4= US$114k Estimated fee collection US$570,000 (2 crops per year in the transferred parcels and 1 crop/year in the rest) 2 schemes co-management of Guirvidig and SP2 2,402.3 ha 36,000 FCFA per ha (18,000 FCFA per parcel) 86 million FCFA (or about US$173,000) 6 schemes transferred: Maga West, Maga East,	**0.1 times collection fee** Y5= US$50k Estimated fee collection US$500k (2 crop per year) US$244,000 (1 crop per year) All eight schemes transferred: Maga West, Maga East, SP3, SP4,

PBC	Amounts of Category (2) subject to the respective PBC (million US$)	Expected to be achieved within one year from the effective date	Expected to be achieved within two years from the effective date	Expected to be achieved within three years from the effective date	4th year	5th year
				SP3 and SP4. Fees to be collected: 8,123.5 ha times 10,000 FCFA/ ha (5,0000 per parcel) amounts to 81 million FCFA (or about US$162,000)	SP3, SP4, Pouss and SP1. Total fee collection: 9,807.7 ha times 10,000 FCFA/ha (5,000 per parcel) 98 million FCFA (or about US$196,000)	Pouss, SP1, Guirvidig and SP2. Fees to be collected: 12,210 ha times 10,000 FCFA/ ha (5,000 per parcel) equals 122 million FCFA (or about US$244,000)
5. Each of the 8 WUAs collects irrigation service fees. WUA will need to collect 9,000 FCFA per parcel in the co-management period. Once transfer is done, the WUA will collect 22,500 FCFA per parcel. Estimated amounts: TOTAL: US$ 0.5 million. Y1=US$75k Y2=US$75k Y3=US$100k Y4=US$120k Y5=US$130k	**Estimated total amount of PBC: US$0.5 million**	**0.25 times their collection fee** Y1=US$75k Estimated fee collection: US$0.3--0.4 million per year 8 schemes co-management: 8,000 ha/Y co-management at 18,000FCFA/ha; equals 144 million FCFA (or about US$0.3 million)	**0.25 times their collection fee** Y2=US$75k Estimated fee collection: US$0.3-0.4 million per year 8 schemes co-management: 18,000 FCFA per ha (9,000 FCFA per parcel); if fees were collected for 10,000 ha, this would amount to 180 million FCFA (aboutUS$360 k per season) Consider that in 4 schemes will not be producing during the DS because of	**0.1 times their collection fee** Y3=US$100k Estimated max fee collection US$1.6million, probably order of US$1 million. 4,086.5 ha under co-management (one crop/Y) at 18,000FCFA/ ha; equals 73.6 million FCFA (or about US$0.147 million) 8,123.5 ha transferred (twice crop/Y) at 45,000 FCFA/ha 731 FCFA million (or about US$1.5 million)	**0.08 times their collection fee** Y4=US$120k Estimated max. fee collection US$1.9million, probably order of US$1.5 million. 2,402.3 ha under co-management (one crop/Y) at 18,000FCFA/ha ; equals 43.2 million FCFA (or about US$0.086 million) 9,807.7 ha transferred (twice crop/Y) at 45,000 FCFA/ha 883 FCFA million (or about 1.8US$ million)	**0.065 times their collection fee** Y5=US$130k Estimated fee collection: US$2 million 12,210 ha transferred (twice crop/Y) at 45,000FCFA/ ha; equals 1,098 million FCFA (or about US$2.2 million) 8 schemes transferred: Maga West, Maga East, SP3, SP4, Pouss, SP1, Guirvidig and SP2. Fees 12,210 ha times 45,000 FCFA/ ha (22,500 per parcel). Equals

PBC	Amounts of Category (2) subject to the respective PBC (million US$)	Expected to be achieved within one year from the effective date	Expected to be achieved within two years from the effective date	Expected to be achieved within three years from the effective date	4th year	5th year
			rehabilitation works			549 million FCFA (or about US$1 million per season)
6. Effective transfer of the management of the 8 rehabilitated irrigation schemes, between SEMRY and each of the 8 WUA Transfer to be completed once irrigation schemes are rehabilitated and transfer agreement signed. Size of areas: SP1: 732 ha SP2: 1492 ha SP3: 1669 ha SP4: 1833 ha Pouss: 952.2 ha Maga West: 2264.7 ha Maga East: 2356.8 ha Guirvidig: 910.3 ha	**TOTAL: US$1.5 million (US$125**per ha area transferred			Areas transferred: Maga West, Maga East, SP3 and SP4. Approximately 8,123.5 ha transferred: payment equal to about US$1 million	Additional areas transferred: Pouss and SP1. Approximately 1,684.2 additional ha transferred: payment equal to about US$0.2 million	Areas transferred Guirvidig and SP2. Final 2,402.3 ha transferred: payment equal to about US$0.3million
7. Developed and conducted Annual performance evaluation on the implementation of the Scheme Management Code in the 8 rehabilitated irrigation schemes s (e.g. performance service delivery, reduction in complaints, satisfaction survey).	**0.5**	For each 1 percent satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to US$1000 may be made available for withdrawal by the Recipient, up to the total amount	For each 1 percent satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to US$1000 may be made available for withdrawal by the Recipient, up to the total amount	For each 1 percent satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to US$1000 may be made available for withdrawal by the Recipient, up to the total amount	For each 1 percent satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to US$1000 may be made available for withdrawal by the Recipient, up to the total amount	For each 1 percent satisfaction score granted by the annual performance evaluation report's Scorecard, an amount corresponding to US$1000 may be made available for withdrawal by the Recipient, up to the total amount

PBC	Amounts of Category (2) subject to the respective PBC (million US$)	Expected to be achieved within one year from the effective date	Expected to be achieved within two years from the effective date	Expected to be achieved within three years from the effective date	4th year	5th year
		allocated to the PBC#7, all under terms and conditions described in the PIM.	allocated to the PBC#7, all under terms and conditions described in the PIM.	allocated to the PBC#7, all under terms and conditions described in the PIM.	allocated to the PBC#7, all under terms and conditions described in the PIM.	allocated to the PBC#7, all under terms and conditions described in the PIM.
8. Implementation of SEMRY's social plan SEMRY has implemented the 8 phases stipulated in the Social Plan, all under terms and conditions described in the PIM.	0.5	An amount corresponding to US$62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.	An amount corresponding to US$62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.	An amount corresponding to US$62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.	An amount corresponding to US$62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.	An amount corresponding to US$62,500 per phase implemented in the social plan be made available for withdrawal by the Recipient, up to the total amount allocated to the PBC#8, all under terms and conditions described in the PIM.
9. SEMRY has approved the transfer of processing and commercialization activities to the private sector	0.5		X A PPP contract has been signed between SEMRY and a private company to transfer SEMRY's commercial activities, under terms and conditions as described in the PIM			
TOTAL MAX (SEMRY): US$5.5M		0.25(1)+0.5(3)+0.3(4)+0.1(7)+0.1(8)= **US$1.25 M**	0.25(1)+0.5(2)+0.3(4)+0.1(7)+0.1(8)+0.5(9)=	0.24(4)+1.0(6)+0.1(7)+0.1(8)= **US$1.44 M**	0.11(4)+0.2(6)+0.1(7)+0.1(8) = **US$0.51 M**	0.05(4)+0.3(6)+0.1(7)+0.1(8) = **US$0.55 M**

PBC	Amounts of Category (2) subject to the respective PBC (million US$)	Expected to be achieved within one year from the effective date	Expected to be achieved within two years from the effective date	Expected to be achieved within three years from the effective date	4th year	5th year
			US$1.75 M			
TOTAL MAX (AUE): US$0.5M		US$0.075M	US$0.075M	US$0.1M	US$0.12M	US$0.13M

4. On PBC 7, the consulting firm for the TA of Subcomponents 1.3 and 3.1 will be asked in their TOR to elaborate an index to measure the performance of the implementation of the Scheme Management Code. Some criteria to consider will be (i) preparation of annual maintenance plan (WUA, SEMRY); (ii) complying with irrigation schedule; (iii) special survey of tail-enders; (iv) irrigated areas; (v) fee recovery; (vi) satisfaction survey; (vii) quantitative reduction in complaints; (viii) regularity of meetings of general assembly; and (ix) regularity of meetings of management committee.

5. Eligible expenditures: equipment, personnel during the first 5 years, social plan. PBCs 4, 5 and 6 are based on the fact that the fee farmers paid in the period prior to the project was 52,500 FCFA per parcel of half hectare (12,210 ha equivalent to around 24,000 parcels) for everything together (land allocation and SEMRY support, irrigation and drainage service fees and land preparation – ploughing and harrowing-). As a result of the transformation of SEMRY, it is planned to split the fee into three parts:

a. SEMRY fee for land allocation and general support to farmers;
b. WUA fee for irrigation and drainage services; and
c. The third part which corresponds to land preparation (ploughing and harrowing).

6. The transfer will be done in two phases:

(i) Co-management period. As soon as project is approved and PBC3 (split of fees) is effective; and
(ii) Complete transfer: once each of the 8 irrigation schemes will be rehabilitated, a complete transfer will be done.

The table below shows the split of fees in the co-management and transfer period:

Table 3.1. Split of fees and description of payment process

	Before Project	**1st stage** Co-management period. Between validation of the Scheme Management Code and the signature of the Transfer Agreement.	**2nd stage (final)** Once Transfer Agreement is signed (after works completion). SEMRY will remain for agricultural support, coordination with WUAs, etc.
SEMRY (provision of land and training)	52.500 FCFA per parcel	18,500 FCFA per parcel	5,000 per parcel
WUA (water management scheme)	0	9,000 FCFA per parcel	22,500 FCFA per parcel
Land harrowing (in fact it's not a fee but estimated here for simplification purposes)	0	23,500 FCFA per parcel	23,500 FCFA per parcel

7. The table below shows the eligible expenditures that corresponds with the PBCs.

Table 3.2. Eligible expenditures for each of the PBCs

PBCs	Description	Data source	Verification entity	Eligible expenditures
1. SEMRY approves the amendments of its statute.				Staff costs of newly recruited staff for the first four years, equipment and operation and maintenance. Workshops and consultants.
1.1. SEMRY's has amended and approved its statute under terms and conditions described in the PIM.	Yes/no	SEMRY	IVA	
1.2. MINADER has concurred and approved SEMRY's amended statute referred to in PBC#1.1, all under terms and conditions described in PIM	Yes/no	MINADER	IVA	
1.3. The Recipient has adopted and published a decree approving SEMRY's amended statute, all under terms and conditions described in the PIM	Yes/no	Office of the President	IVA	
2.Regularization and update of the SEMRY's land tenure titles.		MINADER/ MINDCAF	IVA	Consultant service, service contracts, workshops and general process for titling Topographical services and other services/workshops requested by MINDCAF
3. Land preparation services, irrigation service fees, and SEMRY's fees are separated effectively	Yes/no	SEMRY	IVA	Staff costs of newly recruited staff for the first four years and equipment. Workshops and consultants. Topographical services and other services/workshops requested by MINDCAF
4. **SEMRY implements the decision adopted under PBC#3 and improves collection rate of their fees.**	Scalable (US$) Y1=0.50x Y2=0.50x Y3=0.33x Y4=0.25x Y5-0.10x	Audit SEMRY	IVA	Staff costs of newly recruited staff for the first four years and equipment. Social plan, workshops and consultants.
5. Each of the 8 WUAs collects irrigation service fees.	Scalable (US$) Y1=0.50z Y2=0.50z Y3=0.20z Y4=0.15z Y5-0.10z	Audit WUAs (unqualified)	IVA	Equipment and maintenance works by "maintenance teams" , as well as workshop, consultants, etc. as long as the WUAs receive an unqualified audit report.
6. Effective transfer of the management of the 8 rehabilitated irrigation schemes, between SEMRY and each of the 8 WUA	Scalable (US$) Y = US$125* hectare transferred	Transfer agreement signed	IVA	Staff costs of newly recruited staff for the first four years and equipment, and implementation of social plan. Workshops and consultants

PBCs	Description	Data source	Verification entity	Eligible expenditures
7. Developed and conducted annual performance evaluation on the implementation of the Scheme Management Code in the 8 rehabilitated irrigation schemes s (e.g. performance service delivery, reduction in complaints, satisfaction survey).	Scalable (satisfaction survey)	SEMRY/PIU	IVA	Staff costs of newly recruited staff for the first four years and equipment. Social plan, workshops and consultants.
8. Implementation of SEMRY's social plan SEMRY has implemented the 8 phases stipulated in the Social Plan, all under terms and conditions described in the PIM.	Scalable (percentage implementation). US$5,000 per 1 percent execution		IVA	Social plan, equipment and staff costs for the period of four years. Workshops and consultants.
9. SEMRY has approved the transfer of processing and commercialization activities to the private sector	Yes/no	SEMRY/PIU	IVA	Staff costs of newly recruited staff for the first four years and equipment, and implementation of social plan MINADER expenses related to support for facilitating the process of the PPP for the rice milling facilities would also be eligible.

ANNEX 4: Implementation Support Plan

A. Strategy and Approach for Implementation Support

1. The key elements of the implementation support strategy include the following:

(a) **Timely support.** The World Bank implementation support will begin immediately after project approval to help the Borrower achieve effectiveness on time. Two standard missions per year would be undertaken. The first Implementation Support Mission (ISM) would be undertaken at the latest three months after effectiveness of the project.

(b) **Continuously strengthening capacities.** When needed, capacity building will be provided to the technical team. In addition, trainings will be provided by the task team on World Bank operations, fiduciary, and safeguard aspects of the project to staff in the PIU. Moreover, on top of carrying out their usual implementation support functions, World Bank fiduciary, safeguard, and M&E specialists will be available to provide close support and detailed hands-on guidance to their counterparts during the initial months following effectiveness.

(c) **Technical support.** The World Bank task teams will include technical specialists with expertise in a range of areas, drawn from within the institution and development partners (DPs) such as the FAO. Technical specialists unavailable in the WBG and FAO/World Bank Cooperative Program (FAO/CP) pool would be recruited externally to support the implementation of the project. Members of the project's task team would organize and undertake field visits to verify compliance with the policies and procedures spelled out in the Financing Agreement, the PIM and other manuals, identify bottlenecks affecting implementation progress, and provide advice and recommendations to overcome the identified implementation challenges.

(d) **Fiduciary aspects.** The World Bank Fiduciary Specialists will provide hands-on procurement management support and FM support to the PIU. A provision of additional support (HEIS – Hands-on Expanded Implementation Support) for quality and faster procurement has been agreed with the Borrower.

(e) **Safeguard compliance.** The task team will also have safeguard experts to help in capacity building and technical review of demanding safeguard cases (including those linked to SEA/SH). The Safeguards Specialists' role will be to monitor progress of the different E&S management systems, build up a database, develop indicators, and ensure that the stakeholders are properly briefed and coordinating among themselves and provide expert advice as and when required.

(f) **Monitoring, evaluation, and knowledge management.** The task team will help the PIU in setting up and maintaining the project's decentralized M&E system. The system will be designed to facilitate systematic collection of the required data, which are needed to track progress in meeting the PDO, generate financial information, and document compliance with safeguards policies. Information generated by the M&E system, complemented by information emerging at the time of the MTR, will be used to adjust operational procedures and make the required mid-course corrections to the project implementation modalities, if deemed necessary.

2. The project's implementation will be supported by the task team members based in the World Bank office in Yaoundé. Staff from other offices and consultants will provide additional support as needed.

B. Implementation Support Plan and Resource Requirements

3. In general, the task team will conduct two annual implementation support missions and field visits to selected target regions; however, during the first two years at least three missions will be undertaken annually. The Government will be required to prepare and share the formal documents for the mission's consideration at least two weeks before the mission takes place.

4. The World Bank's Procurement, FM, and Safeguards (both social and environment) are based in country, and will provide regular, timely implementation support, and TA to the counterpart teams during project implementation. These team members will also identify capacity building needs to strengthen the procurement, FM, and safeguard capacity of the Borrower.

- **Procurement.** In addition to carrying out an annual post review of procurement that falls below the prior review thresholds, the Procurement Specialist will provide focused procurement support including: (a) reviewing procurement documents and providing timely feedback to the counterparts; (b) providing detailed advice and guidance on the application of the World Bank's Procurement Guidelines; and (c) monitoring procurement progress against the Procurement Plan.
- **FM.** The FM Implementation Support Plan will be risk-based and will include the review of the project's FM system, including, but not limited to, accounting, reporting, and internal controls. The FM team will also include reviews of quarterly reports; review of annual audited financial statements, and Management Letters as well as timely follow up of issues that may arise; and participation in project supervision missions as appropriate.

5. Table 4.1 indicated the level of inputs that will be needed from the World Bank to provide appropriate and adequate implementation support for the proposed project during implementation.

Table 4.1: Implementation Support Plan

Time Year	Focus	Primary Skills Needed	Number of Missions	Estimated Budget (US$)
Years 1 and 2	• Project launch • Initialization of project components • FM systems functioning effectively • Procurement practices following World Bank norms • ESMF in place	• Team lead • FM, procurement • Environmental Specialist • Social Safeguards Specialist • Financial Sector Specialist • Irrigation Specialist • Value Chain/Business Plan Specialist • Agricultural Economist • Gender Specialist • M&E Specialist • Communications Specialist • On-Farm Water Management & Farm Mechanization Specialist	2	200,000
Years 3 to 7	• Monitor implementation of project activities • FM, procurement, safeguards • Midterm review	• Team lead • FM, procurement • Environmental Specialist • Social Safeguards Specialist • Financial Sector Specialist • Irrigation Specialist • Value Chain/Business Plan Specialist • Agricultural Economist • Gender Specialist • M&E Specialist/communications • On-Farm Water Management & Farm Mechanization Specialist	2	180,000

ANNEX 5: Economic and Financial Analysis

1. **Introduction.** The EFA is crucial for justifying the investments (US$217.4 million). The EFA confirmed that the investments are justified from the point of view of the beneficiaries (financial analysis) and for the country's economy (economic analysis) if production is intensified and diversified sufficiently. The analysis is based on relevant data collected in the field, and the assessment was grounded on "with and without project" scenarios including the proposed investments. The scenarios and EFA results are presented below[30] and were prepared considering the incremental costs and benefits that the project interventions and activities would induce. The results indicators include: (i) the financial impact at the level of the beneficiaries, measured mainly by the expected increases in net family revenues and by the financial internal rates of return (FRR) in the case of the post-harvest activities, using market prices; and (ii) the economic impact for the country's economy through the ERR and the economic NPV. Relevant conversion factors (CF) were used to estimate the economic (or shadow) values.

2. Rice is and will continue to be the most important and almost exclusive production activity in the irrigated areas. Developing a more efficient rice value chain is necessary for justifying the proposed investment. Rice production is the main base for justifying the proposed rehabilitation investments, given the assured potential domestic and regional unsatisfied growing rice markets.[31] Other HVC and activities (onions, fruits, vegetables, aquaculture, etc.) offer even higher potential returns, but evolving their production technologies, value chains, and market links will take years. This annex presents the EFA considering: (i) rehabilitation and modernization of the existing 12,210 ha of irrigated land on the Yagoua and Maga perimeters; (ii) development of 1,200 ha with small irrigation schemes based on water harvesting, groundwater pumping and small conveyance structures outside the perimeters; (iii) diversification and development of HVC activities; (iv) development of mechanization and other support services to improve efficiency; and (v) strengthening of the rice, onions and aquaculture value chains through development of agribusiness and farmers' organizations, promoting productive alliances among stakeholders. These investments would be identified through competitive processes to be supported through TA and matching grants. The value chain approach and vertical integration to be reinforced will reduce costs of the final products and improve the price of products, improving the net income derived from their farming irrigated and post harvesting activities.

3. **The EFA Scenarios.** The development of the "with and without the project" scenarios involved the preparation of crop and activity budget models. Resulting revenues quantify the net incremental benefits are being, and could be obtained through the project-supported interventions. Activities like TA, production services provision and value chain development together with the irrigation infrastructure improvements were also modeled. Farm and agri-business models, where crop and activity models are combined on realistic cropping patterns, show beneficiaries' income increases to see the attraction that farmers would have for increasing efficiency. The aggregation of farmers' activities for the two main areas allow quantifying the overall benefits and the costs involved in the rehabilitation and development of the perimeters, from the perspective of the country's economy.

4. **Crop and Activity Models.** On average, farmers have 0.5 ha of irrigated land where they plant mainly rice in two seasons per year when water is available in the DS, and when floods are controlled during the wet season (WS). Most farmers also cultivate, one to two rain fed ha outside the perimeter growing maize, cowpeas, cotton

[30] FARMOD software was used for the analysis and for assessing the project. Detailed Tables are available in Project Files.

[31] The rice sector is widening the deficit in the trade balance in Cameroon. The peak was recorded in 2017 with a volume of 628,400 tons of imported white rice valued at nearly FCFA 184 billion (US$300 million). National paddy rice production, estimated at nearly 333,076 tons in 2017, has been almost stagnant since 2011. However, the objective of the National Rice Production Development Strategy, drawn up in 2007, is to produce 750,000 tons rice by 2020, still far from being attained.

or other crops during the WS and sorghum in the DS.

5. In Tables 1 and 2 (see detailed analysis in project file[32]) the case of rice cultivated in DS and WS is shown in the areas *to be rehabilitated*. The first column in the tables represent the costs and revenues without the project, while the following columns show the changes to be induced in subsequent years (with the project) including improved irrigation systems, the adoption of climate-smart technologies as the SRI package involving the use of laser land leveling (LLL), alternate watering and drying (AWD) irrigation method, and reducing the use of seeds, fertilizers and other inputs lowering production costs. The expected results would be: (i) a 30 percent average increase in yields from 6.65 (in DS) and 5.8 (in WS) to 8.4 and 7.8 metric tons (mt), respectively; (ii) a reduction in costs due to the reduced use of inputs; and (iii) a reduction in the use of labor (due to the use of land preparation and transplanting equipment, small harvesting machines, etc.). The resulting net revenues per ha of rice before family labor would be increasing two to threefold, from FCFA 350,900 to FCFA 531,000 in the DS and from FCFA 263,300 to FCFA 488,300 in the WS (Tables 1 and 2 in project file).

6. Similarly, other crops in the new areas to be developed with irrigation show similar or higher returns to the project support interventions. Table 3 in project file shows the budget for onions, being the second most frequent irrigated crop in the project area, which also could contribute significantly if post-harvesting arrangements and adequate linkages to the markets are developed with storage facilities for selling the onions off- season. Other HVCs also offer relevant diversification alternatives, including fruits and vegetables that could contribute to the development objectives. Tables 4 to 8 (in project file) present some examples: tomato, watermelon, aquaculture, maize, and soybeans. A budget for aquaculture (tilapia) in small, on-farm, 300 m^2 earth ponds for landless women and/or youth family members is expected to improve the diet of the poor in Cameroon's poorest northern regions as it is already happening in other countries in similar environments (Nigeria, Kenya, Egypt, etc.).

7. Tables 9 to 14 in the project file show the irrigated and rain fed crops (cultivated outside the perimeters) being cropped by beneficiaries. Table 15 also present a typical livestock activity through the budget involved from having traditional cows. The following Table 5.1 summarizes (from Tables 1 to 15 in project file) the main parameters and resulting gross and net revenues being derived "without project" (WoP) and those expected to be attained "with project" (WP).

Table 5.1: Crop and Activity Models without and with Project (in FCFA)

	Crop/Activity	Gross Revenue		Input Costs		Income Before Labor		Labor Costs		Net Revenue		Increments
Table		WoP	WP	WoP	WP	WoP	WP	WoP	WP	WoP	WP	before labor
1	Rice Dry Season	798,000	1,008,000	447,100	477,000	350,900	531,000	172,800	70,800	178,100	460,200	151%
2	Rice Wet Season	696,000	936,000	432,400	447,700	263,600	488,300	177,600	78,000	86,000	410,300	185%
3	Onions	1,200,000	2,000,000	477,500	622,500	722,500	1,377,500	270,000	360,000	452,500	1,017,500	191%
4	Tomate	1,560,000	2,600,000	584,000	762,400	976,000	1,837,600	446,400	657,600	529,600	1,180,000	188%
5	Watermelon	1,620,000	2,700,000	347,000	573,000	1,273,000	2,127,000	142,800	184,800	1,130,200	1,942,200	167%
6	Tilapia	-	900,000	-	720,000	-	180,000	-	57,600	-	122,400	IRR=17.6%
7	Maize Irrigated	440,000	770,000	316,000	357,000	124,000	413,000	133,200	140,400	-9,200	272,600	333%
8	Soyabeans	320,000	560,000	80,600	221,900	239,400	338,100	124,800	40,800	114,600	297,300	141%
9	Rice rainfed	360,000	396,000	236,700	236,700	123,300	159,300	121,200	121,200	2,100	38,100	129%
10	Maize rainfed	220,000	330,000	88,500	123,200	131,500	206,800	157,200	177,600	-25,700	29,200	157%
11	Sorghum rainfed	192,000	240,000	39,300	66,200	152,700	173,800	84,000	88,800	68,700	85,000	114%
12	Groundnuts	500,000	650,000	234,000	268,500	266,000	381,500	124,800	139,200	141,200	242,300	143%
13	Cowpeas	360,000	720,000	260,600	385,200	99,400	334,800	110,400	129,600	-11,000	205,200	337%
14	Cotton	300,000	375,000	133,100	160,500	166,900	214,500	121,200	132,000	45,700	82,500	129%
15	Traditional cow	128,750	189,250	67,500	96,000	61,250	93,250	57,600	57,600	3,650	35,650	152%

8. As can be seen in Table 5.1 from the average net revenue values, rice production with the adoption of SRI technologies could more than double the current net revenues before labor costs. Onions could provide about

[32] Project Files can be shared upon request.

two times the returns from rice. Other HVCs, such as aquaculture, tomato and watermelon, could also offer two to four times the returns from rice with the new technologies.

9. **Farm Models** compare the current production systems to those to be developed. Tables 16 to 23 (in project file) present the existing and expected beneficiaries' situations before and after the project in the perimeters, cultivating 0.5 ha both during the WS and DS, and in 1.5 ha with rainfed crops. Table 22 represents farms in small-scale irrigation schemes outside the perimeters pumping from the river or shallow groundwater. Table 23 represents a beneficiary developing aquaculture in a 300 m^2 excavated pond. Table 5.2 summarizes the main results as shown in the tables in the project files.

Table 5.2: Farm Models (FM) for Phase I for Existing Farmers

			Gross Value Production (in '000 FCFA)		Net Value Production (in '000 FCFA)		Returns/familyday work (in FCFA)		Main Crops 1/		Income increase
	# Farms	Area Total (ha)	Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project	
Yagua Perimeters (ha/FM)	**11,600**	**5,300**									
FM 1: 0.5 Irrigated + 1.5 RF	7,420	3,710	900	1,597	388	746	1,210	2,318	R,M,S,G	R,M,S,G	92%
FM 2: 0.5 Irrigated + 1.5 RF	2,120	1,060	690	2,194	309	801	1,208	2,642	R,M,S,C	A,R,M,S,C	159%
FM 3: 0.5 Irrigated + 1.5 RF	1,060	530	1,303	2,283	731	1,358	2,453	4,022	R,M,S,G,T,O	R,M,S,G,T,O	86%
Outside Perimeters	1000	500	476	1,703	237	975	1,172	4,130	M,S,C	R,M,S,C,O	311%
Maga Perimeters (ha/FM)	**13,800**	**6,200**	-	-	-	-	-	-	-	-	
FM 4: 0.5 Irrigated + 1.5 RF	8,680	4,340	717	1,464	285	679	1,096	2,553	R,M,S,C,L	R,M,S,C,L	138%
FM 5: 0.5 Irrigated + 1.5 RF	2,480	1,240	809	2,408	359	905	1,309	2,760	R,M,S,G,L	R,M,S,G,L,A	152%
FM 6: 0.5 Irrigated + 1.5 RF	1,240	620	1,165	1,747	586	974	1,734	2,882	R,M,S,C,T,O,L	R,M,S,C,T,O,L	66%
Outside Perimeters: 0.5 ha with small pumps	1400	700	476	1,703	237	975	1,172	4,130	M,S,C	R,M,S,C,O	311%
Tilapia Ponds (500 m^2; 300 m^2 net)	2400	72	-	600	-	180	-	3,750	-	Tilapia	
TOTALS	**27,800**	**11,572**	-	-	-	-	-	-	-	-	
1/ RF : Rain fed; R: rice; M: maize; S: sorghum; G: groundnuts; C: cowpeas; O: onions; T: tomato; L: Livestock; A: Aquaculture (Tilapia)											

10. **Production Services and Post-harvest Agribusiness Models.** The viability of the project costing US$153.5 million (Component 1) depends on: (i) the adoption of improving production technologies; and (ii) the development of the main value chains. Both targets should be developed concurrently for which "software" support components are foreseen (US$64.5 million). Three production support services models represent business opportunities (Tables 24 to 26 in project file)[33], and four post-harvesting models are examples for value chain development (Tables 27 to 30)[34]. Table 5.3 provides a summary of these production support services and the post-harvesting models to exemplify the type of complementary investments to be promoted by the project

[33] A machinery service provider model with two 70–75 HP 4WD tractors and implements (disks plows, harrow, rotovator, LLL, seeding, transplanting equipment, etc.) for servicing 400 farms charging tariffs below the current ones, and with a US$50,000 grant, matched with a US$34,350 commercial loan show that the operator would attain a FRR of 36.3 percent (see Table 24). The other models (Tables 25 & 26) involve smaller machinery operators that would acquire a monoculture equipment for land preparation in the first case, and a small harvesting and threshing equipment for servicing about 80 small farms, respectively. A US$5,000 grant covering 60 to 80 percent of the cost was assumed. The FRR is estimated at 51 and 28 percent, respectively.

[34] The two Rice Milling Models (Tables 27 & 28) assumed a milling capacity of 360 mt and 2,000 mt of paddy/year, costing US$6,300 and US$133,000 respectively. In the first case, 80 percent of the cost (US$5,000) would be covered with a grant, while a US$50,000 grant could be awarded in the later. Polished rice (62.5 percent from paddy) could be sold at FCFA 282 per kg in Yaounde instead of selling the paddy at FCFA 120 per kg locally. With an FRR of 18.6 and 40 percent (after the project grant), the operators could significantly add value and improve the price of paddy being paid to farmers. **The Onion Storage Model** (Table 29) assumed a 100 mt storing capacity. After 2 to 4 months, about 80 mt of off-season onions to be sold at a price of around FCFA 320 per kg in Yaounde instead of FCFA 80 per kg if sold locally during the harvesting season. The investment (US$10,000) for the required cool, dry, dark, and ventilated, rustic warehouse would be supported with a US$5,000 project grant. With an FRR of more than 100 percent, this unit could also improve their onion business. Table 29 present the budget for a **tomato packing facility** investing US$36,000 with a grant covering 50 percent In this case the FRR would be 82 percent.

TA and financial support instruments (matching grants) aiming at rice, onion, tomato, and fish.[35]

Table 5.3: Service Providers and Post-harvesting Value Chain Development Models

Products (processing capacity)	Invest-ment	Project Grants	Gross Value Products	Net Value Value Products	FIRR %
	(in "000 FCFA)				
Large Machinery Service Provider (400 ha	68,700	30,000	26,500	11,200	36.3
Small Land Preparation Service (40 ha)	3,780	3,000	1,200	552	51.1
Small Harvesting Service Provider (40 ha	5,100	3,000	1,800	640	28.4
Rice Mill (360 MT/year)	3,750	3,000	59,328	1,288	18.6
Rice Mill (2,000 MT/year)	80,000	30,000	436,000	46,000	40.5
Onion Storage (100 MT)	6,000	3,000	5,120	2,420	>100
Tomato Packing (375 MT)	21,600	10,800	68,000	13,990	82.8
Tilapia Processing (120 MT)	24,000	14,400	210,000	16,000	38.8

Aggregated Results

11. The aggregation of farms and activities allow quantifying benefits, expected volumes of products, inputs and labor involved. Tables 31 to 32 in the project file detail the current and expected aggregate gross and net production values and costs, the project investments, and resulting cash flow in economic values. The following Table 5.4 summarizes the main parameters for the two sub-projects and for the overall VIVA Logone project. Water productivity would increase from FCFA 64 per m^3 in the existing perimeters to FCFA 152 per m^3 with the project at maturity. Labor use would also be increased significantly, by about 17 percent over the current requirements. Labor use would grow from 7.1 to 8.3 million person-days of work and returns per day worked would also grow at least by 180 percent.

Table 5.4: Main Indicators and Results per Sub-project (Yagoua and Maga) and for the Project

	Number of Farms	Area Total (ha)	Invest-ments (in Million USD)	Water Use for Irrigation (MCM)	Value of Production at Maturity		Internal Rate of Return (%)		Net Present Value (6% discount rate)	
					Gross (USD Mi)	Net (USD Mi)	Financial	Economic	Financial (USD Mi)	Economic (USD Mi)
Yagoua	12,600	6,300	114,672	98.6	56,353	18,893	8.6	8.7	19.5	20.8
Maga	15,200	7,600	106,106	120.5	69,557	22,143	13.1	11.8	52.5	45.6
Total	**27,800**	**13,900**	**220,778**	**219.1**	**125,910**	**41,037**	**10.8**	**10.2**	**72.0**	**66.4**

12. Table 33 and 34 in the project file provides the detailed financial and economic costs and benefits of the project. Table 5.5 below shows the expected incorporation of beneficiaries including farmers, service providers' operations, and the post-harvesting activities developed under the project.

Table 5.5: Aggregation of Beneficiaries per Year (Farmers and Activities Supported by the Project)

FARM DISTRIBUTIONS							
(In Units '000)	With Project						
	1	2	3	4	5	6	7 to 20
Number of Farms							
Farm Model 1: Irrigated in Yagua Perimeter (0.5 ha) with Upland parcels (1.5 ha)	-	-	1,200.	3,900.	7,200.	7,420.	7,420.
Farm Model 2: Irrigated in Yagua Perimeter (0.5 ha) with rainfed parcels (1.5 ha) adding a 300m2 fish pond	-	400.	1,200.	2,120.	2,120.	2,120.	2,120.
Farm Model 3: Irrigated in Yagua Perimeter (0.5 ha) with Upland (1.5 ha)	-	100.	300.	1,060.	1,060.	1,060.	1,060.
Farm Model 4: Irrigated Farm in Maga Perimeter (0.5 ha with rice) with Upland parcels (1.5 ha)	-	-	-	880.	5,580.	8,680.	8,680.
Farm Model 5: Irrigated Farm in Maga (0.5 ha) & rainfed parcels (1.5 ha) adding a 300m2 fish pond	-	-	-	400.	1,480.	2,480.	2,480.
Farm Model 6: Farm in Maga (0.5 ha) with Onions DS & Tomato in DS, and Rice in WS. Upland parcels (1 ha)	-	-	-	120.	940.	1,240.	1,240.
Farm Model 7: New Irrigated Farm outside the Perimeters (0.5 ha with rice in WS and Onion in DS) with Upland pa	-	-	200.	700.	1,350.	2,000	2,400.
Tilapia Model: Groups of Women and Youth (landless) Supported with a 300 m2 pond		150.	450.	1,050.	1,500.	1,500.	1,500.
Rice Milling Unit (360 ton capacity per year)	-	3.	17.	44.	77.	105.	118.
Rice Milling Group (2,000 ton capacity/year)	-	-	1.	5.	12.	18.	20.
Onion Storage Facility (20 ton capacity)	-	-	150.	450.	850.	1,250.	1,560.
Tomato Packing Facility	-	-	1.	3.	5.	5.	5.
Fish Processing Association of Women and Youth Longone	-	2.	6.	11.	15.	16.	16.
Machinery Service Provider (Tractors, land preparation, harvesting, etc.)	-	-	4.	14.	34.	58.	62.
Machinery Small Service Provider (Motoculture for land preparation)	-	13.	43.	88.	168.	204.	204.
Machinery Small Service Provider (Harvesting and Treshing)	-	13.	43.	88.	168.	204.	204.

[35] Pond fish is considered as superior to bush-meat, beef, pork, and poultry, and is recommend for children, pregnant women, and the elderly. Capital to start with high-quality inputs are necessary to push production above the minimum critical level.

13. **Sensitivity Analysis.** The overall result would be fully justified as it shows an ERR of 10.2 percent and an NPV (with 6 percent as discount rate) of US$66.4 million. Project results were checked against major implementation risks: (i) agricultural prices reduced by 10 percent; (ii) cost increases by 10, 20, and 30 percent; (iii) no post-harvest value addition for rice and onions; and (iv) general agricultural prices drop by 10 percent together with cost increases by 10 percent. In all cases the ERR would remain above 6.5 percent which allows one to conclude that the project is robust against major risks.

ANNEX 6: Institutional Profile of SEMRY and Proposed Transformation

SEMRY's History

1. **SEMRY was created in 1971 as a "production company" with its main mission to provide irrigation water to produce rice, as well as provide seeds and buy the rice from the farmers, and to undertake land preparation and almost all farming activities.** Its original mandate was to handle the construction of the 5,500 ha SEMRY 1 irrigation scheme at Yagoua. This mandate expanded in 1978 to handle the 6,500 ha SEMRY 2 scheme at Maga, including the construction of the 27 km Maga dam on the upper part of the Waza-Logone floodplain. These initiatives received major financial support from the World Bank and other financial institutions under the SEMRY 1 and SEMRY 2 Projects.

2. **Early results were encouraging.** The World Bank's ex-post evaluation reports[36] for the SEMRY 1 and 2 Projects described SEMRY as one of the few irrigation schemes in Western and Central Africa where double cropping had been successfully introduced, noting that this had contributed to a doubling in the yields initially planned at project appraisal. In the mid-1980s annual production in SEMRY areas was equivalent to two-thirds of national consumption. At that time SEMRY was employing more than 1,500 employees and providing services for nearly 25,000 households, i.e. a population of around 200,000. It also generated employment for around 3,000 individuals involved in fishing, livestock, trade, packaging, transport, and other services. SEMRY also built schools, water supply points, and health centers.

3. **But by the late 1970s, issues had already begun to emerge that would later become major problems for SEMRY.** They included SEMRY's overdependence on expatriate staff and slow replacement of these individuals by local professionals due to the local lack of skills, inadequate staffing of the accounting and FM functions, and only slow involvement of producer organizations in activities such as water control, farm credit, procurement of supplies, and marketing. As SEMRY's activities increased in scope and size with the SEMRY 2 Project, the organization began to take on a bureaucratic character. At the same time, rice produced in the SEMRY perimeters faced increased competition in the market place from cheaper imports. Also, in the late 1980s, Government had increasing difficulty in honoring its financing commitments to SEMRY. SEMRY's finances became fragile, its debts and payments arrears accumulated, and the quality of SEMRY's infrastructure, equipment and the services deteriorated. The financial and operational problems became increasingly severe until eventually, in 1989, the organization was closed.

4. **Government launched a number of rescue attempts for SEMRY in the 1990s and beyond.** SEMRY's operations were downsized and re-focused on the management and maintenance of the irrigation services, but they still included the provision of agricultural support, land preparation and post-harvest services to rice farmers, including milling, bagging, and transport. A performance contract was signed with Government for the recovery of SEMRY, covering the period from 1990 to 1994, followed by two more from 2003 to 2006 and 2013 to 2015. Two internationally-financed projects included components which partially addressed SEMRY's chronic problems by financing some new equipment and rehabilitating parts of the irrigation schemes (PACA) of 2010-2015 and the PULCI Project of 2013-2020. However, the severity of the situation was beyond the capacity of these projects to correct the problems.

5. **Regarding the main hydraulic infrastructure (Maga dam and Logone dike): in the 1990s the mandate to operate and maintain was transferred from SEMRY to MINEPAT.** In 2012, during the preparation of the PULCI Project, it was agreed that SEMRY would be in charge of the operation and maintenance with funding from

[36] (i) Project Performance Audit Report, SEMRY Rice Project, May 12, 1978, and (ii) Ex-Post Evaluation Report, SEMRY 2 Project, June 25, 1984.

MINEPAT. During the execution of PULCI (2014-2020), this main hydraulic infrastructure has been rehabilitated and a "Maga Dam and Logone Dike O&M manual" has been elaborated. During 2019 and 2020, the maintenance and small repairs have been done by the contractor in charge of the rehabilitation works as these have been partly received in May 2018 and definitely received in May 2020. Going forward, SEMRY should use the tools detailed in this "O&M Manual" for requesting an O&M budget at the end of every rainy season (every November-December) in order to secure the proper O&M works during the DS (January-June).

6. **The results from these attempts to improve SEMRY's management and service delivery were disappointing.** Problems during the first performance contract included the increasing age and obsolescence of SEMRY's plowing and civil engineering machinery, superficial and late plowing, use of poor quality/degenerated seed, non-respect of the cultural calendar, insufficient use of fertilizers, and insufficient coverage of water requirements. The outcome over the contract period was a drop in rice yields over the covered areas from 6 mt/ha to about 4 mt/ha, the lowering of cropping intensity to one crop per year, and steadily increasing stagnation of the cultivated area. The second and third contracts faced the same problems which were made progressively worse by the chronic inability of the Government to meet its financing commitments to cover SEMRY's public service obligations.

Issues facing SEMRY today

7. **SEMRY's situation remains almost as fragile now as it was before the above rescue initiatives**. Performance is still far worse than initially planned with only 10,000 ha irrigated per year compared with the originally planned 23,000 ha, and annual rice production of the order of 60,000 tons compared with a potential of 110,000 ton annually on the irrigated area.

8. The staff contingent is currently around 430, of whom a high percentage are support personnel, and the workforce has a relatively high average age. The long-standing issues mentioned earlier still remain, including the bureaucratic character of the organization and shortages of managerial and technical skills, the multitude of legacy roles that the organization has accumulated over the years, and a shortage of civil engineering and plowing machines, irrigation pumps, and vehicles. The auditors' reports conclude that there are also weaknesses in internal financial control systems within SEMRY.

9. **SEMRY is still providing a service package to farmers in the areas which it serves, including provision of seeds, irrigation, and plowing.** In 2003, the cost of the service package was estimated at 102,000 FCFA per ½ ha. However, even now, SEMRY still maintains its prices at only FCFA 51,000 per ½ ha. The company also buys rice from local producers for distribution. However, given its financial constraints, it has not been able to buy all produced rice. Also, the farmers in the SEMRY area have preferred to sell their products to neighboring countries, particularly Nigeria, rather than locally. SEMRY's distribution activity is very limited in scope. The company provides transportation of products to the capital city, but sale of products is impeded due to the existence of only a single distribution point, resulting in only limited access to the market. Additional problems faced by SEMRY include weaknesses in its external governance and oversight, a severe lack of mechanization in the rice producing areas and almost complete absence of rules for land access and control and irrigation water management.

10. **SEMRY's operating income is generated mainly from fees charged for the provision of services. But with the low prices charged** to **growers, Government has also had to provide operating and investment subsidies.** As shown in the chart below, SEMRY's revenues from products and services sold remained virtually unchanged from FCFA 2.1 billion in 2018 to FCFA 2.29 billion in 2017 before falling to FCFA 1.42 billion in 2018. Government operating subsidies received rose from FCFA 0.39 billion in 2014 to FCFA 1.82 billion in both 2015 and 2016 and then fell to FCFA 0.6 billion in both 2017 and 2018. With these two sources of income, the organization generated

a surplus of FCFA 1.16 billion in 2016. In all other years over the period a deficit was incurred, rising sharply to FCFA 5.22 billion in 2018.

11. SEMRY's net worth (see chart below) fluctuated widely over the period from a low of FCFA 0.91 billion in 2014 to a high of FCFA 21.62 billion in 2017. Transfers from Government to SEMRY in the form of capital subsidies increased from FCFA 6 billion in 2014 to FCFA 12.44 billion in 2017 and FCFA 12.28 billion in 2018. SEMRY's total liabilities increased from FCFA 3.56 billion in 2014 to FCFA 4.31 billion in 2017 and then grew sharply to FCFA 9.43 billion in 2018, in which year taxes owed were the largest component of total debt.

12. **SEMRY was created as a Société de Développement, reporting to the Ministry of Agriculture and Rural Development, by Presidential Decree No. 71/DF/74 of 24 February 1971.** The company is 100 percent owned by the State. This decree, along with an updated Decree No 2008/413 of 20 July 2018, appointed the present Director General, and indicates the composition of SEMRY's board of directors.

13. Apart from the two growers' representatives, the representative from the Staff, and the one representing the inter-profession, the board consists entirely of ex-officio public officials. There is no requirement for the board to include skills in financial or business management or in company law, or for there to be any independent directors.

Proposed SEMRY Transformation

14. **Over the last 50 years, there have been many attempts through various projects and initiatives to try to increase rice production in the areas served by SEMRY.** VIVA-Logone is the first project that will be solely dedicated to this purpose. The project will incorporate the results of a "transformation plan" whose concept has been refined and agreed with Government. In addition to major institutional changes, important outcomes envisaged for the areas presently served by SEMRY will be an increase in production to around 110,000 tons per year, corresponding to a yield of 6.5 tons per year per ha on an area of 16,500 ha.

15. The main focus of SEMRY will be on the socio-economic development of its zone of influence**.** This implies a re-organization of SEMRY's present services which will include: (i) transferring land preparation services to the private sector; (ii) concession of the rice storage, transformation and commercialization facilities; and (iii) transferring irrigation management, including the pumping stations, to the WUAs.[37]

16. **Based on this needed transformation, a new organigram for SEMRY has been developed and agreed by the GoC and the World Bank as part of the preparation of the VIVA-Logone Project.** The graphic in Figure 2.1 of Annex 2 summarizes the long-term vision for the management of the irrigated zones of Yagoua and Maga.

17. **Most of SEMRY's activities in land preparation, maintenance, and water management within the perimeters and post-harvest processing, transport and marketing will be divested.** At the same time, SEMRY will be refocused on the fulfilling legitimate and necessary residual roles of the Government, such as maintenance of the main infrastructure (dam and dike), water resources monitoring, and farmer support.

[37] While the training and support is targeting women to address the gender gaps in agriculture employment, productivity, entrepreneurship, leadership, and decision making, SEMRY should take gender into consideration while undergoing the transformation. Women should be represented at all levels so that SEMRY would be better equipped to identify, analyze and respond to the needs of women farmers.

ANNEX 7: The Legal Basis for WUA Establishment

1. The basic challenge for the project is the lack of an appropriate legal framework for WUAs. A key legal requirement for effective WUAs is that membership in a WUA has to be compulsory. A WUA is not like a cooperative or an NGO where membership implies the right to join or leave at any time. Every person who holds land within the service area of a WUA must automatically be a member of that WUA. As such, a WUA member is subject to the rules of the WUA as regards water management and also subject to the duty to pay the irrigation and drainage service fee to enable the WUA to cover its costs of operating and maintaining irrigation infrastructure through which water is supplied within its service area. The rights and duties which relate to WUA membership are not personal to the landholder but attach to the land plots within the service area.

2. Cameroon has little experience of WUAs and therefore unsurprisingly has no WUA legislation in place. Moreover, the existing law on NGOs/associations is called the 'Law on Freedom of Association' and as such embraces the right to join or leave an association at will. It is of course possible to set up associations on the basis of that law and to call them 'WUAs'. Such an approach is currently being piloted under the PULCI project. However, any future WUA member has the right to leave at any time, and if this happens there is nothing the 'WUAs' can do to prevent that.

3. The 'ideal' solution would be the preparation and adoption of specific legislation on the irrigation sector that could set out the clear and robust governance structures that WUAs require (there can often be disputes over water allocation) and set out a clear legal basis for the transfer to WUAs the right to manage and use public irrigation infrastructure. However, there is a clear risk that the adoption of WUA legislation could take many years to complete, most likely after the end of the project.

4. The existing water law is silent on WUAs and does not create a clear legal basis for the adoption of interim subordinate legislation in the form of a ministerial decree/decision. Therefore, a range of different interim solutions will need to be found. In terms of a long term-solution, the ongoing preparation of a new National Water Policy and Water Code seems to offer the best opening not least because the recently adopted National Agricultural Water Policy specifically to the establishment of WUAs. Under this approach, the first step will be to ensure that suitable high-level wording is included in the draft National Water Policy that opens the way to WUA formation. The draft policy was recently subject to a 'validation workshop' during the course of which: (a) it was agreed that the layout and approach of the document was not appropriate and that it would need to be altered to comply with the required format; and (b) that additional policy directions and strategic objectives should be included. Among the strategic objectives agreed at the workshop were: (i) 'Promote the development of a private sector ready to invest in supporting the development of the agricultural services market;' and (ii) 'Complement and improve the institutional, legislative, and regulatory framework to integrate local actors in the management and sustainability of hydraulic and hydro-agricultural infrastructure'. This wording was proposed by a representative of the PULCI Project and would seem to form an appropriate high-level basis for the future development of WUA legislation.

5. Although the Ministry of Water and Energy agreed to revise the draft policy, it has in the past complained about a lack of resources. Once the draft National Water Policy is submitted to the Government for approval, there is no need to wait for the actual approval to be given, it will be appropriate to either support the Ministry of Water and Energy as they prepare a second draft of the Water Code or at the very least to contribute to that process to ensure that appropriate wording on WUAs is included in the text. Such wording need not be extensive. It will be enough to state the basic requirements along the lines that WUAs should be established on public irrigation schemes to take responsibility for management, operation and maintenance, that the membership is compulsory with the rights and duties of membership applying to the land plots in question, and that more detail

with regard to the establishment and functioning of WUAs, including with regard to legal/financial supervision, is to be set out in regulations. Ideally, such regulations would be in the form a joint decision/decree adopted by the Minister of Water and Energy and the Minister of Agriculture and Rural Development. It would be appropriate to prepare a draft text of such a decision contemporaneously with the development of the draft Water Code. The challenge here is that, even if the Government adopts the draft Water Code prior to transmission to the National Assembly, the latter may take some time to final adopt the text.

6. An alternative and possibly quicker approach, now that the National Agricultural Water Policy has been adopted, may be to assist the Ministry of Agriculture and Rural Development to prepare a separate irrigation law that could explicitly address the issue of WUA formation and operation and the transfer in use of infrastructure to WUAs. While such a law should be quicker to developer, given that fewer ministries will be involved in the process, the date of its final adoption would again depend on the time table of the National Assembly.

7. A further option that has been suggested is that the Minister of Agriculture could adopt a draft decision on WUAs requiring compulsory membership. There are two problems with this approach. The first is that a minister does not have plenary legislative power. S/he can only adopt subordinate legislation if an existing law confers the necessary legal power to do so. Unfortunately, there is no such a law. Moreover, from a legal perspective there is no question that a Ministerial decision could be used to create WUAs as a new type of legal entity or legal person. From a legal perspective the creation of a new type of legal person is big issue, a matter that requires a clear basis in law. At the same time, if the Minister were to seek to adopt a decision that modifies the existing legislation by requiring compulsory membership in associations that are themselves formed on the basis of a law that explicitly excludes the possibility of compulsory membership (even in its name), there would be an obvious contradiction and possible legal and political backlash.

8. A robust interim solution is proposed. First of all, the updated agreements for the use of land plots within the irrigation scheme will require the latter to pay their irrigation and drainage service fees through the WUA, to comply with the rules of the WUA and to participate in the WUA.

9. Next, an interim legal framework for the irrigation scheme has been prepared in the form of a ‘scheme management code’ that sets out the basic rules as to how: (a) the WUAs are to function; (b) legal/financial oversight of WUAs is to be undertaken by a specific unit within SEMRY; (c) infrastructure is to be rehabilitated in consultation with the WUAs and then transferred to the WUAs in use on the basis of long-term infrastructure rehabilitation and transfer agreements on a step-by-step basis with a defined period of co-management; and (d) disputes are to be resolved. The draft scheme management code has been discussed by the Conseil d’Administration of SEMRY and will next be transmitted to MINADER for comment and eventual approval. In other words, as a temporary measure pending the adoption of the relevant legislation, the aim of the scheme management code is to fill the legislative ‘gap’ that currently exists in a manner that is as robust, clear, and as transparent as possible.

10. The simple fact is that experience from donor-funded projects around the world is that it is always possible to set up some form of ‘WUA’ that seems to work perfectly well while the project is being *implemented*, and which fail once the project ends. The challenge is to have a sufficiently clear and robust legal framework, that does not require legal chicanery or wishful thinking, that can outlast the project and result in sustainable WUAs. Experiences suggests that this is usually only possible with explicit legislation; hence the need for appropriate provisions in the new Water Code or a separate irrigation law followed up with the necessary subordinate legislation.

ANNEX 8: Development Policy Letter

REPUBLIQUE DU CAMEROUN
Paix - Travail - Patrie

MINISTÈRE DE L'ECONOMIE, DE LA PLANIFICATION ET DE L'AMENAGEMENT DU TERRITOIRE

SECRÉTARIAT GÉNÉRAL

DIRECTION GENERALE DE LA COOPERATION ET DE L'INTEGRATION REGIONALE

DIRECTION DE LA COOPERATION NORD-SUD ET DES ORGANISATIONS MULTILATERALES

SOUS-DIRECTION DE LA COOPERATION MULTILATERALE

REPUBLIC OF CAMEROON
Peace - Work - Fatherland

MINISTRY OF ECONOMY, PLANNING AND REGIONAL DEVELOPMENT

SECRETARIAT GENERAL

GENERAL DEPARTMENT OF COOPERATION AND REGIONAL INTEGRATION

NORTH-SOUTH AND MULTILATERAL COOPERATION DEPARTMENT

SUB-DEPARTEMENT OF MULTILATERAL COOPERATION

N° 000001702 /L/MINEPAT/SG/DGCOOP/DNS/M/IE3

Yaoundé, le 21 AVR 2020

LE MINISTRE,

A Monsieur le Directeur des Opérations pour le Cameroun, Région Afrique de la Banque Mondiale
- Yaoundé –

Objet : **Coopération Cameroun/Banque Mondiale**
Mise en œuvre des recommandations de la mission d'évaluation du Projet d'Aménagement et de Valorisation des Investissements de la Vallée de la Bénoué (VIVA-Bénoué) et d'appui à la préparation du Projet d'Aménagement et de Valorisation des Investissements de la Vallée du Logone (VIVA-Logone) du 17 au 28 février 2020

Monsieur le Directeur des Opérations,

En me référant aux conclusions de la mission visée en objet,

J'ai l'honneur de vous faire tenir ci-joint la note d'engagement du Gouvernement signée par mes soins au sujet de la mise en œuvre des deux projets susmentionnés (VIVA-Bénoué et VIVA-Logone).

En effet, comme convenu avec la Banque mondiale, le Gouvernement du Cameroun s'engage dans le cadre de ces deux projets à :

1. transférer la gestion des périmètres réhabilités et/ou aménagés aux Associations des Usagers de l'Eau (AUE) suivant des modalités à définir en matière de gestion de l'eau et du réseau d'irrigation ;
2. impliquer progressivement le secteur privé dans le financement des plans d'affaires pour la mise en œuvre de certaines activités telles que le labour, le planage mécanisé, les intrants agricoles et, l'appui conseil ;
3. promouvoir la dynamisation de l'offre des services de transformation et de commercialisation par le secteur privé à travers notamment le financement des plans d'affaires ;
4. assurer la régulation du secteur de l'hydraulique agricole.

Par ailleurs, le Gouvernement a déjà engagé et va poursuivre la finalisation de la Politique Nationale de l'Eau (PNE) qui intègre notamment le statut juridique des AUE.

Vous réitérant la gratitude du Gouvernement pour le soutien de votre institution aux efforts de développement du Cameroun, je vous prie d'agréer, Monsieur le Directeur des Opérations, l'assurance de ma considération distinguée./-

PJ : -Note d'engagement

COPIE: - SG/PM
- MINEE
- MINADER
- SEMRY
- MEADEN

REPUBLIQUE DU CAMEROUN Republic of Cameroon
LE MINISTRE
MINISTERE DE L'ECONOMIE DE LA PLANIFICATION ET DE L'AMENAGEMENT DU TERRITOIRE

Alamine Ousmane Mey

Translation of Development Policy Letter

April 21st, 2020
The Director of Operations for Cameroon,
Africa region of the World Bank
- Yaounde -

Object: Cooperation Cameroun/World Bank

Implementation of recommendations of the appraisal mission for the Valorization of Investments in the Valley of the Benue (VIVA-Bénoué) and the support for the preparation of the Valorization of Investments in the Valley of the Logone (VIVA-Logone) from February 17 to 28, 2020

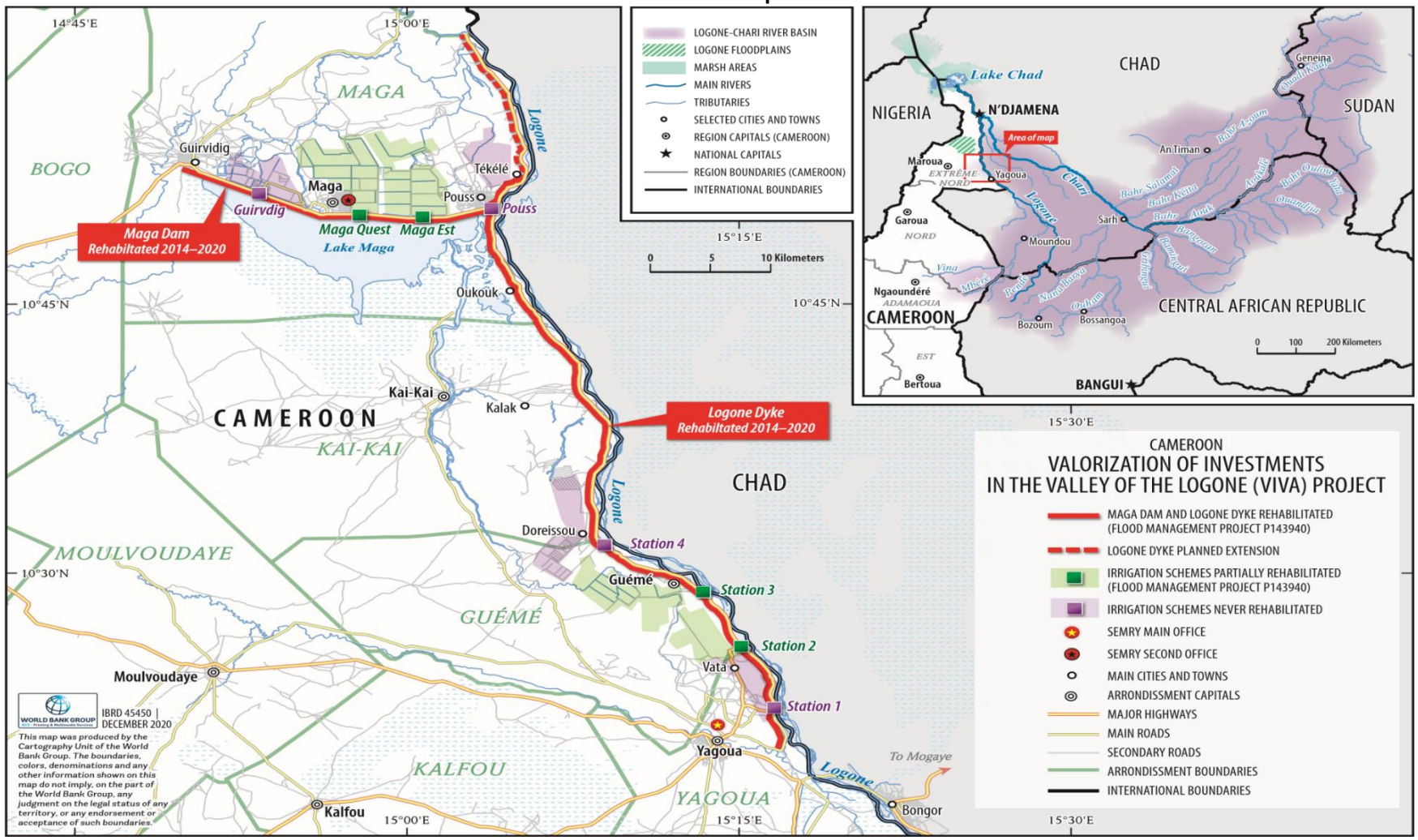
Dear Sir,
By referring to the conclusions of the mission in the subject line, I am honored to provide here enclosed the signed Government's commitment note regarding the implementation of the two mentioned projects (VIVA-Bénoué and VIVA-Logone).
Indeed, as agreed with the World Bank, the GoC undertakes, within the framework of these two projects to:

1. Transfer the management of rehabilitated and/or developed perimeters to the of Water Users Associations (WUA), following the conditions to be defined in terms of water and irrigation network management;
2. Gradually involve the private sector in the financing of business plans for the implementation of certain activities such as plowing, mechanized leveling, agricultural inputs and advisory support;
3. Promote the revitalization of the supply of processing and marketing services by the private sector, in particular through the financing of business plans;
4. Ensure the regulation of the agricultural hydraulic sector.
   In addition, the Government has already initiated and will continue to finalize the National Water Policy (NWP) which notably incorporates the legal status of WUA.

While reiterating the gratitude of the Government for the support of your institution for Cameroon's developments efforts, please accept Mr. Director of Operations, the assurance of my highest consideration.

Attached: Engagement note
Signed by Mr. Alamine Ousmane May, Minister, Ministry of Economy, Planning and Regional Development
Copy: - SG/PM
- MINEE
- MINADER
- SEMRY
- MEADE

ANNEX 9: Map


LOGONE-CHARI RIVER BASIN
LOGONE FLOODPLAINS
MARSH AREAS
MAIN RIVERS
TRIBUTARIES
SELECTED CITIES AND TOWNS
REGION CAPITALS (CAMEROON)
NATIONAL CAPITALS
REGION BOUNDARIES (CAMEROON)
INTERNATIONAL BOUNDARIES
MAGA
BOGO
MOULVOUDAYE
KAI-KAI
GUÉMÉ
KALFOU
YAGOUA
CAMEROON
CHAD
NIGERIA
SUDAN
CENTRAL AFRICAN REPUBLIC
Lake Chad
N'DJAMENA
Guirvidig
Maga
Tékélé
Pouss
Maga Quest
Maga Est
Lake Maga
Maga Dam
Rehabiltated 2014–2020
Oukouk
Kai-Kai
Kalak
Logone Dyke
Rehabiltated 2014–2020
Doreissou
Station 4
Guémé
Station 3
Station 2
Vata
Station 1
Yagoua
Moulvoudaye
Kalfou
Bongor
To Mogaye
Logone
Chari
Maroua
Garoua
Moundou
Sarh
Ngaoundéré
Bozoum
Bossangoa
Bertoua
BANGUI
Area of map
14°45'E
15°00'E
15°15'E
15°30'E
10°45'N
10°30'N
0 5 10 Kilometers
0 100 200 Kilometers
CAMEROON
VALORIZATION OF INVESTMENTS
IN THE VALLEY OF THE LOGONE (VIVA) PROJECT
MAGA DAM AND LOGONE DYKE REHABILITATED (FLOOD MANAGEMENT PROJECT P143940)
LOGONE DYKE PLANNED EXTENSION
IRRIGATION SCHEMES PARTIALLY REHABILITATED (FLOOD MANAGEMENT PROJECT P143940)
IRRIGATION SCHEMES NEVER REHABILITATED
SEMRY MAIN OFFICE
SEMRY SECOND OFFICE
MAIN CITIES AND TOWNS
ARRONDISSMENT CAPITALS
MAJOR HIGHWAYS
MAIN ROADS
SECONDARY ROADS
ARRONDISSMENT BOUNDARIES
INTERNATIONAL BOUNDARIES
IBRD 45450 | DECEMBER 2020
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