



ADAPTATION FUND

REQUEST FOR PROJECT FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat

1818 H Street NW

MSN P4-400

Washington, D.C., 20433

U.S.A

Fax: +1 (202) 522-3240/5

Email: afbsec@adaptation-fund.org

PROJECT PROPOSAL TO THE ADAPTATION FUND

Table of content

A.	PROJECT / PROGRAMME BACKGROUND AND CONTEXT	1
1.1.	Geography and Environmental context.....	1
1.2.	Economy, Population and Agriculture	2
1.3.	Natural Resource Management (NRM)	6
1.4.	Climate change	8
B.	PROJECT / PROGRAMME OBJECTIVES	25
C.	PROJECT COMPONENTS AND FINANCING	29
2.2.	PROJECTED CALENDAR	30
A.	PROJECT COMPONENTS	31
B.	ECONOMIC SOCIAL AND ENVIRONMENTAL BENEFITS.....	49
C.	COST-EFFECTIVENESS OF THE PROPOSED PROJECT.....	52
D.	ALIGNMENT WITH NATIONAL AND SUB-NATIONAL DEVELOPMENT STRATEGIES..	57
E.	ADHERENCE TO RELEVANT NATIONAL SUSTAINABLE DEVELOPMENT STRATEGIES	60
F.	DUPLICATION OF PROJECT WITH OTHER FUNDING SOURCES.....	66
	Agricultural Value Chain Development Support Programme.....	68
	Sustainable soil management for nutrition-sensitive agriculture – Vegetables focuses project.....	69
	Belier Region Agro-Industrial Pole Project.....	69
G.	LEARNING AND KNOWLEDGE MANAGEMENT	71
H.	DESCRIPTION OF CONSULTATIVE PROCESS	73
I.	JUSTIFICATION FOR FUNDING REQUESTED	76
J.	SUSTAINABILITY	81
K.	ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS.....	87
	PART III: IMPLEMENTATION ARRANGEMENTS	89
A.	IMPLEMETATION ARRANGEMENTS.....	89
B.	RISK MANAGEMENT.....	98
C.	ENVIRONEMTAL AND SOCIAL RISK MANAGEMENT	101
D.	MONITORING AND EVALUTION ARRANGEMENTS	113
E.	RESULTS FRAMEWORK	116
F.	ALIGNMNET WITH RESULTS FRAMEWORK OF THE ADAPTAION FUND.....	120
G.	DETAILED BUDGET	125
H.	DISBURSEMENT SCHEDULE	138

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY.....	140
1.2. Rationale and Objectives of the ESMF	145
1.3. Approach, Scope and Methodology Used for the ESMF	146
1.4. Stakeholder Consultations	146
1.5. Disclosure of ESMF.....	146
1.6. Report Outline	147
1.1. Project Area and Target Group	147
1.2. Goal, Objectives and Impact Indicators	149
1.3. Lessons on Social and Environmental Management	150
1.4. Environmental and Social Category	150
1.5. Institutional Framework.....	150
1.6. Intended Nationally Determined Contribution (2015)	151
1.7. IFAD Safeguard Policies	151
1.8. IFAD SECAP Procedure	151
2. The IFAD Climate Change Strategy (2010).....	152
3. The IFAD Environment and Natural Resource Management (ENRM, 2011) Policy.....	153
Country Background.....	154
1.5. Climate change	156
Environmental, Climate and Social Management Plan.....	164
Introduction: Key Activities, Responsibilities and Outline	164
1.1. Key Activities.....	164
Management Responsibilities	165
1.1. Outline of the Management Plans	165
Environmental (incl. Climate Change) Management Plan of the IFAD baseline investment.....	166
Stakeholder Engagement, Community Sensitization and Expectation Management	178
6.5 Grievance Management	178
Analysis of Alternatives	185
Environmental and Social Screening of Sub-Projects	186
Introduction: Screening and Review	186
Screening for Eligibility	186
Screening for Environmental and Social Impacts	187
Screening for Climate Impacts.....	187
Impact Significance Rating	187

Monitoring of Environmental, Climate and Social Impacts	189
Introduction.....	189
Key Performance Indicators	189
Baseline Study.....	190
Capacity Building and Training for Environmental and Social Management	191
Existing Capacity.....	191
Training Topics	191
Target Audience	191
Training Approach.....	192
Capacity Building Costs (Estimate).....	193
Annex 2– Eligibility Screening Form	194
Annex 3 - Environmental and Social Screening Forms	196
Annex 4 - Environmental and Social Guidelines for contractors	203
Annex 5 - Checklist of Environmental and Social Impacts from Construction Works (Apply national construction standard and regulation)	206
Annex 6 - Social Inclusion Strategy will be developed and used as leverage for other projects and agricultural initiatives.....	206
Annex 7 – Outline of FPIC Implementation Plan	207
Annex 8 – Abbreviated Process for a Resettlement Action Plan (RAP)	209
Annex 10 – List of Organizations met during the national consultations	213
Annex 10 – sample of of the List of Stakeholder Consulation Participants and Pictures.....	216
Annex 11 – Pictures of Field Survey and Consulation Participants.....	218

LIST OF ACRONYMS

- AF-** Adaptation Fund
- AFD-** French Development Agency
- AfDB-** African Development Bank
- AFOR-** Rural Land Agency
- CAADP -** Comprehensive Africa Agriculture Development Programme
- CBO-** Community Based Organizations
- CCAC-** The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants
- CCC-** Coffee and Cocoa Council
- CIAT-** The International Center for Tropical Agriculture
- CIEWS-** Climate Information And Robust Early Warning Systems
- CIV-** Côte d'Ivoire
- CMIP5-** Coupled Model Intercomparison Project 5
- CNRA-** Agricultural Research Centre
- COSOP-** IFAD Country Strategic Opportunities Programme
- DGDDL-** General Directorate of Decentralization and Local Development
- DGDRME-** General Directorate of Rural Development and Water Control in the agricultural sector
- DLCC-** Directorate for the Fight against Climate Change
- ENRM-** Environment And Natural Resource Management
- ESD-** Environmental Significance Declaration Permit
- ESIA-** Environment and Social Impact Assessment
- ESMP-** Environment and Social Management Plan
- ESS-** Environmental And Social Standards
- EWS-** Early Warning Systems

FAO- Food and Agriculture Organization

FBO- Farmers Business Organisation

FFS- Farmers' Field Schools

FIRCA- Fund for Agricultural Research and Advice

FO- Farmers' Organization

FOLUR- Food Systems, Land Use and Land Restauration

GCM- Global Climate Models

GDP- Gross Domestic Product

GEF- Global Environmental Fund

GHG- Green House Gases

GIS- Geographic Information System

GoCI- Government of Côte d'Ivoire

IFAD- International Fund for Agricultural Development

ILO- International Labour Organization

IPCC- Intergovernmental Panel on Climate Change

LOA CI- Agricultural Orientation Law of Côte d'Ivoire

LULUCF- land use, land-use change, and forestry

M&E- Monitoring and Evaluation

MINADER- Ministry of Agriculture and Rural Development

MINEDD- Ministry of Environment and Sustainable Development

NCCSA- National Communication on Climate Smart Agriculture

NDC- Nationally Determined Contributions

NDP- National Development Plan

NGO- Non- Governmental Organization

NPCU- National Country Programme Unit

NRM- Natural Resources Management

NSC- National Steering Committee

OPA- Professional Agricultural Organizations

PACIPIL- Support Programme for the Development of Inclusive Value Chains and the Promotion of Local Initiatives

PADFA- Agricultural Development: Commodity Value-Chain Development Support Project

PDR- Project Design Report

PF-RRC- the National Platform for Risk Reduction and Disaster Management

PMU- Program Management Unit

PNAE CI- National Environment Action Plan

PNCC- National Climate Change Program

PND- Plan National de Développement

PNIA II- National Agricultural Investment Programme 2

PROPACOM OUEST- Projet d'Appui à la Production Agricole et à la Commercialisation Extension Ouest

PRORIL- Projet de promotion du riz local en république de CI

RCP- Representative Concentration Pathway

REDD+- reduce emissions from deforestation and forest degradation in developing countries

SDG- Sustainable Development Goals

SECAP- Social Environment and Climate Assessment Procedures

SEP- stakeholder engagement plan

SEP-REDD+- Permanent REDD+ Executive Secretariat

SLCP- Côte d'Ivoire's National Short-Lived Climate Pollutant

SNGRC- the National Strategy for Disaster Risk Management

SODEXAM- Société d'Exploitation et de Développement Aéroportuaire, Aéronautique et Météorologique de Côte d'Ivoire

SRI- System of Rice Intensification

TOC- Theory of Change

UNDP- United Nations Development Program

WAM- West Africa Monsoon

WFP- World Food Programme

PART I: PROJECT/PROGRAMME INFORMATION

PROJECT CATEGORY:	REGULAR
COUNTRY:	CÔTE D'IVOIRE
TITLE OF PROJECT:	INCREASING RURAL COMMUNITIES' ADAPTIVE CAPACITY AND RESILIENCE TO CLIMATE CHANGE IN BANDAMA BASIN IN CÔTE D'IVOIRE
TYPE OF IMPLEMENTING ENTITY:	MULTILATERAL IMPLEMENTING ENTITY
IMPLEMENTING ENTITY:	INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD)
EXECUTING ENTITIES:	MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT MINISTRY OF ENVIRONMENT AND SUSTAINABLE DEVELOPMENT SOCIETE D'EXPLOITATION DE DEVELOPPEMENT AEROPORTUAIRE AERONAUTIQUE METEO (SODEXAM)
AMOUNT OF FINANCING REQUESTED:	US\$ 6,000,000
MAIN UN PARTNER:	FOOD AND AGRICULTURE ORGANIZATION (FAO) AND UNITED NATIONS DEVELOPMENT PROGRAM (UNDP)

A. PROJECT / PROGRAMME BACKGROUND AND CONTEXT

1.1. Geography and Environmental context

1. The Republic of Côte d'Ivoire is located in West Africa and shares borders with Liberia and Guinea in the West, Ghana in the East, Mali and Burkina Faso in the North, and the Atlantic Ocean to the South. The country covers an area of 322,463 km², including 318,003 km² of land and 4,460 km² of water. The country's population, estimated at 15.4 million in 1998, increased to 25.07 million in 2018, with an average annual growth rate of 2.6% in 2018 (against 3.8% in 1975). The estimated population on Côte d'Ivoire is about 26.38 million with an annual growth rate of 2.57%. This demographic dynamic has led to an increasing pressure on the country's natural resources, especially in the forested areas, where the large majority of the population lives (75.5% compared to 24.5% for the savannah zone).
2. Côte d'Ivoire has four agro-climatic zones, such as Sub-Saharan Côte d'Ivoire (zone 1), pre-forest Côte d'Ivoire (zone 2), average forest Côte d'Ivoire (zone 3) and lower forest Côte d'Ivoire (zone 4) (Table 1, Figure 1). The forest and Guinean climate south have two rainy seasons such as May to mid-July and October to November with an annual rainfall between 1200 and 2400 mm. In the north, the climate is Sudano-Guinean with a single rainy season from July to November and an annual rainfall between 1100 and 1600 mm. The climate is tropical along the coast, semi-arid in the far north and there are three seasons: warm and dry (November to March), hot and dry (March to May), hot and wet (June to October). Historical annual precipitation (1971-2000) shows a deficit of 300 – 500 mm/year in the first and second zones.

Table 1: Historical annual precipitation (1971-2000) of the four agro-climatic zones

Agro-Climatic Zones	Rainy Season Characteristics	Dry Season	Annual Rainfall (mm/year)	Water Deficit (mm/year)
Sub-Saharan Côte d'Ivoire (zone 1)	1 rainy reason (June-October)	1 dry season (7 – 8 Months)	900 - 1400	500
Pre-forest Côte d'Ivoire (zone 2)	2 rainy seasons (May to July and October-November)	2 dry seasons (December-April and August-September)	1000 and 1500	300 to 500
average forest Côte d'Ivoire (zone 3)	2 rainy seasons (April to July and October-November)	2 dry seasons (December to March and August to September)	1200 to 1600	100 - 300
Lower Forest Côte d'Ivoire (zone 4)	2 rainy seasons (March to June and october to November)	2 dry seasons (January – February and August September)	Above 1600	Less than 100

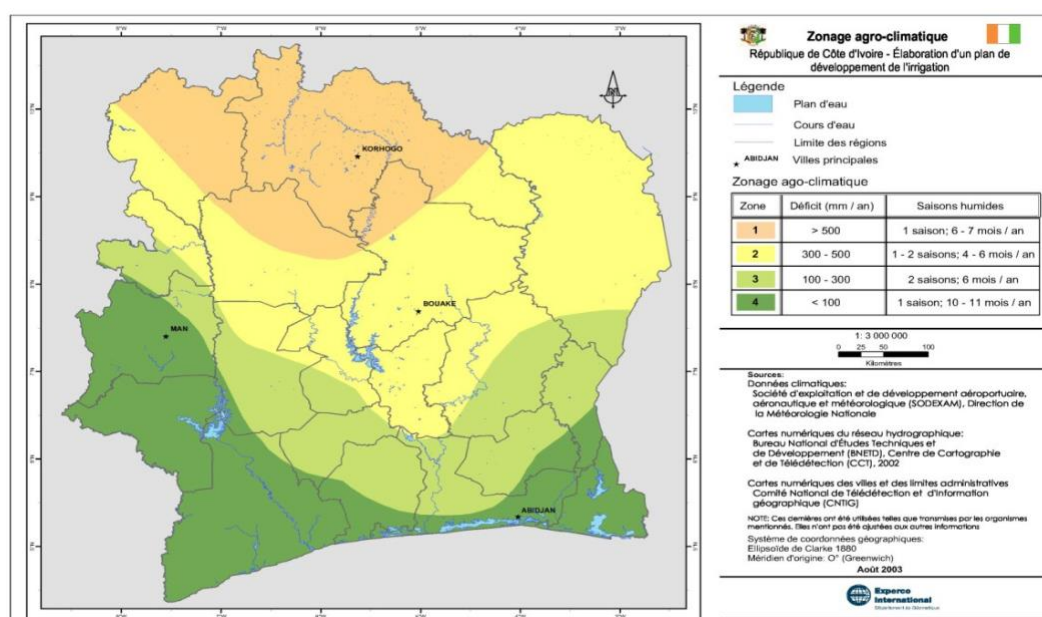


Figure 1: Agro-climatic zones in Côte d'Ivoire (MINAGRI, 2003; MINESUDD, 2013)

1.2. Economy, Population and Agriculture

- Since 2011, the economy has expanded by an average of 8% per year, making Côte d'Ivoire one of the fastest growing countries in the world. Subject to the post-pandemic global economic recovery, the IMF estimates that due to the outbreak of the COVID-19, GDP growth is expected to slow down to 2.7% in 2020 and pick up to 8.7% in 2021.
- The country's economy is mainly based on agriculture which includes forestry, livestock, hunting, and fishing production. The economy is based mostly on rain-fed agriculture and it has a strong dependence on river flow. The sector contributes about 21.2% of GDP and accounts for 47% of total exports of the country. Côte d'Ivoire is the world's largest producer and exporter of cocoa (40% of the world production), one of the major three producers and exporters of cashew, and a major exporter of palm oil, coffee, and oil. The primary employs less than half of the country's active population (48%).

5. Almost half of the population is poor with a poverty rate of about 46.3%, representing more than 10 million people. In rural areas, more than half of the population (55.4% or 6,549,999 people) live below the poverty line. At national level about 10% (2,304,858 people) of the population suffer from extreme poverty and hunger of which about 74% (1,700,312 people (74%)) live in rural areas. In the Human Development Index (HDI), the country is ranked 172nd (out of 188) in the UNDP's 2015 (HDI). The HDI has increased from 0.388 to 0.492, which is an increase of 26.9% between 1990 and 2017. Côte d'Ivoire's 2017 HDI of 0.492 remains below the average of 0.504 for countries in the low human development group and below the average of 0.537 for countries in Sub-Saharan Africa. Income inequality remains high as reflected by the Gini index of 41.5 in 2015 (World Bank). The national poverty rate is provided in **Error! Reference source not found.**
6. In 2015, the national household survey revealed a reduction in poverty (46.3% against 48.9% in 2008). This decline is explained by the good economic performance recorded since the end of the socio-political crisis in April 2011. However, poverty is more pronounced in rural areas than in urban areas (56.8% against 35.9% in 2015). According to the household survey on the impact of the COVID-19 pandemic carried out in April 2020, the average annual household income fell by 47.2%. The employment of 78.8% of household heads was impacted due to cash flow tensions affecting 64.4% of informal sector enterprises which face a reduction in the level of activity by 52.8%. As a result, the number of additional households that fall below the poverty threshold is estimated at 32% (National Institute of Statistics and UNDP).
7. The agriculture sector is an important driver of Côte d'Ivoire's economy, accounting about 22% of GDP and more than 75% of exports. Agriculture employs close to 70 per cent of the active population¹ and three out of four working adults living in rural areas are employed in the agriculture sector². The rural economy is dominated by the agriculture sector, which mostly constitutes: (i) export-oriented cash crops; and (ii) food crops and animal and fish production for domestic consumption – the cash crops subsector constitutes cocoa, coffee, rubber, oil palm, cotton, and cashews. Rural poverty has traditionally been significantly higher in the North – where the potential for agriculture has not yet been realized – whereas the South benefits from higher and more reliable rainfall and better soils and produces most of the export crops. Nevertheless, both the North and South suffer from low agricultural productivity, high cost of inputs, considerable post-harvest losses, inadequate use of modern farming techniques, and lack of modernization and mechanization, all contributing to a decline in agricultural production³.
8. As agriculture sector's contribution to *poverty reduction* is much higher than non-agricultural related sectors, the combination of climate and non-climate stressors makes agriculture sensitive to climate change, affecting the most disadvantaged parts of the community. A poverty reduction of 1% at rural and national levels can be attributed to 73% growth to the agricultural sector and only 27% to non-agricultural sectors⁴, which implies that supporting the agricultural sector would increase the rural population's adaptive capacity.
9. Food and nutrition security are also another major issue in Côte d'Ivoire. According to the PNIA II, undernourishment (13.3%) and malnutrition (29.6%) is identified as one of the major challenges that need to be addressed during the 2017-2025 timeline. As a result, numerous actions are under implementation to improve food and nutrition security. For example, in 2018, the International Fund for Agricultural Development (IFAD)⁵ provided a loan to benefit and help increase incomes and food and nutrition security for over 32,500 households in the rural Bagoué, Poro, Tchologo, Hambol and Gbêkê regions of Côte d'Ivoire. The food and nutrition security is concentrated in improving packaging, storage, processing and marketing of rice, vegetables and mango.

¹ IFAD, 2018. IFAD loan of US\$18.5 million will boost food security and raise incomes of farmers in Côte d'Ivoire. March 26, 2018. [https://www.ifad.org/en/web/latest/news-detail/asset/40241921'](https://www.ifad.org/en/web/latest/news-detail/asset/40241921)

² World Bank, Côte d'Ivoire SCD – From Crisis to Sustained Growth, 2015 (p.xiii); at a national level (urban and rural population), half of the population is employed by the Agriculture sector.

³ World Bank, Côte d'Ivoire SCD – From Crisis to Sustained Growth, 2015 (p.54).

⁴ *Programme national d'Investissement Agricole (2010-2015) de la Côte d'Ivoire. 2010*

⁵ IFAD, 2018. IFAD loan of US\$18.5 million will boost food security and raise incomes of farmers in Côte d'Ivoire. March 26, 2018. [https://www.ifad.org/en/web/latest/news-detail/asset/40241921'](https://www.ifad.org/en/web/latest/news-detail/asset/40241921)

10. Food insecurity affects 12.8% of households, with a higher incidence in rural areas (15%) than in urban areas (10.6%). Nationally, 30% of children under the age of 5 suffer from chronic malnutrition. This rate is at the limit of the “critical” threshold of 40% in the North and West regions (SMART, 2011). From a nutritional point of view, it should be noted that in 2014, 20.5% of the Ivorian population did not reach the minimum level of caloric intake (ENV, 2015).
11. The National Development Program (PND, 2016-2020) constitutes the single frame of reference for all of Côte d’Ivoire’s development strategies and interventions. It aims to create wealth and employment by promoting the private sector and inclusive development. In the agricultural sector, it intends to accelerate the structural transformation of the economy by establishing a strong linkage between agriculture, agribusiness and industry.
12. The National Program of Second Generation Agricultural Investment (PNIA II, 2018-2025), which aims to improve the added value in the agro-sylvo-pastoral and fishery sector, through production systems respectful of the environment and the well-being of the population is consistent with the Agricultural Orientation Law of Côte d’Ivoire (LOA CI). The main objectives of the PNIA II are to improve (i) the governance of the agricultural sector; (ii) the productivity and competitiveness of the agricultural sector, and (iii) food sovereignty and the resilience of populations. According to the PNIAII, Professional Agricultural Organizations (OPA) and the private sector (agro-industrial companies) are expected to play an important role in achieving these objectives.
13. In order to eradicate poverty and improve the livelihood of rural population, in the second agricultural investment plan (PNIA II), it clearly states that any agricultural projects should contribute to: increase in the income of smallholder farmers, employment in the agriculture employment, and ensure food security/household food consumption spending.
14. The Government of Côte d’Ivoire (GoCI) and development partners recognize that the rural sector has been hampered by various factors including: (i) low productivity stemming from low use of modern varieties, technologies and mechanization; (ii) difficult access to markets; (iii) difficulties in accessing financial services; (iv) weak rural entrepreneurship and off-farm activities; and (v) weak agricultural organizations, particularly farmers’ organizations (FOs). Cognizant of the latter issue, the Government has deployed efforts to organize farmers into cooperatives and the value chain actors into inter-professional platforms in order to gain efficiency and create space for business transactions, improve dialogue among stakeholders and the development of rural micro, small and medium-size enterprises (MSMEs).
15. Cocoa accounts almost 40% of the country’s export earnings and is the source of livelihood for more than five million Ivorians. While cocoa contributes to household income, the majority of cocoa farmers are living under the poverty line. Rising temperatures and increasingly irregular rainfall patterns combined with inappropriate agricultural practices are threatening the cacao sector. Such situation reduce soil fertility and water retention⁶. As show in **Error! Reference source not found.**, cocoa beans have the highest harvest area followed by yams, and cashew nuts⁷. On the other hand, yams, cassava, and plantains have high consumption (**Error! Reference source not found.**). The most significant export commodities for Côte d’Ivoire are cocoa, coffee, timber, petroleum, cotton, bananas, pineapples, palm oil and fish. As the implementation of irrigation projects is one of the country’s priorities in the agricultural sector, the climate change impacts on water resources and the agriculture sector will inevitably hamper the government’s priorities particularly in coffee and cocoa producing areas. Crops production into higher lands in the western part of the country remains a challenge, hence a clear sustainable agricultural development strategy is needed. The crop production is shown in **Error! Reference source not found.**, which indicates cassava with the highest production of 2.3 million tonnes in 2013.

⁶ World Bank, 2019: *Ivory Coast Has Lost 25% of Its Natural Capital in 25 Years & 80% of Its Forests Since 1970* (World Bank, August 1, 2018).

⁷ Ahossane, K., Jalloh, A., Nelson, G., and Thomas, T., 2013. *West Africa: Agriculture and Climate Change: A Comprehensive Analysis for Côte d’Ivoire* (Chapter 5).

16. As a consequence, and for all these crops, the yield remains stalled and below the average potential at the regional level. The observed increased in total production for these crops is mostly correlated with the expansion of production areas.⁸

Table 2: Consumption of leading food commodities in Côte d'Ivoire, 2003–05 (thousands of metric tons)

Rank	Crop	Percent of total	Food consumption
	Total	100.0	11,068
1	Yams	29.8	3,298
2	Cassava	17.2	1,899
3	Plantains	10.9	1,210
4	Rice	7.7	855
5	Other vegetables	5.7	636
6	Fermented beverages	4.0	446
7	Beer	3.4	380
8	Maize	3.4	380
9	Wheat	2.6	293
10	Sugar	1.8	203

Table 3: Harvest area of leading agricultural commodities in Côte d'Ivoire, 2006–08 (thousands of hectares)

Rank	Crop	Percent of total	Harvest Area
	Total	100.0	6,940
1	Cocoa beans	31.0	2,151
2	Yams	10.4	723
3	Cashew nuts	9.5	657
4	Coffee	8.4	585
5	Plantains	5.5	382
6	Rice	5.4	375
7	Cassava	4.9	339
8	Maize	4.2	292
9	Seed cotton	3.6	247
10	Oil palm fruit	3.1	212

Source: FAOSTAT (FAO 2010).

Note: All values are based on the three-year average for 2006–08.

Table 4: Main Crops Yield (2013) for some key commodities (thousands of metric tons)

Crops	Area Harvested, Ha	Yield, Hg/Ha	Production, 1000 tonnes
Cassava	360,000	69,444	2,500
Sugar cane	25,500	745,098	1,900
Rice, paddy	380,000	49,333	1,875

⁸ FAOSTAT 2020

Maize	340,000	19,441	661
Seed cotton	230,000	11,433	263
Groundnuts, with shell	80,000	11,000	88
Millet	65,000	7,692	50
Sorghum	68,000	7,059	48
Sweet potatoes	25,000	19,200	48
Beans, dry	39,000	8,974	35

Women and youth are particularly prone to poverty

17. A gender-based poverty analysis revealed that poverty is more prevalent among rural women (63.6 per cent) and rural youth under the age of 25 (64.6 percent) due to their limited access to assets (water, land, fertilizers and equipment) and/or decent employment opportunities. According to the African Development Bank (AfDB) Gender Equality Index, Côte d'Ivoire ranks 43rd out of 52 African countries, which confirm these pronounced inequalities.
18. In Côte d'Ivoire, agriculture will remain the main source of growth and poverty reduction. It is estimated that growth in the agricultural sector reduced the national poverty rate by 4.7 percentage points in 2015 compared to its 2008 level⁹. However, unstable revenues and poor productivity in the rural economy, especially in the agriculture sector, hinders poverty reduction. This has been amplified in recent years because of increased climate variability, including a shorter rainy season combined with unpredictable rainfalls in particular at the planting seasons.

1.3. Natural Resource Management (NRM)

19. Côte d'Ivoire is endowed with rich and diverse ecosystems and natural resources (vast forests, minerals deposits, fisheries, etc.). The forests provide immense ecological benefits (medicinal plants, food source, non-timber products, energy, etc.).
20. Côte d'Ivoire has three agro-ecological zones such as the lagoon region, the forest region, and the savannah region (**Error! Reference source not found.**), which are distributed among the four agro-climatic zones (Figure 1). In general, the land falls into two distinct agricultural regions such as forest region (about 140,000km²) in the south; and the drier savannah region (about 180 000 km²) in the north where economic growth is generally slower. Nearly 64% of land in Côte d'Ivoire is used for agriculture. Of the country's total land area, 8.8% is arable, 13.2% has permanent crops, 41.5% permanent meadows and pastures, and 32.8% forest. The country's agriculture is 98% rainfed and based on traditional, manual, land-extensive swidden practices (WorldBank, 2012). The north half of the nation is characterized as Savanna. Savanna soils are generally light and with medium to poor soil quality, which led to low crop yields (Handloff, 1988).
21. The country has four (4) major rivers including Cavally, Sassandra, Bandama and Comoé. The water flow in these rivers is from north to south. Côte d'Ivoire has about 578 reservoirs used for agriculture, livestock, energy production and drinking water of which the Bandama basin contains 267, including two (2) hydroelectric dams (Kossou and Taabo).
22. The threat to the preservation of Côte d'Ivoire's forest resources, like other countries, is the heavy dependence of rural households on these resources for their livelihoods - for food production, firewood and charcoal for cooking, hunting and timber for building and furniture.
23. Rainfall variability combined with intense deforestation has also led to reduction in river flows and groundwater recharge. For example, in a case study conducted in the northern part of Bandama basin, the rainfall deficit has led to a significant reduction in runoff of about 27% to 49% (Goula et al. 2006, Kanohin et al. 2009).

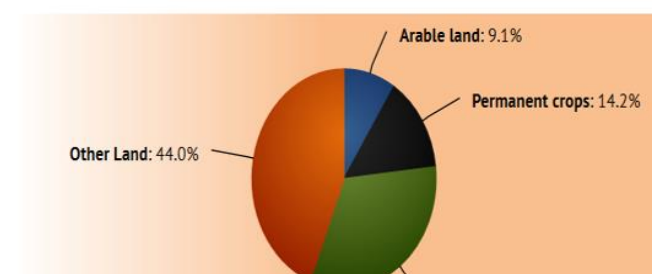
⁹ Programme national d'Investissement Agricole (2010-2015) de la Côte d'Ivoire. 2010.

24. Amongst the key constraints, unsustainable or inadequate agricultural practices (e.g. traditional slash and burn land preparation, land preparation for rice and cassava cultivation, inefficient use of water, erosion, and diseases of cocoa trees due to climate and non-climate related factors) are affecting agricultural production. In addition, absence or inadequate infrastructures to help withstand climate change impacts are almost none-existent. As a result of growing energy needs in the form of fuelwood (and charcoal), high deforestation and land clearing for developing cocoa plantations are also one of the key problems causing the country to continue losing top soil from hectares of lands every year.
25. The TNC indicates that the highest rainfall deficits are observed in Boundiali (21%), in the extreme north and in Grand-Lahou (24%) in the extreme south on the coast, both located in the Bandama watershed. Moreover, the consecutive deficits are practically of the same order and vary from 46% at Tortiya station in the center to 56% at the station of Tiassale in the south towards the river outlet. Deficits seem to increase with the amount of annual average discharge observed and the area covered by the hydrographic network in the watershed.
26. Traditional irrigation which consumes high quantities of fresh water is widely practiced, which covers 175,000 ha in lowlands, 200,000 ha in plains and 100,000 ha in coastal marshes. Its expansion can have local consequences on pumped reserves and cause tensions over land access between farmers, and/or between farmers and herders.
27. Cultivated areas have increased exponentially from 5.5million ha in 1969 to 7.4million ha in 2012 while on the other hand average yield for key crops remained stalled over the last two decades (FAOSTAT). From 2000 to 2012, cultivated areas continue to increase but lesser than before 2000 (figure 4, FAO 2015). A survey of 394 individuals indicate that for areas under cultivation, 1986–2015, the direct factors of deforestation include (**Error! Reference source not found.**): agriculture (62%), cocoa farming (38%), natural rubber farming (23%), palm farming (11%), cashew plantations (7%), food crops (6%) rice farming (5%), coffee farming (5%), other cash crops (4%), logging (18%), clear-cut logging > 1000 m² (64%), production of charcoal (36%), infrastructures (10%), habitat (rural, urban) (94%), transport (6%), mining (8%), artisan gold panning (80%), industrial gold panning (20%), and bush fires (3%) (Source FAO, 2015).

Evolution of land use

	Area (1000 ha)		Annual Growth, %	
	1990-2000	2000-2012	1990-2000	2000-2012
Land area	31,800.00	31,800.00	0.00	0.00
Arable land	2,798.36	2,846.15	1.42	0.27
Permanent crops	3,700.00	4,207.69	1.03	1.33
Forest	10,275.00	10,386.37	0.10	0.06

Land use - 2012



	1994	1999	2004	2009	2010	2011	2012
Agricultural land (% of land area)	61.95	61.64	62.58	64.47	64.47	64.47	64.78
Arable land (% of land area)	9.43	8.81	8.81	9.12	9.12	9.12	9.12
Arable land (hectares per person)	0.22	0.18	0.16	0.16	0.15	0.15	0.15
Permanent cropland (% of land area)	11.64	11.95	12.26	13.84	13.84	13.84	14.15

Figure 2: Evolution of land use in Côte d'Ivoire, FAO, 2015

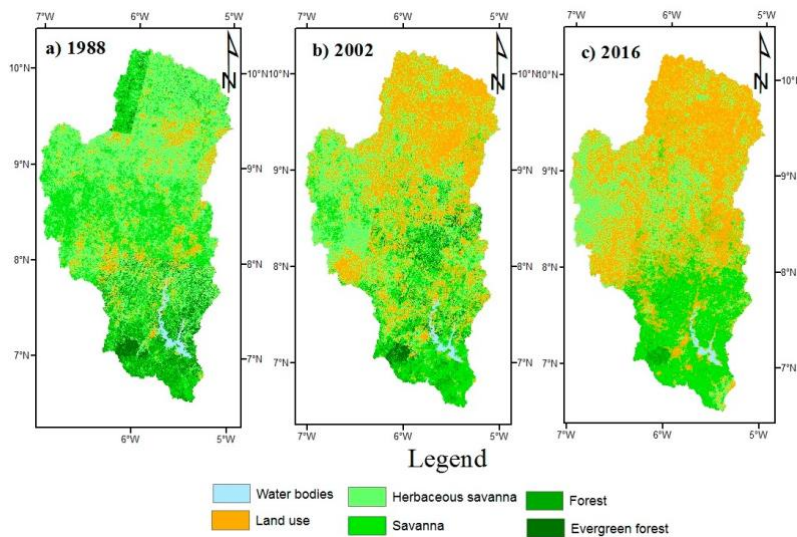
28. The Côte d'Ivoire is recorded to have over 1,200 animal species including 223 mammals, 702 birds, 125 reptiles, 38 amphibians, and 111 species of fish, alongside 4,700 plant species. It is the most biodiverse country in West Africa, with the majority of its wildlife populating living in the nation's rugged interior. The nation has nine national parks, the largest of which is Assgny National Park, which occupies an area of around 17,000 hectares or 42,000 acres¹⁰.

1.4. Climate change

1.4.1. Current climate hazards, variability and impacts

29. The country is very susceptible to climate change shocks. Côte d'Ivoire's Climate Change Vulnerability Index is among the highest in the world, ranking the country 145 out of 181¹¹. The country's vulnerability is attributable primarily to the over-exploitation of forests (which totalled 2 million ha in 2018 in contrast to 16 million ha between 1960-2017 - UN REDD Côte d'Ivoire, 2019). This shrinking of forest land has contributed to the over-exploitation of soil that has resulted in fertility loss, erosion and an increase in greenhouse gas emission. For example, in the Bandama basin, from 1988 to 2016, the vegetative area (herbaceous savanna, savanna and the evergreen forest) has been decreasing (

30.



31. Figure 3:). Land use change has been increasing about 11.56% per year¹² which could increase the county's vulnerability, if continued an abated.

Figure 3: Land use and landcover change in Bandama basin

¹⁰ https://en.wikipedia.org/wiki/Ivory_Coast#Environment

¹¹ <https://gain.nd.edu/our-work/country-index/rankings/>

¹² Kouame, Y., Obahoundje S., Diedhiou, A., François, B., Amoussou, E., Anquetin, S., Didi, R., Kouassi, L., N'guessan Bi, V., Soro, E., and Yao, E., 2019. Climate, Land Use and Land Cover Changes in the Bandama Basin (Côte D'Ivoire, West Africa) and Incidences on Hydropower Production of the Kossou Dam. *Land* **2019**, 8, 103; doi:10.3390/land8070103. (P7).

32. Temperatures recorded follow a south-north progression with the lowest annual temperatures in the mountainous area in the West and the highest in the far North. The map of the average annual accumulations of the number of hours of sunshine shows a distribution according to a South-North climatic gradient close to that of temperatures (Figure 4). The increase in air temperature has notable consequences with increased evapotranspiration of soil and plants, by reducing the amount of water available for plant growth. Furthermore, the study of climate change on water resources in the case of the watersheds of the Bandama and Sassandra rivers showed that the average monthly temperatures in these two basins should increase between 2.3°C and 4.1°C over the next four decades. This increase, combined with declining rainfall and water resources, will inevitably affect agricultural production.

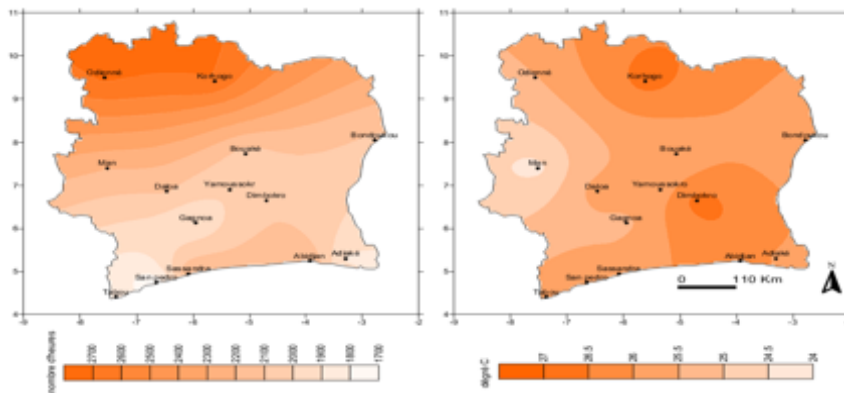


Figure 4: Number of hours of sunshine (left) and temperature (right) between 1960 and 1997

33. The aridity index will increase but will remain below 2 indicating that the area will remain Sudano-Guinean with low humidity forests and humid savannas. The observed historical annual average rainfall indicates that from 1950 to 1999, rainfall has been decreasing (**Error! Reference source not found.**). Bush fires will be more frequent and would destroy pastures and plantations. In Agroclimatic Zone 4 (Korhogo and Ferké), the current average temperature of 26-28°C is expected to increase to 29-31°C in a century in 2100. The current average annual rainfall of 900-1400 mm / year will decrease by an average of 200 mm/year (-22%). The aridity index will increase and go above 2 transforming the northern region of the Coast Côte d'Ivoire into a semi-arid zone and particularly at risk because soil erosion could be irreversible
34. Farmers' high dependence on rain-fed agriculture and natural resource-based livelihoods are the key factors influencing their vulnerability. However, while unaware of the meaning of climate change, farmers have already consciously started to adapt their farming practices to changing climate patterns. Farmers have reported that they are experiencing changes in rainfall patterns characterized by rainfall in the dry season and dry periods in the rainy season. Climatic change has manifested more intense rainfall patterns with more frequent severe floods and seasonal droughts, late onset of rains, rising temperatures, particularly in the dry season, stronger winds including reports of local tornadoes, more intense thunderstorms and more frequent landslides.
35. The IPCC predicts that without adaptation, such tropical regions will experience negative impacts in the production of wheat, rice and maize due to temperature increases¹³. The historical (1901 – 2016) temperature and rainfall variability indicates the historical average of temperature where it is very high (Figure 5).

¹³ https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap7_FINAL.pdf

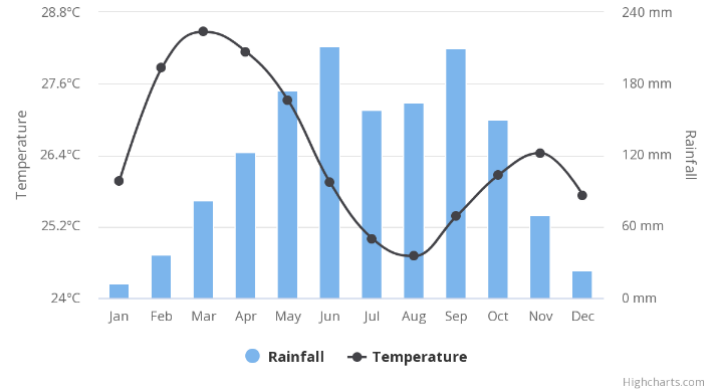


Figure 5: Average Monthly Temperature and Rainfall of CIV for 1901-2016¹⁴

1.4.2. Anticipated climate change and its impacts

36. **Projected precipitation decrease:** Côte d'Ivoire's historical climate variability indicates that compared to the 1961-1990, from 1986-2005 an average decrease of 6% rainfall is recorded over the whole Ivorian territory, with notable decreases of 13% in Sassandra i.e. south west and 11% in Adiaké i.e. south-east of the country. The trend is expected to continue, and it is expected that by 2050 and 2070, the total annual precipitation could increase on average by 0.3% and 1.2%, respectively, with the highest in the Northern and Western regions of Côte d'Ivoire (Figure)¹⁵. However, it is expected that precipitation could decrease by about 3% in the central part of the country, where the project is expected to focus. Based on the RCP 4.5 scenario, by 2100 it is likely that daily precipitation will decrease by about 8% during the months of April to July (TNC, 2017) which correspond for most crops to the heart of the growing season.
37. **Projected temperature increase:** Throughout the country, from 1971-2000, an annual average temperature has been increasing and has been higher than average. In the period of 1960-2010, temperatures have risen by 1.6°C throughout the country, and is projected that temperatures will continue to increase by as much as 1.8°C and 2.1°C in 2050 and 2070, respectively (Figure) with the highest in the northern (zone 1) and north-central parts (zone 2) of the country. Under the RCP 4.5 scenario, temperature could rise by 3°C by 2100 over most of the country from north to south. If the current trend is maintained, the projection over a century would give rise to an average temperature rise of 3.2°C in Côte d'Ivoire¹⁶ (Figure 7 and 12).

¹⁴ <https://climateknowledgeportal.worldbank.org/cote-divoire/climate-data-historical>

¹⁵ FAO, 2018. *Climate-Smart Agriculture in Côte d'Ivoire*, CA1322EN/1/08.18 <http://www.fao.org/3/ca1322en/CA1322EN.pdf>

¹⁶ MINSEDD, 2017. *Troisième Communication Nationale (TNC) à la convention cadre des nations Unies sur les Changements Climatiques*.

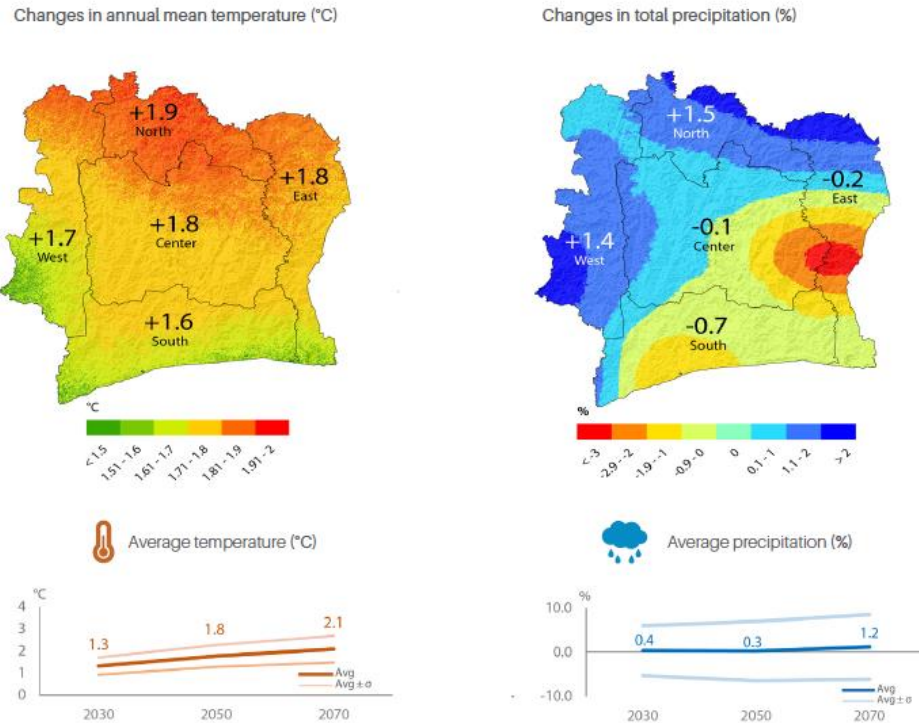


Figure 6 : Projected changes in temperature and precipitation in Côte d'Ivoire by 2050

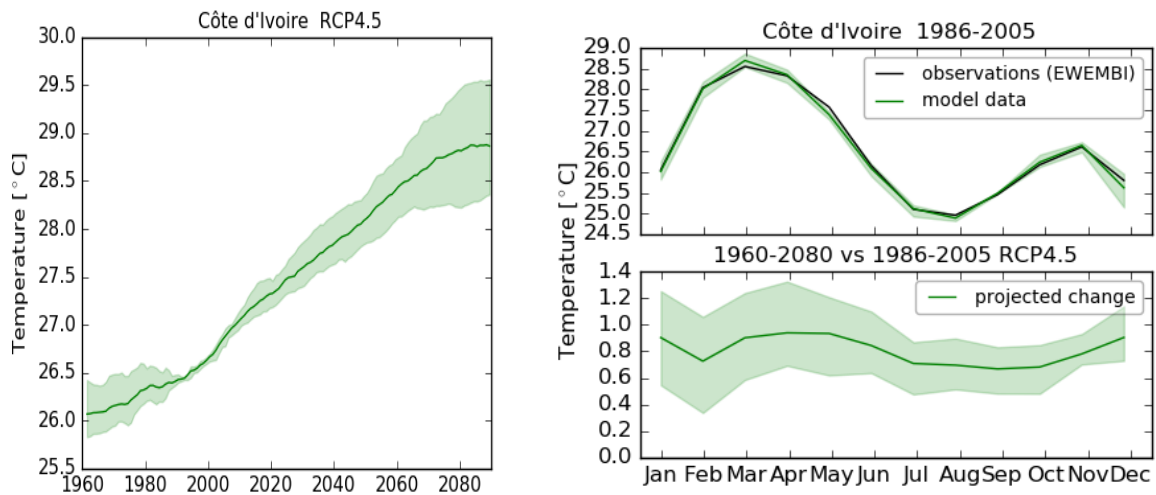


Figure 7(Left): Regional climate model projections for temperature displayed as 20 year running mean. The line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5. (Climate Analytics, 2020)

Figure 8 (Right): Top right: Annual cycle of temperature for the period 1986-2005. Bottom right: Changes in annual cycle projected for 1960-2080 compared to the reference period 1986-2005. EWEMBI data is shown in black, regional climate model simulations in green. The green line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5. (Climate Analytics, 2020)

38. As a consequence of the changing precipitation and temperature patterns, the main climates of Côte d'Ivoire are projected to progressively shift throughout the 21st century. As of the current period, Côte d'Ivoire has two dominating climates, following the Koppen classification: a tropical climate at the

exception of the northern part of the territory characterized by a tropical wet climate. Figure 9: shows the progressive shift in climates in Côte d'Ivoire compared to current days (CODEX Historical Climate Type Map) in the RCP4.5 (CODEX RCP4.5 Climate Type Map) and RCP8.5 (CODEX RCP4.5 Climate Type Map) scenarios.

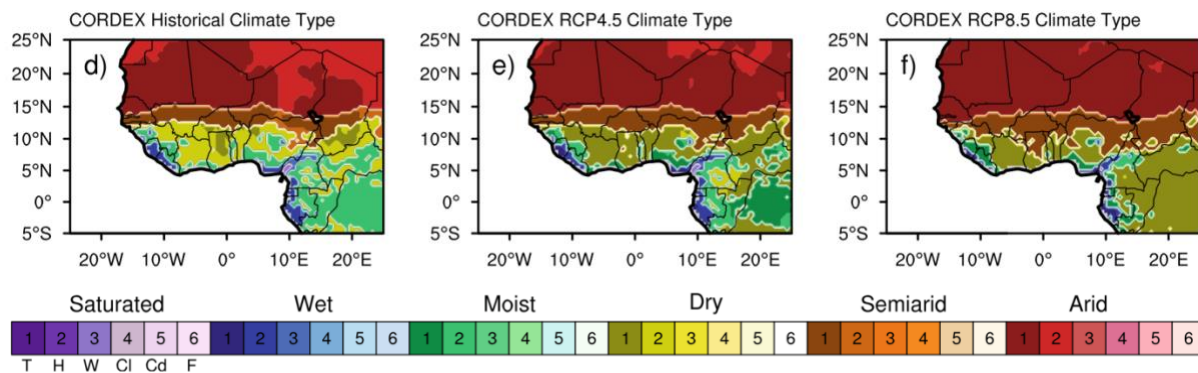


Figure 9: Distribution of climate types for reference period (1985–2004; left panel), future RCP4.5 (2080–2099; middle panel) and RCP8.5 (2080–2099; right panel) for CORDEX (d, e and f) ensemble using all models. Abbreviations definition: T Torrid, H Hot, W Warm, Cl Cool, Cd cold, F Frigid. Source: Sylla et al., 2016)¹⁷

39. **Extreme events (extreme precipitation):** Using an ensemble of 14 CORDEX-Africa RCMs, during the West Africa Monsoon (WAM) seasons (i.e., AMJ, JAS, OND), a general increase in rainfall intensity (SDII) and extreme precipitation intensity (R95PTOT)¹⁸ is observed in Côte d'Ivoire. Compared to the reference precipitation mean value observed in 1976–2005, an increase of 50–60% extreme precipitation intensity will occur over the entire country under the RCP8.5 scenario. On the other hand, during the pre-monsoon (AMJ), an increasing dry spell length (CDD) of about 30% and 20% is projected compared to reference (1976–2005) under RCP8.5 and RCP4.5 scenarios, respectively. The study concluded an increased intensity of precipitation events under future climate scenarios suggesting an amplification of extreme precipitation events. As a result, Côte d'Ivoire's flood risk zones (Figure 10:) are expected to be exposed to increased climate induced flood risks.
40. **Extreme events (extreme temperature):** The results of an ensemble of 14 CORDEX-Africa simulations show an increase in the warm extreme indices such as the warm spell days index (HWF1), very warm days frequency index (TX90P), and the warm nights frequency index (TN90P) over the entire country under both emission scenarios¹⁹.
41. The results of projections to 2030 and using the scenario AR5 show: i) an increase in average temperatures of around 1.2°C which is already relatively large; ii) the drier May-June months; iii) no strong variation in precipitation at Bouaké (Bandama valley) and Korogho (Poro region); iv) an increase in heavy rains from April to September-October in the entire intervention area.

¹⁷ Sylla, M., Michel, Nikiema, M., Gibba, P., and Klutse, N., 2016. Climate Change over West Africa: Recent Trends and Future Projections (Chapter: 3 Publisher: Springer International Publishing Editors: Joseph A. Yaro, Jan Hesselberg). April 2016.

¹⁸ Yapo, A., Diawara, A., Kouassi, B., Yoroba, F., Sylla, M., Kouadio, K., Tiémoko, D., Koné, D., Akobé, E., and Yao, K., 2020. Projected changes in extreme precipitation intensity and dry spell length in Côte d'Ivoire under future climates. Theoretical and Applied Climatology. 30 January 2020.

¹⁹ Yapo, A., Diawara, A., Kouassi, B., Yoroba, F., Sylla, M., Kouassi, B., Sylla, M., Kouadio, K., Odoulami R., and Dro Touré Tiémoko, D. 2019. Twenty-First Century Projected Changes in Extreme Temperature over Côte d'Ivoire (West Africa). International Journal of Geophysics. 23 December 2019.

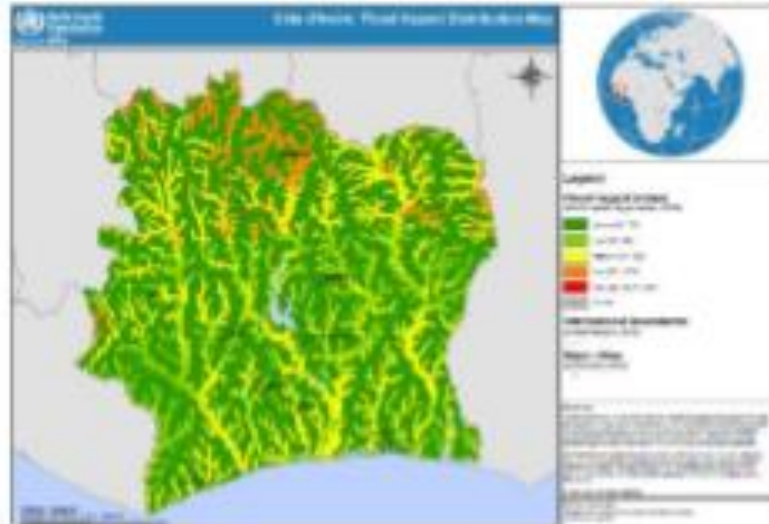


Figure 10: Flood risk forecasts in Côte d'Ivoire

42. **Reduction in the length of the seasons:** The length of the growing season has generally reduced: (i) from 10 to 20 days in the Vallée du Bandama compared to (ii) from 0 to 10 days in the Savannah district (Poro region).
43. Overall, the impact of the effects of climate change on agricultural production are: i) an increase in air temperature which may have consequences on the increase of evapotranspiration of soil and plants that will result inevitably in a decrease in the amount of water available for agriculture; and ii) an increase in the frequency and magnitude of climatic hazards such as heavy rain and floods, especially in the far east and in the Poro region, which is a high risk of flooding.
44. The sectors most likely to be affected by climate change are agriculture, forestry, fisheries, energy and mining. The population in the coastal areas and those who depend mostly on rain fed farming (close to 90% of crop areas fall under this category) and fishing are the most vulnerable groups.
45. Changes in precipitation and evapotranspiration could also affect inland waters impacting fish reproduction.²⁰ Côte d'Ivoire's overall country index indicates that the country has scored 37.9, which reflect the countries high vulnerability to climate change.
46. Although Côte d'Ivoire's tropical forests are likely to be impacted by climate change. Human activities (slash and burn practices, urbanization, logging, firewood, and charcoal production, etc.) are likely to have a more severe impact.
47. Out of the total land area (318,000 ha), 32.7% is covered by tropical forest and arable lands (uplands and lowlands) covers around 63.8 per cent of the total land area. Agriculture represents 24% of the 2011 GDP of US \$24.07 billion
48. The future consequences of the changing precipitation and temperature patterns could significantly affect the production of the subsector. The International Center for Tropical Agriculture (CIAT) projects a reduction in climate suitability for cocoa production by up to 20 % in the southern districts and up to 40 % in the north-eastern upland districts by the 2050s (Figure 11:).

²⁰ Ibid

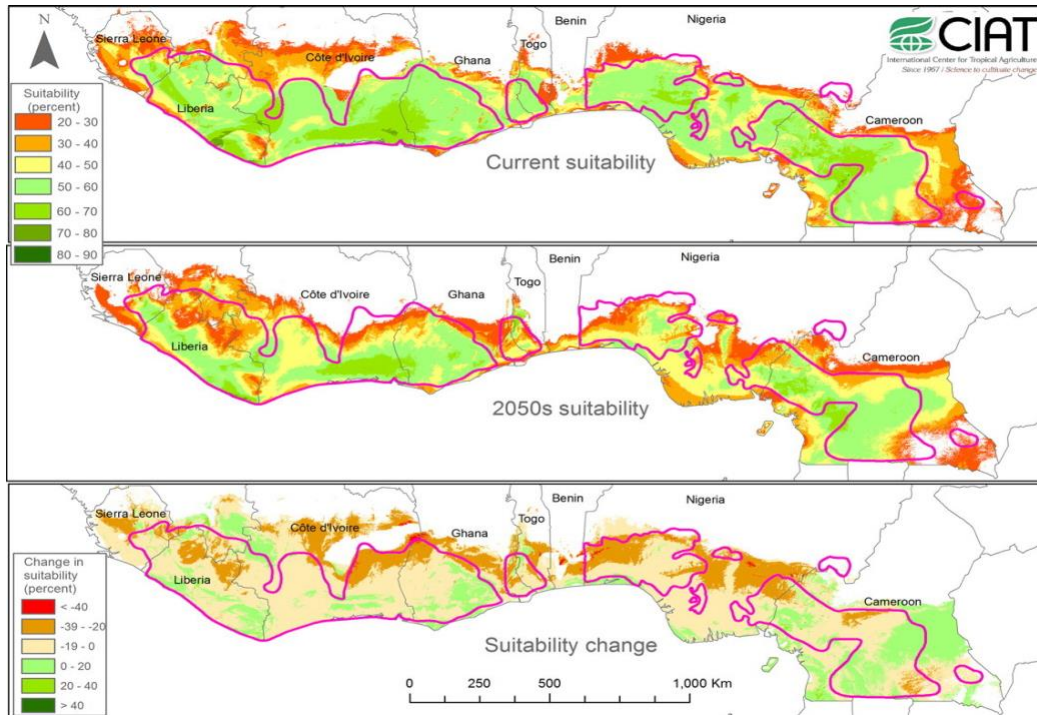


Figure 11: Relative climatic suitability (in percent) for cocoa of the West Africa cocoa belt under current and projected 2050s climate conditions, as well as suitability change, according to the Maxent model based on 24 climate variables.

1.4.3 Climate Change and Its Impacts on Water Resources in the Bandama Basin

49. Climate projections show that the temperature may increase and monthly rainfall may decrease from December to April in the future in the Bandama basin. In addition, the climate change analysis shows that the impacts are very different from RCP 4.5 to RCP 8.5. Under RCP 4.5, mean monthly runoff and groundwater recharge may increase for all horizons. Changes in runoff and ground water recharge are mainly dominated by the variations in projected precipitation. Especially in the long-term, increasing precipitation in the wet-season would make it wetter resulting in higher runoff and aquifer recharge in the watershed. This phenomenon is due to the strong aquifer-river relationship on the basin. Indeed, the increase in aquifer levels would lead to an increase in the flow of watercourses supplied by the aquifers.

50. The Bandama basin, which is the target areas of the study is shown in Figure 12.

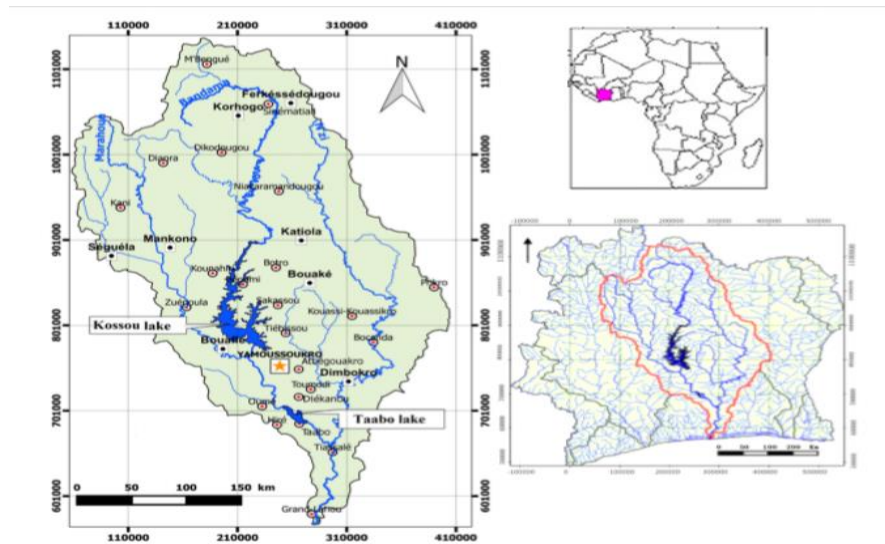


Figure 12: Targeted areas in the Bandama basin

51. The hydro meteorological infrastructure capacity in Sub-Saharan Africa is the lowest of all the global regions, with observation network density (number of stations per 10,000 km sq.) as low as 0.4 in Niger, 0.5 in Mali, 1.1 in Nigeria, 1.6 in Senegal, 1.7 in the Côte d'Ivoire, 6.2 in Malawi and 45.2 in Rwanda. Currently, the network of meteorological and hydrological stations around the Bandama Basin are made up of 13 meteorological stations and 3 hydrological stations (Figure 13.a:). With the support of the AfDB, 6 new automatic stations have been installed (2 in Toumodi, Ouéllé, Tiébissou, Korhogo, Kouto et Dikodougou, in 2019). ICRAF is planning to deploy nearly 112 weather stations in Côte d'Ivoire under the management of SODEXAM, mostly in the cocoa belt of the country – the center and southern part of the Côte d'Ivoire.
52. The density of weather stations in Côte d'Ivoire as shown on Figure 13.b varies a lot from North to South. While recent investments in deploying new weather stations focused in the cocoa production area (South, South West). An upgrading of this infrastructure is urgently needed in the center and northern part of the Bandama basin. Following the ICRAF model (Figure 13a), automatic weather stations (providing real-time weather data via mobile network) would be deployed which will help the country collect real-time, more accurate and valuable climate data in support of national early warning systems (CIEWS).

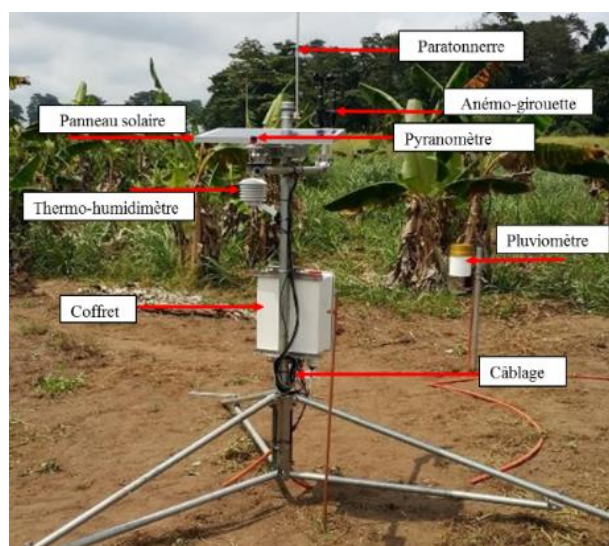


Figure 13 configuration of a model weather station

53. With improved CIEWS, communities particularly farmers, cooperatives, extension services will have timely climate information which will enable them to better plan adaptation measures in relation to climate risks. Such improved adaptive responses against climate shocks will support the provision of impact-based forecasting (i.e. enhancing climate equipment available in the countries and training of climate specialists and meteorologists in countries on impact-based forecasting methodologies for agriculture and insurance industry, and maintenance of equipment and infrastructure).

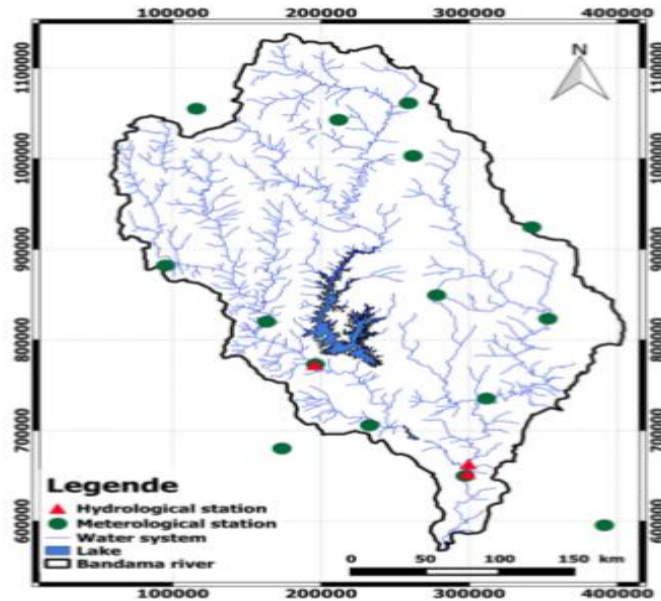


Figure 13.a: Network of hydro met stations in Bandama basin

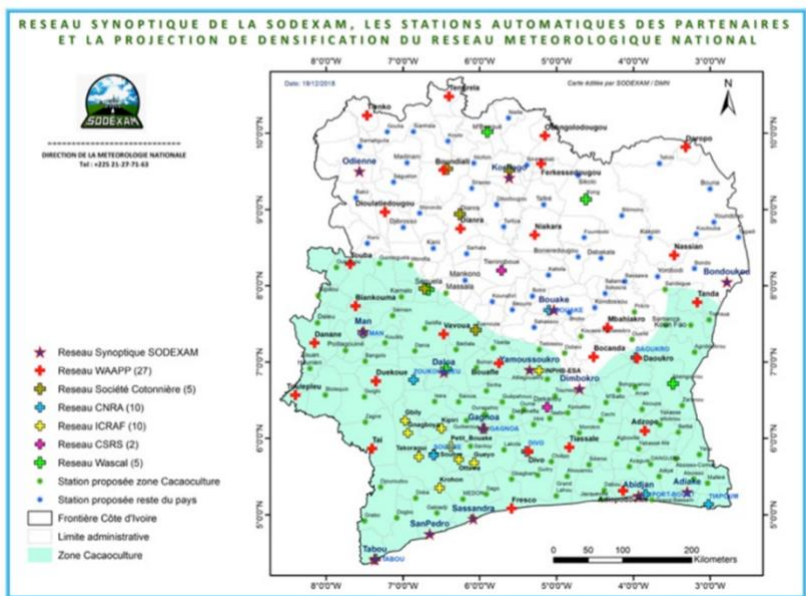


Figure 13.b Geographical distribution of weather stations in Côte d'Ivoire (2020), existing and planned.

As of January 2021, 112 weather stations are operational managed by SODEXAM in close collaboration with institutions like ICRAF, CNRA and CSRS.

1.4.4. Changes in Temperature in the Bandama basin

54. Climate models predict that temperatures in the Bandama basin will increase in the future. The findings are in accordance with the latest Intergovernmental Panel on Climate Change (IPCC) report. The recent assessment shows that temperature will be higher in the RCP 8.5 than that in the RCP 4.5. The study identifies tropical West Africa as a hotspot of climate change for both RCP 4.5 and RCP 8.5 pathways, and unprecedented climate change impacts are projected to occur earlier (late 2030s to early 2040s) in these regions. It shows that in the RCP 8.5 scenario, the Bandama basin will experience a temperature rise of 1.5°C with the minimum temperature rise of about 1.2°C and a maximum of about 1.7°C by 2025. The monthly temperatures may vary from 2.2°C to 3°C by 2050. Under RCP 4.5, changes in monthly temperatures may vary from 0.9°C in July to 2°C in January with an average annual of 2.5°C by 2025. The temperature increases will be greater in the north (Ferkessedougou station) than in the south (Abidjan station) by the 2050s and 2075 (Figure 14:). Several models (RCP4.5; RCP8.5) on climate change in West Africa show a warming range of 3° and 6°C above the late 20th Century baseline. In the Bandama watershed, the magnitude of temperature is higher for the higher emission scenarios of RCP 8.5 than for the medium–low emission scenarios of RCP 4.5.

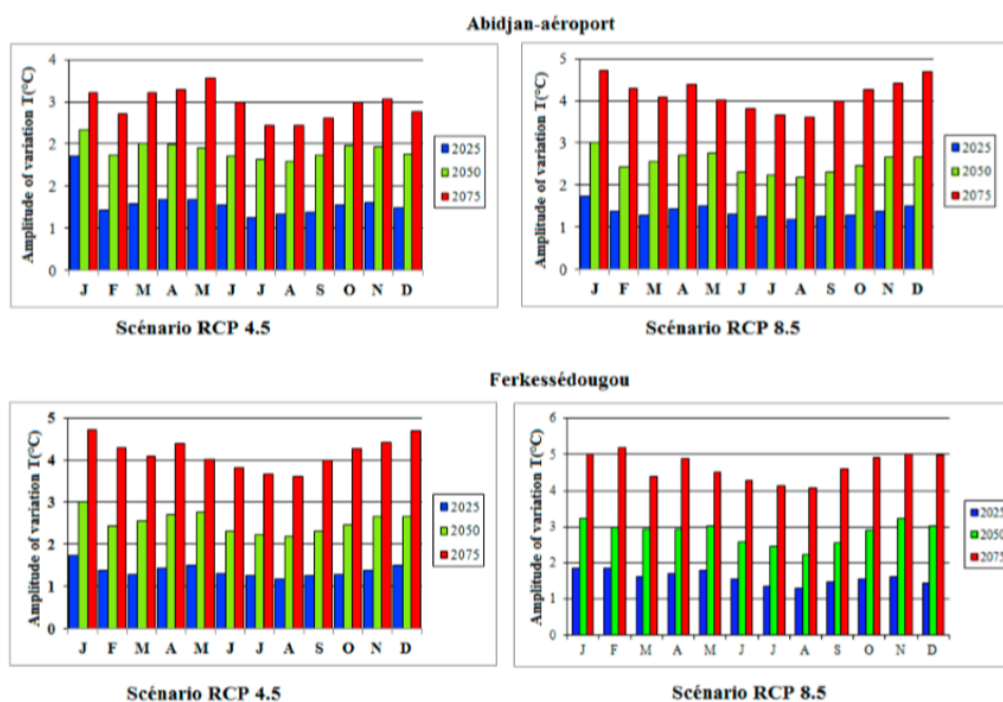


Figure 14: Amplitude of variations in monthly temperatures at different horizons according to the HadGEM2-ES model in the Bandama basin (Source: TNC, 2017).

1.4.5. Changes in Rainfall in the Bandama Basin

55. The monthly rainfall per cent changes based on ground-based observations and projected simulation from the HadGEM2-ES model are presented in the Figure 15²¹. According to the analysis, the rates of increase or decrease in rainfall are relatively more in RCP 8.5 than RCP 4.5 over the basin. Under RCP 8.5 and RCP 4.5, the rainfall may decrease from December to April. This period corresponds to the long dry season in the basin. It is projected to decrease by 3% to 42% at all horizons under RCP 4.5 and by 5% to 47% under RCP 8.5. During the wet months (June–July and September–November) in all future periods, the rainfall may increase with respect to the reference period (1986–2005). The works of show that the dry-season decrease ranges from 4% to 25% and the wet-season increase ranges from 5% to 23%. However, the increase in the wet months' rainfall may be higher in the far future (2041–2060 or 2066–2085) than in the near future (2006–2035). In West Africa, the rainfall season is predicted to be wetter and delayed by the end of the 21st Century. Otherwise, the work in West Africa showed that although the GCMs manage to reproduce these seasonal dynamics (except for HadCM3), they have real difficulty in accurately simulating the volume of rainfall.

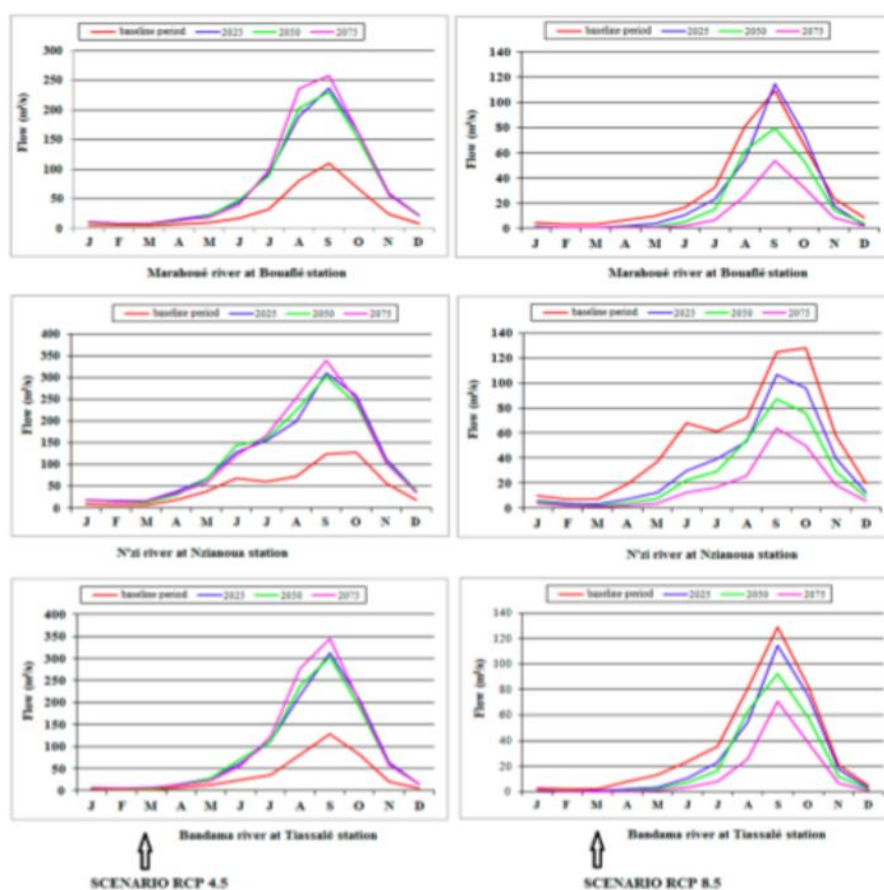


Figure 15: Percentage change in the monthly rainfall for the period 1978–2004 versus 1951–1977 in the Climate Research Unit (CRU) and University of Delaware (UD) observations (top left panels) and in each selected Coupled Model Intercomparison Project Phase 5 (CMIP5) model simulation in the Bandama basin (Source: Soro et. al., 2017)

1.4.6. Impacts of Climate Change on Surface Water

²¹ Soro, G., Yao, A., Kouame, Y. and Goula Bi, T., 2017. Climate Change and Its Impacts on Water Resources in the Bandama Basin, Côte D'ivoire. Hydrology, Hydrology 2017, 4, 18; doi:10.3390/hydrology4010018. March 2017.

56. Comparison of the mean monthly hydrographs for the three-time horizons with that of the baseline period shows that the annual hydrological pattern for the Bandama, Nzi, and the Marahoué catchments remains unchanged. However, the changes caused by climate change affects runoff volume in the watershed and the trends in river discharge are different for each scenario. Under RCP 4.5, mean monthly runoff increases for all horizons. For the Marahoué and Bandama rivers, the changes are important from July to October. For the N’zi river, mean monthly runoff increases gradually from March to November. Under RCP8.5, runoff is projected to slightly decrease up to the horizon 2025, then to decrease at the horizons 2050 and 2075. Runoff is projected to vary mainly in tributary rivers. The works in the Comoé basin of with the ReGcm model and A1 scenario, revealed a decrease in runoff of 18.8% to 34% in 2031–2040 and 40% to 73% in the 2091–2100 horizon.

1.4.7. Impacts of Climate Change on Groundwater

57. Under RCP 8.5 and RCP 4.5, the climate change is likely to affect groundwater due to changes in precipitation and temperature. The scenarios under RCP 8.5 show that a trend towards increasing greenhouse gases may significantly decrease in groundwater recharge. The groundwater recharge may decrease from 136.6 mm to 73.8 mm by 2025. By 2075 groundwater may decrease from 60.2% to 55.4% compared to the baseline period. In the far future (2066–2095), the groundwater recharge 13% in the 2031–2040 horizon and 49.3% to 70% from 2091 to 2100. Contrary to RCP 8.5, RCP 4.5 indicates climate change should induce an increase in groundwater recharge of the coming decades.

1.4.8. Impacts of Climate Change on Crop Productivity

58. According to the results of the analysis of the IFAD’s Climate Adaptation in Rural Development Assessment tool (CARD) (Figure 16:), it is expected that the main crops (bean, cassava, cotton, maize, millet, sorghum, soy, sunflower) will experience substantial yield decreases if adequate actions are not taken to address climate change in the coming years.

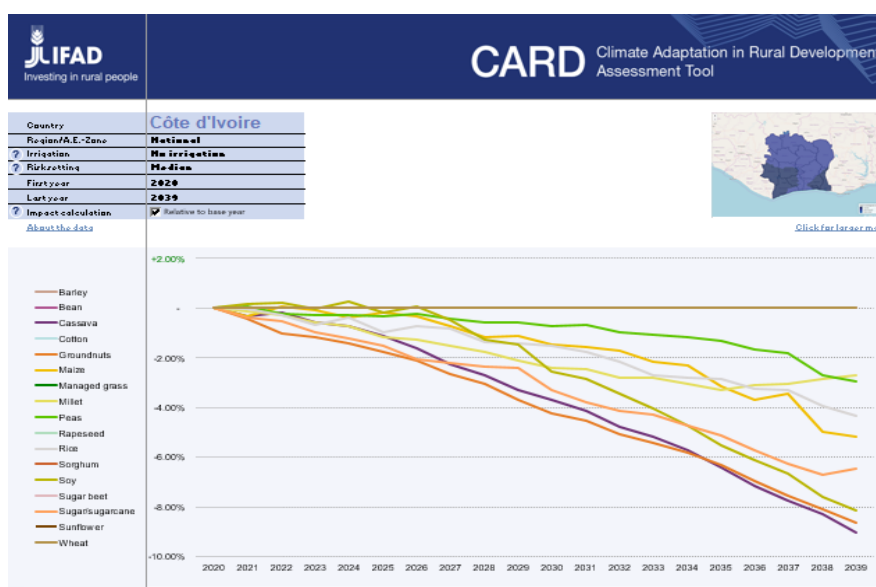


Figure 16: Crop yield under various climatic scenarios- Côte d'Ivoire, IFAD CARD, 2020

59. In Côte d'Ivoire, limited evidence is available for rice productivity. However, in Western Africa in general, irrigated rice yield could decrease between 21 and 45% in the 2050s in the high warming scenario (RCP8.5) compared to the 2000s; for rain-fed rice, with already lower yields than irrigated rice, the decrease could range from 22 to 18 % – both in the absence of adaptation. With the implementation of adaptation options, such as rice varieties able to withstand heat, the region could see an increase in productivity of both irrigated and rain-fed rice from 4% (rain-fed, upland rice) to 7% (irrigated) (Oort & Zwart, 2017).
60. Despite its importance in the food system in Côte d'Ivoire and African countries, climate impact studies on cassava production are very limited. In Sub-Saharan Africa, it is expected that cassava yield could decrease from 5 to 15 % by the 2050s compared to yields in the 1961-2000 period in a high-warming scenario (SRES A1B) (Schlenker & Lobell, 2010).
61. In the absence of adequate climate change adaptation options, both Côte d'Ivoire's staples could be severely affected by future climate change, limiting the population's self-sufficiency, which would therefore need to rely on other crops and exported commodities. Furthermore, cocoa production, the main source of income in rural areas, could also be reduced as a consequence of decrease climatic suitability. Decreasing food supply and possibly reduced income from cocoa production could limit the ability of rural and urban households to attain food and nutrition security.
62. Food security is composed of four distinct components: availability, access, utilization and stability. While severe food insecurity disappeared, the food insecurity rate has declined from 12.8% in 2015 to 10.8% in 2018. Nonetheless, malnutrition and food insecurity remain a challenge with significant regional disparities. Rural communities, notably in western and northern Côte d'Ivoire, are disproportionately more affected and vulnerable.
63. The country's Global Hunger Index of 25.9 in 2018 is still classified as 'serious' and suffers from the triple burden of malnutrition, represented by high micronutrient deficiencies, undernutrition and over-nutrition which is gaining ground, affecting more and more the adult women population. Food insecurity affects more women-headed households and agricultural households, whose productivity and production are hampered by recurrent climate shocks; high post-harvest losses (as high as 40%); accelerated land and environmental degradation; poor agricultural practices; and limited access to quality inputs, land, equipment, technologies, credit and markets. The limited support for food crop production compared with the cash crop sector also continues to have a negative impact on the productivity of smallholder farmers who cultivate 84% of the arable land²².
64. Agricultural productivity is therefore expected to decrease because of increased temperature and more frequent precipitation extremes. The projected increase in dry spells could also lead to reduced availability of water for irrigation during the dry months of the year. Access could also be limited as smallholders and their incomes from cocoa production decrease as a consequence of the decreased cocoa suitability. Access could also be threatened by the projected higher frequency of heavy precipitation events, which could further disrupt road connection. Finally, as a consequence of changing patterns and more frequent extreme events, the overall stability of production and external supply, as well as incomes from agricultural activities could be reduced by future climate change.

1.4.9. Barriers and Constraints

65. The project seeks to increase the adaptive capacity and build the resilience of small scale farmers to climate change in the Bandama watershed of Côte d'Ivoire. It addresses the multiple and combined impacts of climate change especially the anticipated modification of rainfall patterns, decreased water availability and temperature increases. The project is expected to provide cost-effective and innovative solutions to address the increased demand from farmers to shift toward more resilient and productive agrifood systems.

²² <https://www.wfp.org/countries/cote-divoire>

66. The project intends to address **six key issues** identified which are already impacting the productivity of the 3 selected crops (cocoa, rice, cassava):

- 1) The decreasing climatic suitability for crop production, which could lead to reduced incomes and in some cases the reduced ability of smallholder farmers to access food on the local market.
- 2) The increased frequency of heat waves as well as the extension of dry spells leading to a yield reduction of subsistence crops like rice.
- 3) The increased frequency of extreme precipitation events leading to an increased disruption of market services and infrastructures such as roads and water services.
- 4) The increased poverty, particularly for transient poor and therefore their increased vulnerability to future climate change impacts in smallholder farmers' households.
- 5) The limited access for women and youth (40 per cent per cent of agricultural business in Côte d'Ivoire) to agriculture.
- 6) The degradation of natural resources related to unsustainable agricultural practices (slash and burn, firewood collection, logging) and unsustainable fishery along the river'

67. The project intends to address the underlying constraints that further exacerbate the projected climate change impacts and that represent major barriers to adaptation and resilience in the agriculture sector in Bandama basin. Some of the key barriers are summarized below.

Key barriers	Description
Inadequate information system and data to inform cocoa, rice and cassava value chains planning and programming	<p>Inadequate climate information services and early warning systems impacts the capacity of cocoa, rice and cassava producers in taking adaptive responses to climate change. Such knowledge is required to better understand the various forms of climate risks in agriculture. Accurate, reliable and timely climate information coupled with robust early warning systems (CIEWS) are crucial for planning adaptive measures to reduce losses and damages resulting from climate-related extreme weather events and from other risks. Access to appropriate climatic projections will contribute to increasing the resilience of vulnerable populations and enhancing the capacity of local rural communities, cooperatives, farmer organizations, extension agents and decision makers to adopt adaptive strategies.</p> <p>The hydro-meteorological infrastructure capacity in Côte d'Ivoire is very poor, with observation network density (number of stations per 10,000 km sq.) as low as 1.7 in the Côte d'Ivoire compared to 6.2 in Malawi and 45.2 in Rwanda. Currently, the network of meteorological and hydrological stations around the Bandama Basin are made up of 13 meteorological stations and 3 hydrological stations (Figure 13.a:). With the support of the AfDB, 6 new automatic stations have been installed (2 in Toumodi, Ouélé, Tiébissou, Korhogo, Kouto et Dikodougou, in 2019). This prevents key actors, such as decision makers and farmers, from selecting the right adaptation measures in the targeted sectors (cocoa, rice, cassava). Combined with CIEWS, access to information on innovative agricultural practices through a comprehensive extension service compendium will be developed to provide a living knowledge base for cooperatives and smallholder farmers to adopt the most appropriate technologies and innovation on the field of Climate Smart Agriculture. This system will directly build on FAO's knowledge system – TECA²³.</p>
Weak and insufficient farmer's and local/ national authorities	Rural Ivorian communities along cocoa, rice and cassava value chains are poorly equipped and coordinated to cope with the effects of climate change. They are expected to be significantly challenged, and potentially overwhelmed by the magnitude and the rapid onset of future climate change impacts.

²³ TECA - Technologies and Practices for Small Agricultural Producers (<http://www.fao.org/teca/>)

capacities to manage climate risks	<p>This requires preparedness, readiness and specific skills to rapidly respond to the variety of climate risks. Currently, farmers organized around cooperatives and farmers organizations, extension agents and services, local decision makers lack the capacities to identify climate risks and adopt the right adaptation measures.</p> <p>The objective of the proposed project aims at strengthening such capacities to respond effectively and coordinate actions from national authorities down to smallholder farmers with the provision of comprehensive climate weather information and technology options to support the adoption of appropriate adaptation measures in cocoa, rice, cassava sectors.</p>
Unsustainable and inadequate agricultural practices	<p>Côte d'Ivoire suffers from unsustainable or inappropriate agricultural practices (e.g. traditional slash and burn land preparation, land preparation for rice and cassava cultivation, inefficient use of water, erosion, and diseases of cocoa trees due to increased temperatures). In addition, absence of or inadequate infrastructure to withstand to climate change impacts are also key constraints. As a result of growing energy needs for fuelwood (and charcoal), deforestation and land clearing in the cocoa and coffee plantations is also a major problem. As a result, the country continues to loose top soil from hectares of lands due to deforestation and old cocoa trees and coffee plantations affected by diseases such as cacao swollen shoot disease.</p> <p>Low adoption of the appropriate adaptation / mitigation practices / technologies is considered as the main challenge in the transition toward resilient and productive agrifood systems. An integrated climate resilient farming systems business model is required to address low agricultural productivity in particular for the cocoa, rice and cassava value chains. There are proven integrated climate resilient farming business models and adaptation technologies and practices in the region that could be used to shift from business as usual toward higher resilience and production models.</p> <p>The second objective of the project aims at increasing the adoption rate of climate resilient practices in cocoa and rice farms with the aim to design model integrated climate resilient farms. In parallel, the project will focus on diversification of farmers' income along the water basin with a focus on fish farming for youth and women. To achieve this agricultural transformation, a knowledge base platform (TECA) coupled with CIEWS will provide a sound information source for optimal decision-making by cooperatives and farmer organizations.</p>
Lack of enabling environment for institutional effectiveness and coordination mechanism	<p>There is often limited coordination, information and data sharing between different government and non-governmental entities. For example, coordinated actions between relevant Ministries is often lacking, leading to inefficient measures on the ground such as between agriculture and environmental actions (e.g. pressure of cocoa producers on protected forest areas). Increasing institutional effectiveness and coordination mechanisms is required to support planning and implementation of adaptation strategies in light of climate change.</p> <p>Building a sound enabling environment for smallholder farmers is of utmost priority. Shared access to information, analysis and planning is required to support coordinated actions involving cooperatives and extension services.</p> <p>Policies to remove barriers to uptake and investment in CIEWS and knowledge platforms are not in place within national and local governments. Uncoordinated interventions limit the effectiveness of existing adaptation measures in the selected value chains. The third objective is to strengthen the institutional capacities of these agencies to effectively carry out their respective mandates in coordination, monitoring with other sector ministries particularly the ministry of agriculture, environment, forest and R&D institutions such as FIRCA, ANADER, ADERIZ etc.</p>

68. These barriers are preventing the country from achieving optimal yield in the cassava, cocoa and rice productivity (cash and staple crops), to generate sufficient surpluses to respond to food security and nutrition while improving household incomes. As a post conflict country, Côte d'Ivoire needs to upgrade its infrastructure to support the agriculture sector through earth dams, adapted

storages and warehouses. It also need to improve capacity of smallholder farmers to shift from unsustainable cultivation methods (e.g slash and burn) to more sustainable, climate smart agriculture approaches. Today, the agriculture sector tends to be extensive rather than intensive. While such a strategy provides short-term gains (e.g. new cocoa plantations in protected forest areas), it progressively depletes soil fertility and degrades the natural capital and environment. The agriculture sector is also characterized by low yields preventing farmers to generate surpluses and sufficient income to support the investment required to adopt innovations, such as the acquisition of drought resilient seeds, improved fertilizers or mechanization.

69. Accelerated erosion and siltation of drainage, irrigation systems could lead to a very dire situation in rice producing areas where flooding is an issue. Over 90 per cent of the rural road network remains unpaved, mostly graveled, and keeping these roads in a condition that provides all-weather access is becoming increasingly difficult as gravel resources become depleted whilst traffic and heavy rains increase. This prevents farmers' access to markets and reduces their incomes. As climate risks and their management is new, it was proven by previous IFAD projects that well targeted support to smallholder farmers leads to increased yields in the cassava, rice and cocoa sector (see below – lessons learned from IFAD). For instance, smallholder farmers supported by an IFAD climate-focused project in Côte d'Ivoire have doubled and even tripled cropping of rice using NERICA rice over the paddy varieties because of efficient access to sustainable source of water (e.g. earth dams). However, more effort needs to be made to help farmers to have access to timely and relevant agrometeorological information and appropriate agricultural practices to better decide on cultivation practices and cropping calendars. Early warning systems are not well in place yet.

1.5. Lessons learnt

70. **Lessons learnt from IFAD:** The ongoing PADFA project, PROPACOM OUEST and other previous IFAD projects offer relevant lessons that have been incorporated into the design of this AF project. They can be summarized as follows:
- The need for projects to reflect IFAD's niche and comparative advantage on climate resilience, involve broad-based consultations with Government officials, potential beneficiaries and other key stakeholders, and responds to country top priority particularly on building the resilience of the most vulnerable communities and key productive sectors such as rice, cashew, cocoa and cassava to climate change
 - A focus on the most vulnerable groups (women, youth) to climate change engaged heavily on rice, cassava and cocoa value chains. This will contribute to closing youth and gender gaps in agriculture.
 - Scaling up and expanding cocoa, rice and cassava climate resilient value chains using techniques like System of Rice Intensification (SRI), Farmers' Field Schools (FFS) approach and business models; and improve infrastructure for irrigation schemes and sustainable land and forest management. Additionally, upgrading and scaling up the meteorological networks to better support programming and planning in agriculture is now key. Recent projects in the region have experienced the replacement of cocoa, use of new climate resilient rice and cassava varieties tested respectively by the AFRICA Rice demo sites in the northern part and the Swiss Centre of Côte d'Ivoire and Interprofessional Fund for Agricultural Research and Advice (FIRCA). Despite all these efforts, many farmers in this area of the country have been left untouched by development assistance due to limited geographic coverage by previous and ongoing projects which have been located heavily in the south, west and northeast. Moreover technical assistance and better coordination are needed in this small-scale agricultural sector as opposed to the industrial production in the southern part of the country. Climate information systems with reliable and robust information are needed to guide adaptation to climate change.
71. **Lessons learnt from UNDP:** include the formulation of policy and strategy documents adopted by the Government, such as the Nationally Determined Contributions (NDCs) and the national REDD+ strategy, which reflect Côte d'Ivoire's commitment to contributing to the global effort to

reduce GHGs and tackle climate change. The UNDP GEF Small Grants Programme project on small-scale cocoa farmers demonstrated the importance of promoting sustainable production and consumption practices to reduce wood energy consumption and deforestation. The ongoing UNDP Support Programme for the Development of Inclusive Value Chains and the Promotion of Local Initiatives (PACIPIL), which targets mainly smallholders in the rice, maize, cassava and cashew nut value chains, shows that poverty reduction and sustainable production techniques linked to environmental conservation can address poverty and contribute to the reintegration of displaced persons, 1,301 small producers (53% of women). Under this AF, additional support is required to scale up small and localized interventions and deepen the synergy with others initiatives, particularly in these parts of the country where levels of poverty and inequality are acute. Experience from UNDP projects calls for further analysis and development responsiveness to local production and consumption patterns, in terms of income-generating activities, supply and use of socio-economic services, will be required to inform strategies for protecting the forest heritage and preserving biodiversity.

72. **Lessons learnt from FAO:** are drawn from FAO policy and field work on climate smart agriculture (CSA) systems in Côte d'Ivoire. Through FAO's interventions, the adoption of new cassava varieties has had a significant impact on the well-being of smallholder farmers. However, low adoption rates are observed in the country mostly due to the lack of national coordinated actions including from farmer cooperatives. While research efforts for varietal selection, sensitization of producers and promotion of new cassava varieties is needed, the upscaling of such success at national level requires more coordinated efforts between institutions coupled with a sound climatic and knowledge resources that this project will address. Cassava cultivation could thus contribute substantially to poverty reduction of user households through the wider promotion and adoption of climate smart agriculture practices. In the rice sector, results and key lessons learnt from FAO work in Côte d'Ivoire show strong potential for low carbon rice production coupled with the adoption of improved varieties (e.g. NERICA). Several CSA practices were applied for rainfed rice and irrigated rice farmers and show the potential to improve management in terms of climate mitigation at production level and rice productivity. The adoption of CSA practices contributed to a reduction of the white rice carbon footprint at production level. For instance, in rainfed rice, since the loss at farm gate was quite significant (50 percent of the production is lost between sowing and transport to the village), the carbon footprint decreased from 0.89 to -0.70 tCO₂-e per ton of white rice from the BAU to the project situation, i.e. a decrease of 1.58 tCO₂-e per ton of rice at production level. In the irrigated rice case. There were no changes in the GHG-based management practices, therefore emissions remain the same even between the business-as-usual situation and project implementation.
73. Other past and ongoing FAO projects in the targeted regions reveal good results on bio-charcoal, Briquetting lines installed in three rice mills with a capacity to produce 165 tons per year which represents only 4 percent of the available rice husk feedstock in the area. This is the equivalent of 212 tons of charcoal per year or 414 tons of woody biomass assuming a traditional conversion rate from wood to charcoal of 15 percent (BEFS - FAO, 2014). This above ground biomass represents the equivalent of 5.4 hectares of naturally regenerated forest (IPCC, 2006), or about 55 tCO₂ sequestered per year in the case of reforestation of tropical moist deciduous forest, according the following breakdown: 7.35 tCO₂ per year sequestered in the soil and 47.5 tCO₂ per year sequestered in the biomass (EX-ACT computations). Recent studies conducted by FAO titled *Prospective analysis of the cocoa sector Côte d'Ivoire 2020-2028: towards a common cocoa market policy Ghana- Côte d'Ivoire* lists the positive and negative externalities of the value chain and identifies, the best processing options in line with (i) market and price policy; (ii) minimal environmental impact of deforestation; (iii) climate mitigation and impact on resilience; (iv) impact on pro-poor value addition; and (v) impact on social employment.

B. PROJECT / PROGRAMME OBJECTIVES

74. Climate change and climate variability is already affecting rainfall and temperature patterns in Côte d'Ivoire, eventually leading to decreasing water availability. As a result, adaptation measures must address key challenges posed by climate change using strengthened hydro meteorological services providing robust climate information on hazards, risks, impacts, and early action options (climate risk preparedness) thus facilitating decision making on the choice of the best adaptation and mitigation alternative practices/technologies. Coupled with a robust knowledge system on the most appropriate adaptation measures (e.g. repositories of good CSA practices), it is expected that farmers will be empowered to take decisions on future investments to improve the resilience and productivity of their production systems.
75. The overall objective of the project is to address key climate vulnerabilities in the agriculture and water resources management systems with a focus on rice, cassava and cocoa value chains in Bandama Basin. This region has been identified as a top priority region in the NAPA, agricultural sector plan. The resilience of the cassava, rice and cocoa production can only be achieved by accelerating the transition towards a set of appropriate agricultural practices coupled with an income diversification strategy. To achieve this, integrated farming systems designed to increase yields for cash crop (cocoa), staple crops (cassava and rice), and minimize environmental degradation are required. Such approaches will be coupled with effective water management and maintenance of the ecological functions and surrounding the smallholder production systems in Côte d'Ivoire .

1.1. Project Goal

76. The goal of this project is to increase the resilience and adaptive capacity of vulnerable rural communities and their ecosystems to climate change for improved food security and better livelihood in the Bandama Basin. The project intends to reduce the projected direct effects of the negative impacts of climate change on 15,600 smallholder farmers and indirectly 93,600 beneficiaries of which 45% will be women.
77. **IF** robust climate information and early warning services coupled with a sound CSA knowledge system inform agricultural production and planning strategies and **IF**, adaptation practices and the selection of best technologies, capacity building for smallholder farmers and government partners is promoted along the cocoa, cassava and rice value chains **THEN** the resilience of smallholder farmers to climate change impacts will improve **BECAUSE** there will be strengthened hydrometeorological services providing robust climate information on hazards, risks, impacts, and early action options (climate risk preparedness) thus improving investment decision making and choice of the best adaptation and mitigation alternative practices/technologies for pilot climate cocoa, rice and cassava projects and post-harvest facilities in the vulnerable Bandama Basin.

1.2. Project Specific Objectives

78. There are four specific objectives of the project, each of which consisting of a set of interrelated activities aimed at reducing the effects of climate change on agricultural activities. These specific objectives are:
 - i. **Improving productivity.**

The low productivity and income of Côte d'Ivoire smallholder farmers in the target region are mostly due to inappropriate agricultural practices and the low adoption rate of CSA innovations. Poor access to technologies and knowledge are recurrent factors that hamper the adoption of innovations, such as improved drought tolerant varieties, appropriate production inputs, post-harvest technologies that are essential to increase the resilience and productivity of stressed

production systems. In addition, the continuous destruction of new fallows and forestland for agricultural production is a precursor of climate change and reduction of essential climatic services (e.g. access to water etc.). Therefore, the first specific objective of the proposed project is to enhance the productive and adaptive capacity, technical skills and knowledge base with a focus on 5,000 smallholder cocoa, 5,600 cassava and 4,000 rice farmers in climate smart agriculture production models and 1,000 beneficiaries from other enterprises (processing and marketing activities) and cooperatives.

ii. **Strengthening institutional capacity.**

The second specific objective of the project is to address the enabling environment (i.e. organizational setting and governance of actors) along the selected value chains to ensure that smallholder farmers through their cooperatives are empowered to take the appropriate decisions and strategies to address climate change impacts. This will require greater inter-ministerial coordination, effective regional interventions and supportive policies/actions coupled with empowered farmer organizations and extension services. This will be achieved in particular through coordination of relevant actors, such as with SODEXAM, FIRCA, FAO, UNDP and Africa Rice.

iii. **Provide alternative livelihoods for youth and women.**

A third specific objective is to provide alternative livelihoods, such as fish farming, for youth and women along the Bandama basin in addition to agroforestry value chains. Such an approach is intended to accelerate the diversification of production systems while at the same time mobilize work forces that have been so far undervalued in the agriculture sector. Such diversification will further strengthen the resilience of agricultural households, diversify their income sources and potentially make agriculture more attractive as a business opportunity.

iv. **Supporting the enabling environment**

The fourth specific objective of the project aims at strengthening the broader enabling environment involving policy makers, decision makers. This objective will in particular strengthen the collaboration between relevant ministries to ensure that their actions are well coordinated and articulate. Regional agencies involved in the decision-making chain of smallholder farmers and cooperatives will also be supported to better articulate their supportive interventions.

1.3. Project Area and Target Groups

79. Targeted people, in the Bandama basin (Figure 12) are smallholder farmers and communities that are the most vulnerable to climate change but with a potential to rapidly shift to more resilient and productive systems in the selected value chains. The direct beneficiaries of the project are 15,600 smallholder farmers including 5,000 rice producers, 5,600 cassava producers and 4,000 cocoa producers, 1,000 from other enterprises/cooperatives of which at least 45 per cent will be women and 40 per cent young people. The project will benefit indirectly about 93,000 beneficiaries along the targeted cocoa, cassava and rice value chain through improved regulatory systems, increased access in climate resilient planting materials, and better access to market and other downstream effects. To be successful, the project will require farmers to be proactive, resident smallholder farmers in the project locality, already engaged in producing one of the target crops, and a member of a Farmers Business Organisation (FBOs), cooperatives (or willing to join one).
80. Based on the climatic vulnerability in the watershed and a participatory stakeholder consultation, three (3) central regions of the Bandama watershed were selected: Belier, Gbeke and Marahoue. Communities in these regions were considered exposed to a number of climate-related risks, including drought, bush fires, floods, water scarcity, low agricultural productivity delays in the rainy season and COVID -19. (Figure 17 shows population at risk).

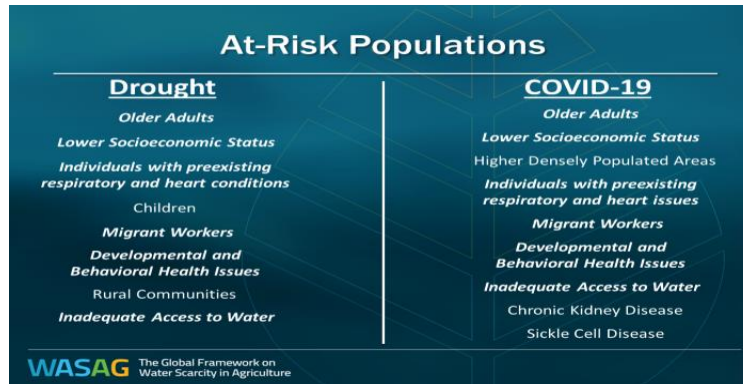


Figure 17: At-Risk Populations

81. These localities were selected after face-to-face consultations with the stakeholders involved (field mission, February 2020), but also during a general consultation, on October 27, 2019, with the focal points of the sectors involved and the main stakeholders. Selection criteria included vulnerabilities affecting the regions, including climatic variabilities, existing agricultural activities for adaptation; and the facilitation of the integration of women into economic activities. It should be emphasized that, in addition to undertaking stakeholder consultation both at national and local level, capacity building in climate vulnerability, climate adaptation and climate finance, was provided during the two missions. Details of the consultative process are provided in section G.
82. During the stakeholder consultation, 3-project regions - Belier, Gbeke and Marahoue (**Error! Reference source not found.**) -constituting a total of 13 sites considered to be vulnerable to natural hazards were selected. Selected communities are extremely exposed to food insecurity, malnutrition and water insecurity, but are also categorized as high potential to shift to more resilient and productive systems.

1.4. Key Barriers

83. As described and summarized under 1.4.9, there are four specific main barriers that the project intends to address in order to increase productivity of cocoa, rice and cassava value chains in the targeted areas. In a nutshell, the number of barriers hindering better agricultural productivity are:
 - 1) Inadequate climate information services and early warning systems, poor knowledge and understanding of appropriate CSA practices targeted at the cocoa, rice and cassava value chains.
 - 2) Weak or insufficient capacities of farmers to cope with climate risks in the cocoa, rice and cassava value chains.
 - 3) Low adoption of the innovations such as in the most appropriate adaptation / mitigation practices / technologies and integrated climate resilient farming systems business model to address low agricultural productivity in the cocoa, rice and cassava value chains
 - 4) Lack of enabling environment for institutional effectiveness and coordination mechanisms. There is often limited coordination, information and data sharing between different government and non-governmental entities contributing to an effective enabling environment.
84. Against this backdrop, the project seeks to reduce vulnerability of rural communities in the Bandama basin to the impacts of climate change.
85. The project will promote policy dialogue on resilience building and policy gaps in rice, cassava and cocoa sectors, with a view to achieving strong policy formulation and implementation in the sectors with the aim to be replicated in the whole country and the West Africa region.

86. The project focuses on three crop value chains: (i) cocoa, (ii) rice (with a focus on NERICA varieties) and paddy rice and iii) cassava. Additionally, the project aims at improving the organization and productivity of the selected value chains, by addressing the resilience of rural infrastructure and its connectivity to markets.
87. Côte d'Ivoire GHG emissions is growing at the rate of 1.77%²⁴. It is equally important to note that Côte d'Ivoire is categorized as a GHG sink if the LULUCF sector is considered. The project will contribute to reducing the emission of GHG through better climate adaptation practices coupled with reforestation and afforestation activities.
88. Reflecting the key development challenges and adaptation needs while being fully aligned with the three components, the project will deliver the stated objective through three components:
- Component 1:** Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.
- Component 2:** Climate-proofed agricultural production and post-harvest combined with livelihood diversification.
- Component 3:** Institutional capacity building, policy engagement and knowledge management.

²⁴ <https://www.climatelinks.org/countries/cote-divoire>

C. PROJECT COMPONENTS AND FINANCING

Table 5: Project Components and Financing

CRDP Components	Expected concrete outputs	Expected outcome	Amount (\$)
Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.	Output 1.1. Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.	1.1.1. Strengthened farmer' capacities to adapt to climate change through climate weather decision tools and customized extension services.	496,500
	Output 1.2. Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks,		512,500
Component 2: Climate-proofed agricultural production and post-harvest combined with livelihood diversification	Output 2.1. Best available technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.	2.1.1. More resilient production systems are adopted by farmers based on proven best climate smart agriculture practices in the rice, cassava and cocoa value chains.	3,196,651.35
	Output 2.2: Income-generating activities focusing on climate resilient fish farming on the Bandama river basin, conservation, processing units, marketing) are promoted as livelihood diversification measures.	2.2.1. Diversification of smallholder farmer's income.	432,000
Component 3: Institutional capacity building, policy engagement and knowledge management	Output 3.1. Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA,) in planning and better managing climate risk is strengthened	3.1.1 The enabling environment for resilient rice and cocoa value chain is improved. Policy and regulatory frameworks strengthened as SODEXAM, FIRCA, ANADER, ADERIZ and the government and local	390,008.1

	Output 3.2: Activities are adequately coordinated, monitored and evaluated.	authorities' capacities are enhanced.	393,864
Project activities Cost			5,421,523
Project execution cost			108,430
Total Project/Programme Cost			5,529,953
Implementing Entity fee , Project Cycle Management Fees (8.5%)			470,046
Amount of Financing Requested			6,000,000

Table 6: Project Cycle management fee charged by the Implementing Entity (8.5 per cent).

Project Cycle Management Fee over 6 years	Percentage	Amount
1. Development and Preparation	20.5 per cent	96,359
2. Overall Coordination and Management	30 per cent	141,014
3. Financial Management and Legal Support	20 per cent	94,009
4. Evaluation and Knowledge Management Support including Reporting	19.5 per cent	91,659
5. Overall Administration and Support Costs,	10 per cent	47,005
Total	100 per cent	470,046

2.2. PROJECTED CALENDAR

Milestones	Expected Dates
Start of Project Implementation	2022
Mid-term Review	2023
Project Closing	2025
Terminal Evaluation	2026

A. PROJECT COMPONENTS

Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

89. The project proposes the implementation of a set of concrete adaptation interventions targeted to 3 profitable agricultural production systems (rice, cassava and cocoa) in the Bandama basin. The project will be articulated around a set of enabling actions designed to strengthen national capacities focused on interlinked adaptation measures which will lead to building the resilience of the cocoa, cassava and rice value chains in the Bandama Basin in Côte d'Ivoire. The project will support the provision of data, information and knowledge to support decisions taken by farmers in choosing appropriate adaptation measures combined with direct support through extension services to ensure rapid adoption and scaling-up to the largest number of recipients. The project will also address the enabling environment by looking into the optimum institutional setting and collaboration from Ministries down to farmer organizations. The schematic diagram of the three components is provided in Figure 18.

90. The project is structured around three mutually reinforcing components (Figure 18):

- **Component 1:** Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.
- **Component 2:** Climate-proofed agricultural production and post-harvest combined with livelihood diversification
- **Component 3:** Institutional capacity building, policy engagement and knowledge management.

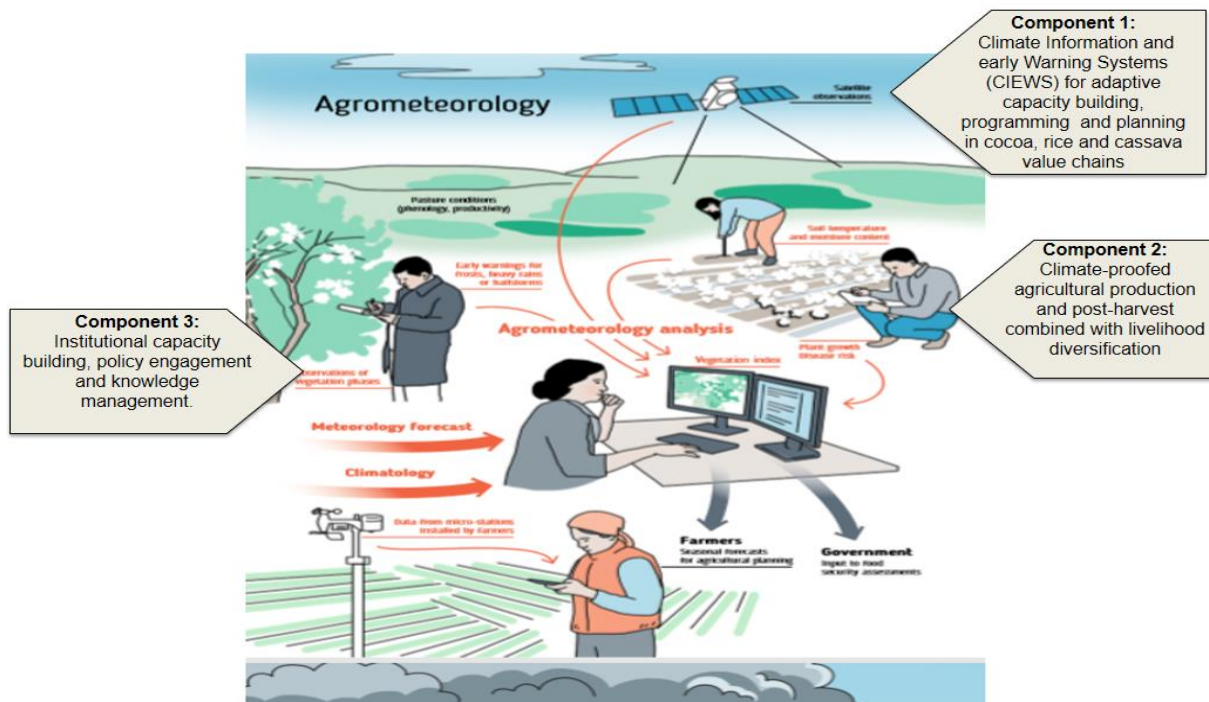


Figure 18: Schematic diagram of the three components and their interlinkages

Each component is described in more details below.

1.1. Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.

91. This component focuses on training, capacity building, expanding and upgrading existing early weather warning systems and hydrometeorological observation networks to enhance data collection, interpretation and understanding. Currently, existing network of meteorological and hydrological stations around the Bandama Basin are made up of more than 15 meteorological stations. With the support of the AfDB, 6 new automatic stations have been installed (2 in Toumodi, Ouéllé, Tiébissou, Korhogo, Kouto et Dikodougou, in 2019). These infrastructures need an upgrading and upscaling with new automatic weather stations which will help the region and country develop useful climate information and early warning systems (CIEWS) to guide the cocoa, rice and cassava value chains in one of the most vulnerable regions to climate change. Through this component, quantitative and qualitative climate information will be generated to inform decision making on the right set of adaptation measures at farm level. It will support stronger national policy efforts, as well as the institutional arrangements for private sector engagement in the context of data creation and sharing for CIEWS, increasing the use of robust climate science/services in NAPs and country programming(the national development plans and sector plans). Additionally, this climate information coupled with the CSA knowledge system will help guide farmers on the selection and adoption of the most appropriate adaptation practices/technologies (component 2) to respond to climate variability (cropping calendar, timing for marketing and processing; choice of the most suitable agricultural practices and technologies). This component also aims at strengthening the capacity of rural communities, cooperatives, farmer organizations, extension services to understand climate risks and better manage climate shocks. Under this component, the meteorological services will provide impact-based forecasting in the Bandama river basin (i.e. enhancing climate equipment available in the countries/ selected area and providing trainings to climate and meteorologists experts in countries on impact-based forecasting methodologies for agriculture and maintenance of equipment's and infrastructures).
92. It comprises: *Output 1.1:* Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers and *Output 1.2.* Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks. This also includes the promotion of gender sensitive interventions such as through sensitization and trainings to address the opportunity to incorporate women and youth as integral partners in the envisioned climate resilient actions.
93. **Output 1.1: Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.**
94. A mapping of locations of the limited hydraulic infrastructure will be carried in the project area with detailed designs and associated ESS studies; The project will support the installation of 18 new automatic weather stations;; The upgrading/rehabilitation of the existing 10 hydrological stations in the project area will also be addressed (incl. their connectivity to the wider network of new weather stations); Particular attention will be given to training 100 meteorological/experts in data collection, analysis and climate forecasting; The construction of rainwater harvesting infrastructure in the project area will also be required in support of a more stable access to water resources;
95. The inter-connected set of weather stations will form the basis of the CIEWS and support the translation of collected real-time data into a comprehensive early warning information that will provide comprehensive alerts, guidance and warnings for government agencies, emergency services, aid agencies, agricultural NGOs, extension services, farmer organizations, as well as insurance companies and financial institutions; This network will also be integrated within the

broader regional network of weather stations. To ensure its maintenance and future sustainability, SODEXAM will procure and manage the climate information infrastructures, technologies and equipment, compliant with the Global Basic Observing Network (GBON).

1. Activities

- **1.1.1:** Installation of 18 automatic weather stations and 150 rain gauges; upgrade/rehabilitate existing 10 hydrological stations across the location already pre-identified by SODEXAM. Local SODEXAM antennas in Bouake and Korhogo in coordination with the PMU will be in charge of procurement, acquisition, deployment, installation, testing, maintenance and reparation of agrometeorological infrastructures and associated electronic equipment of the station stations. In addition, the technical team of these local antennas will use visual or appropriate testing tools to diagnose malfunctioning equipment, assist in maintaining accountability of all parts of the system and in the requisitioning of supplies and spare parts, process and pack systems components for storage and/or deployment. Also, the team will maintain records of maintenance and compile data for report with a well-functioning national agrometeorological network.
- **1.1.2:** Trainings of 10 national meteorological experts on impact-based forecasting methodologies, data collection and interpretation
- **1.1.3.** Dissemination of local climate summary information and trends to local cocoa, cassava, rice producers in support of their CSA adaptation actions. The project will leverage climate information coupled with cropping calendars knowledge from existing IFAD, FAO, UNDP projects.
- **1.1.4.** Develop hazard monitoring and early warning services including weather and hydrological monitoring equipment to improve national forecast capabilities and the integration of CIEWS as an integral component of agricultural advisories
- **1.1.5.** Facilitate the collaboration between SODEXAM and Telecom companies to support the real-time dissemination of weather information through digital platforms and SMS to cooperatives and extension services. Collaboration will be explored with existing networks, such as from ANADER and ANOPACI, with the aim to ensure future sustainability.

Table 7: Impact of CIEWS (component 1) on the targeted sectors, smallholder farmers and national institutions.

CIEWS under Component 1:	Expected impact on the targeted sectors (cocoa, rice and cassava value chains) supported under Component 2	Expected benefits on smallholder farmers and climate change adaptation	Expected benefits on national institutions /local authorities and climate change adaptation
<p>Interventions: Upgrading and expanding the climate information systems (CIEWS) through the installation of 18 new automatic weather stations; 150 rain gauges; upgrading and rehabilitation of existing 10 hydrological stations (automatic stage recorders) and its specialized hydrological equipment (acoustic doppler current profiler, bathymetric instruments...)</p> <p>Outputs: Generation of reliable, quantitative and qualitative data, and information well interpreted to inform smallholder farmers on the adaptation options in the cocoa, rice and cassava value chains to address climate impacts.</p> <p>In addition, climate information will help develop comprehensive climate risk profiles to support the agriculture/ forestry, land use in the cocoa, rice and cassava value chain.</p> <p>These climate information's will enable the program to raise awareness, design</p>	<p>Transformational planning and programming in the cocoa, cassava and rice value chains in Côte d'Ivoire through the use of robust climate science and information generated by the CIEWS under component 1:</p> <ul style="list-style-type: none"> To inform the development of NAPs, NDCs, national strategic planning, investment and financial decisions country programming in the agricultural sector and particularly in the rice, cassava and cocoa value chains To support stronger national adaptation and agricultural policy efforts led by sector ministries (Ministry of agriculture, Ministry of Environment, Ministry of Forest, SODEXAM and partners (Africa Rice, Cocoa board, ICO...)) and increase the use of robust climate science/services in NAPs and country programming <p>Catalyzing climate innovation in the cocoa, cassava and rice value chains by establishing data for climate action (data generation, infrastructure, analytics, governance, sharing protocols):</p> <ul style="list-style-type: none"> To underpin the design of adaptation sub projects (component 2) and future projects in the region which address specific climate adaptation challenges identified in each productive sector (cocoa, cassava, rice) To create strategic partnerships with other initiatives and foster new investment mechanisms from both public and private sector in the cocoa, rice cassava value chains Strengthen national and regional hydro meteorological service capacity to support climate investments in critical sectors <p>Expanding and replicating knowledge through the establishment of knowledge brokering on climate investments through</p> <ul style="list-style-type: none"> Institutional collaboration: prioritize monitoring, evaluation and learning to ensure impact evaluation, lessons and best practices inform future programming. Coordination and knowledge sharing with ACMAD, regional institutions (e.g. AGRHYMET, Climate 	<ul style="list-style-type: none"> Empowered and well capacitated smallholder farmers that participate in all decision-making processes, NAPs, NDCs, national strategic planning, investment and financial decisions and country programming in the agricultural sector and particularly in the rice, cassava and cocoa value chain using reliable, quantitative and qualitative data, and information received Use climate information to select and implement concrete integrated solutions (best adaptation options and mitigation measures (forestry , land use, fishery practices to reduce risk and impacts in the cocoa, cassava, rice sectors Define cropping calendars to sow, the right harvesting period and the right moment to sell agricultural products (cocoa, rice, cassava) in the markets Better adapt to climate change and climate variability Local knowledge is generated, managed land shared by smallholder farmers in the cocoa, cassava and rice value chains Small holder farmers have access to global knowledge and networks Learning mechanism is promoted at smallholder farmers level 	<ul style="list-style-type: none"> Sector ministries (Ministry of agriculture, environment, forestry, SODEXAM, FIRCA...) and other partners are more equipped with enhanced capacity to define local and national climate risks profiles, better define strategic planning and programming (NAPs, NDCs, agricultural sector plans) and investment plans, Disaster Risk Reductions strategies ... The development of capacity building program on climate adaptation on cocoa, rice and cassava value chains SODEXAM will be able to collect reliable climate information and share with farmers through existing mobile platforms or on site trainings Mobile operators deepen their partnerships with SODEXAM and other partners in distributing climate information to smallholder farmers to guide their adaptation options and choice Sector ministries will scale up climate innovation in the targeted sectors into national plans and investments SODEXAM strengthen its national hydro meteorological service capacity to support climate investments in critical sectors Local authorities/ sector ministries collect knowledge and share it through regional and global networks ACMAD, regional institutions (e.g. AGRHYMET, Climate Outlook Forum), Global Basic Observing Network (GBON),

<p>capacity building and institutional development programs and planning (NAPA, sector policies , NDCs) as well as foster public and private partnerships</p>	<p>Outlook Forum), Global Basic Observing Network (GBON),</p> <p>Mobilizing investment at scale through :</p> <ul style="list-style-type: none"> • Key partnerships to leverage and scale up investments in climate resilient cocoa, rice and cassava sectors • Nurturing forecast-based financing as part of a response mechanism for climate risk management in cocoa, rice and cassava sectors • Initiative through this project innovative financing models between public and private producers (farmers organizations) for sustaining the Global Basic Observation Network (GBON) 	<p>Based on the climate information and strengthened capacity, smallholder farmers, select optimal mix of adaptation and mitigations options on production, post-harvest and processing on cocoa rice value chains to mobilize investment at farm level both from financial institutions, private sector and partners</p>	<p>Sector ministries will identify priority mitigation and adaptation technology options for a given location, and objectives, define and assess key barriers to technology diffusion; determine appropriate policy mix to catalyze climate capital; select financing options to create an enabling policy environment to implement the selected policy mix to catalyze finance.</p>
---	---	---	--

96. Output 1.2. Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks.

This output will focus on the collection of existing proofed CSA technologies suitable for the Bandama region with the aim to trigger the upscaling of innovative climate resilient approaches. This will be achieved through the compilation of comprehensive technologies already documented in FAO TECA²⁵, coupled with on-site training of selected technologies to smallholder farmers, cooperatives, farmers organizations. Collaboration with national extension services (e.g. FIRCA, ANADER, ADERIZ) will be sought. The selection of relevant technologies will be achieved through active consultation with farmer cooperatives.

Training will also be provided, inter alia, on: timely dissemination of early warning products (including agro-climatic information), their interpretation, developing and interpreting maps and charts on climate, trigger systems for decision making based on climatic trends and thresholds, and potential adoption of proven climate-relevant practices at farm level. Such training of trainers will focus on extension agents and local authorities.

This output will also support the organizational and technical capacities of communities and farmers to integrate climate risk management in their operations; capacity-building programs for government authorities to support decision making and local contingency planning, and for regulatory.

97. Key activities include:

- 1.2.1. Training of 10,000 smallholder farmers on the timely dissemination and interpretation of early warning products (including agro-climatic information),
- 1.2.2. Raising awareness among 15,600 smallholder farmers on the best climate adaptation/mitigation practices/technologies in agriculture,
- 1.2.3. Training of 150 extension agents on climate resilient agriculture, relevant technologies and dissemination methodologies to smallholder farmers.
- 1.2.4. Capacity-building programs for government authorities to support decision making and local contingency planning, regulatory bodies, access to property rights (land tenure) and control over assets with a particular attention to women and youth
- 1.2.5. Support 20 rural communities and strengthen their organizational response and their capacity to effectively address climatic challenges.

²⁵ TECA - Technologies and Practices for Small Agricultural Producers - <http://www.fao.org/teca/en/>

1.2. Component 2: Climate proofed agricultural and post-harvest combined with livelihood diversification

98. This component focuses on rapid upscaling of selected CSA technologies and innovation by targeted household/village-level interventions. For example, integrated climate resilient and sustainable agroforestry practices (e.g. in cocoa) selected by cocoa farmers could be promoted to increase the resilience of the farming systems against climate extremes.
99. Building on Component 1, farmer cooperatives and smallholder farmers will be consulted in the selection of a set of appropriate technologies/innovations that could rapidly transform their production systems into more productive and resilient systems.
100. Particular attention will be given to ensure that appropriate business models are designed to facilitate the adoption processes of such technologies. Cost effectiveness in adopting new technologies would need to be carefully assessed
101. Fostering access to affordable labour saving technologies and practices will relieve the burden on farmers and reduce demand for labour, in agricultural tasks and address the low level of mechanization.
102. Along the selected value chains, key vulnerability issues which call for adaptation practices are the low productivity and high vulnerability of the agricultural sector, mainly cocoa, cassava and rice that are highly dependent on rainwater, which is the sole water source for a large majority of small farms.
103. With regards to post harvesting in the cocoa sector, the lack of adequate equipment for drying and processing to maintain a high-quality product is still a challenge to stabilizing and increasing farmers' income in the face of climate change.
104. Income diversification will also be explored for women and youth through the aquaculture sector. Based on modern technologies in tilapia farming promoted by FAO in the Tonkpi region, and acquired knowledge with women organizations, the project will also explore the opportunity to transfer such success stories in the Bandama region.
105. For each of the 3 value chains a preliminary assessment of technologies was carried and a total of 210 innovations were already identified by FAO in TECA. Some of these are presented in the following table:

Table 8: List of Tested Technologies

Technologies	Country where validated
Promotion of Farmers' Cooperative (FC) development for Community-Based Disaster Risk Management (CBDRM)	China
Planning an extended climate and weather forecasting system for hazard preparedness in agriculture	Bangladesh
Improving sustainable livelihoods in dryland areas	Kenya
Conservation agriculture for smallholder farmers in dryland areas	Kenya
Management of flood control, drainage and irrigation (FCDI) sluice gates	Bangladesh
Water harvesting from concentrated runoff for irrigation purposes	Spain

Roof top rainwater harvesting: concrete tank	Tajikistan
Small level bench terraces	Thailand
Soil rehabilitation in areas exposed to recurrent floods and water logging	China
Soil and water conservation practices to reduce soil erosion and enhance water conservation	Saint Lucia
Botanical pesticides and liquid compost to buffer impacts of climate variability and dry spells	Cambodia
Raised beds for improving crop water productivity and water efficiency in irrigated dryland agriculture	Egypt
Multi-storied Agroforestry cropping systems for micro-climatic modification and erosion control in Nepal	Nepal
Establishing grass barriers along the contour to reduce water runoff and erosion during heavy rainfall	Grenada
Diversified cropping system: strip cropping	Grenada
Green manure/cover crops and crop rotation in conservation agriculture on small farms	Paraguay
On-farm composting methods: traditional methods (anaerobic decomposition)	India
Enriched compost for higher yields	Kenya
On-farm composting methods: large scale passive aeration	China
Rapid composting methods: use of Effective Micro-organisms (EM)	Myanmar
Rapid composting methods: use of cellulolytic cultures	Uganda
Rapid composting methods: vermicomposting	Cuba
Fodder management: hay and silage making	Uganda
Participatory varietal selection: improved rice varieties	Bangladesh
Participatory varietal selection: improved varieties of upland rice	Ghana
Cocoa farming: Improving production and quality of cocoa through macropropagation	Brazil
Cassava processing - Cassava wet flour	Ghana
Production of high-quality cassava flour	Ghana
Storage and preservation of wet cassava	India

Sustainable livelihoods: new market opportunities for cassava	Ghana
Production of glucose syrup from high quality cassava flour	Ghana
Intercropping drought tolerant fruit trees (Mango and Jujube) in rice-based farming systems	Bangladesh
Land preparation (Africa Rice Center video on rice advice)	Burkina Faso
Rice farming: saving water through Alternate Wetting Drying (AWD) method	Indonesia
Rice and duck farming as a means for contributing to climate change adaptation and mitigation	Philippines
Improving the quality of parboiled rice	Uganda
Green manure for enhancing upland rice productivity on Striga-infested fields	Tanzania
Mini ponds for resource poor households to provide supplementary irrigation during drought spells	Bangladesh
Small-scale freshwater fish farming	Uganda
Fishpond lay out and construction	Uganda
Selection of site and water quality testing for fishpond	Uganda
Fish harvesting and post harvest handling	Uganda
Assessing losses in the fish supply chain: questionnaire loss assessment method (QLAM)	Ghana
Post-harvest fish loss model	Côte d'Ivoire
Adaptive co-management: improved management of fisheries resources	Bangladesh
Labour saving technologies and practices: conservation agriculture	(Multiple)
Labour saving technologies and practices: improved hand tools for harvesting cereals	(Multiple)
Labour saving technologies and practices: renewable energy resources	(Multiple)

106. To support the shift towards climate-resilient production and post-harvest systems combined with livelihood diversification in the targeted areas, the project will focus on the following outputs and activities.

Output 2.1: Best available technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.

106. Activity 2.1.1. Establishment of a network of demo plots to demonstrate best reforestation and agroforestry techniques with the support from technical agencies such as SODEFOR and ANADER with technical backstopping and assistance from FAO.

Cocoa farmers tend to be resource-constrained, such as lacking financial capacity and knowledge of expected returns when adopting new agroforestry practices. Making an economic argument for investments in more sustainable agroforestry plantations and the present value of future benefits will be a determining factor in increasing adoption rates of such practices and for obtaining the necessary credit to finance them.

Following the consultation process during the formulation of this project, a series of cocoa cooperatives were visited and consulted. A series of eligibility criteria were developed for cocoa cooperatives in order to benefit from climate adaptation interventions under the cocoa Value chains. These are:

- Size of the cooperative (membership and surface planted),
- Quality of the management (e.g. officially registered, management and technical teams),
- Presence of extension services providing technical support to farmers,
- Absence of cocoa plantation in protected forest,
- No to limited deforestation activities.
- Policy to fight illegal child labour.

For the selected cocoa cooperatives, the intervention of the project will focus on the establishment of demo plots to demonstrate best reforestation and agroforestry techniques. The plots design will be based on existing successful practices (e.g. GiZ experimentations with SODEFOR in classified forests in Côte d'Ivoire).

In parallel and based on Component 2 compilation of relevant innovations/technologies and their suitability against climatic projections (CIEWS), a subset of the most relevant innovations will be identified in close consultation with cooperatives and representatives of smallholder farmers. These technologies will form an innovation catalogue in the cocoa sector, well documented with clear identification of costs/benefits and an estimation of the investments required to ensure effective adoption by farmers. Under this activity, 12 demo plots which built on the sustainable existing sustainable cocoa plots will be established

Activity 2.2.2. Develop of a catalogue of good practice and trainings to for ,000 cocoa farmers

Based on preliminary assessments/consultations, it is expected that such catalogue will encompass some of the following elements:

1. Planting
 - Promote planting in troughs such as close to banana.
 - Recommend small bowls around seedlings to catch water.
 - Use of organic compost during planting.
2. Plot management
 - Improve shade management with a particular focus on permanent shade trees.
3. Agroforestry
 - Promote agroforestry combining food crops, fruit species and timber trees in order to diversify incomes with other agricultural practices.
4. Soil
 - Promote manual weeding technics,
 - Use of appropriate fertilizers (e.g. bio-fertilizers) and composting.
 - Improved irrigation and water management techniques.
 - Use of solar based pumping systems.
5. Pest and disease

- Promote integrated pest management and appropriate phytosanitary measures.
 - Prevention and detection methods for major cocoa diseases.
6. Harvest
- Solar based post-harvest processing
7. Landscape and enabling environment
- Promote use of CIEWS information and predictions.
 - Farmer field school approach and mass media campaigns should be adopted to raise awareness about the threat of climate change and adaptation options.

4000 cocoa farmers will be invited, through farmer field school sessions, to gain knowledge of selected innovations in the context of a progressive transition towards more sustainable and resilient agroforestry plantations.

Since the overall objective of this intervention is to accelerate the rehabilitation/reconversion of about 6,000 ha of overaged or affected by disease plantations, a competitive selection of relevant cocoa farms will be undertaken. Particular attention will be given to cost effectiveness, investments requested to transition to the new agricultural model as well as the compensation payments for such transitions.

National partners (e.g. FIRCA, CNRA, ANADER, SODEFOR, NGOs, private sector etc.) that will support the adoption of these innovations will be consulted in a competitive manner with the aim to provide the most cost-effective implementation proposals within the set of selected cocoa farms eligible for this project.

Development of green certification programs will be explored coupled with a traceability of green cocoa production and marketing from plantation to export points. Collaboration with the Conseil Café Cacao will be sought in this regard. Sustainable landscape geographically-based production will be explored.

107. **Intervention #2: Rice value Chain**

During the preparatory and consultation phase, in the design of this project, it appeared that most potential recipients are facing challenges in particular for rainfed rice production. Limited mechanisation and irrigation infrastructure is hampering the capacity of farmers to benefit from rice production. Another challenge was the limited access to improved varieties tolerant to climate stress from research centers like CNRA, ADERIZ and AfricaRice. However, it was noted that most rice production units benefited from a large labour force that would need to be considered. Therefore, when considering climate adaptation interventions in the rice sector, the Sustainable Rice Intensification (SRI) method appeared to be the most suitable innovation to be promoted to address adaptation challenges in the Bandama region.

By modifying management of rice plants, soil, water and nutrients to improve growth environments, farmers can get higher-yielding, more vigorous and resilient plants nurtured by larger root systems and greater diversity/abundance of beneficial soil organisms. More productive phenotypes from available genotypes enhance farmers' income and security while reducing their costs and water requirements.

The SRI as a knowledge-based methodology increases the productivity and resilience of rice, and more recently also of other crops. Its simple changes of agronomic practices were assembled in close collaboration with farmers during the 1970s-80s in Madagascar. Since 2000, SRI has been spreading to other countries, and today we estimate that more than 10 million farmers are benefiting from the application of this methodology

Conceptually and operationally, SRI is based on the principles that provide an adaptive foundation for its practice:

- Encourage early and healthy plant establishment;

- Minimize competition among plants;
- Build up fertile soils that are well-endowed with organic matter and beneficial soil biota; and
- Manage water to avoid both flooding and water stress

SRI methods are being successfully used in all the main rice-growing climates around the world and in both irrigated as well as rainfed rice systems.

SRI plants thrive with 30-50% less irrigation water compared to always-flooded rice. Reduced competition among plants in combination with aerated and organic matter-enriched soils creates stronger plants above and below ground with larger, deeper, less-senescent root systems, which can resist drought and extreme temperatures better. Also, organic matter-enriched soils are able to store more water as well as nutrients.

SRI management contributes to mitigation objectives by decreasing the emissions of greenhouse gases (GHG) when continuous flooding of paddy soils is stopped and other rice-growing practices are changed.

Good training of extension staff is required when promoting SRI practices. Well-trained and motivated extension staff makes a huge difference in impact when working with farmers. Staff should focus on experimenting and learning together with farmers.

In the context of this intervention, focus will be given on rice cooperatives or association facing substantial climatic adaptation challenges (e.g. poor access to stable irrigation system, rainfed rice, etc.).

SRI could also benefit from the preliminary list of innovations identified in the formulation of this project, such as water, weed, pest, fertilizer and compost management. Therefore, the SRI interventions will also benefit from the adoption of specific technologies from the innovation catalogue.

In terms of implementation, the focus will primarily be targeted to rice cooperatives benefitting from sufficient planting surface and with sufficient labour forces to sustain the SRI methodology.

With regards to technical implementation and taking into consideration that the SRI isn't widely implemented in Côte d'Ivoire, a training of trainers will be organized for major extension services such as FIRCA, CNRA, ANADER, ADERIZ but also local NGOs willing to participate. Similar training for recipients will be explored. 000 rice producers will be targeted

Similar to the cocoa intervention, a competitive process will be explored for both recipients and extension services. Selected cooperatives will be invited to submit implementation plans (e.g. number of hectares, households involved, labour capacity etc.) following their SRI pre-training. These plans will be evaluated by a pool of SRI experts and national partners (e.g. Ministries, Regional offices etc.) and a list of prioritized list of cooperatives will then be developed.

108. **Intervention #3: Cassava value Chain:**

Cassava is grown by smallholder farmers in more than 100 tropical and subtropical countries. Thanks to its efficient use of water and soil nutrients, and tolerance to drought and sporadic pest attacks, cassava can produce reasonable yields, using few if any inputs, in areas with poor soils and unpredictable rainfall.

Among the world's staple food crops, cassava was long seen as the least suited to intensification. The Green Revolution approach to intensification – based on the use of genetically uniform crop

varieties, intensive tillage, irrigation, fertilizer and pesticide – has proven inappropriate for cassava in rainfed areas.

But cassava's importance has changed dramatically. FAO estimates the global harvest in 2012 at more than 280 million tonnes, a 60 percent increase since 2000. Global average yields have increased by almost 1.8 percent a year over the past decade, to 12.8 tonnes per hectare. With better crop and soil management, and higher yielding varieties more resistant to drought, pests and diseases, cassava could produce average root yields estimated at 23.2 tonnes.

Growth in cassava production is likely to accelerate over the current decade. Once seen as the "food of the poor", cassava has emerged as a multipurpose crop for the 21st century – one that responds to developing countries' priorities, to trends in the global economy and to the challenges of climate change. In brief:

- *Rural development.* Policymakers in tropical countries are recognizing the huge potential of cassava to spur rural industrial development and raise rural incomes.
- *Urban food security.* A major driver of production increases will be high cereal prices, which sparked global food price inflation in 2008.
- *Import substitution.* Domestically produced cassava flour can replace some of the wheat flour in bread.
- *Renewable energy.* Demand for cassava as a source of bio-ethanol is growing rapidly. Global output of bio-ethanol could reach 155 billion litres by 2020.
- *New industrial uses.* Cassava is second only to maize as a source of starch. Recent cassava mutations produce root starch that will be highly sought after by industry.
- *Adaptation to climate change.* Of the major staple crops in Africa, cassava is expected to be the least affected by climatic conditions predicted in 2030.

As market demand grows in Côte d'Ivoire, cassava is likely to see a shift to increased monocropping on larger fields, the widespread adoption of higher-yielding genotypes, and higher rates of use of irrigation and agrochemicals. Intensive monocropping may simplify management and favour initially higher yields. Experience has shown, however, that it also increases the prevalence of pests and diseases, and accelerates the depletion of soil nutrient stocks.

Many smallholder cassava growers already practice three key "Save and Grow" recommendations: reduced or zero tillage, protecting the soil surface with organic cover, and crop diversification. FAO's "Save and Grow" farming model seeks to limit mechanical disturbance of the soil by minimizing the ploughing, harrowing or hoeing of land.

Cassava growers will be encouraged to adopt minimum tillage and, ideally, zero tillage, especially on well-aggregated, friable soils with adequate levels of organic matter. Even where conservation tillage produces lower yields, it offers farmers economic advantages: reduced spending on the fuel/labour and equipment needed for conventional tillage, and the opportunity to produce cassava more intensively and sustainably, without the need for high levels of external inputs.

Reduced or zero tillage will also be important as an alternative to conventional tillage in cassava-growing areas affected by climate change. Where rainfall is reduced such as in the Banbama region, it will help to conserve soil moisture; where rainfall increases, it will help reduce soil erosion and improve soil structure, allowing better internal drainage.

In "Save and Grow", farmers are encouraged to cultivate a wider range of plant species in associations, sequences and rotations that may include trees, shrubs and pastures. Mixed cropping diversifies production, which helps farmers to reduce risk, respond to changes in market demand and adapt to external shocks, including climate change. Rotating or associating nutrient-demanding crops with soil-enriching legumes, and shallow-rooting crops with deep-rooting ones, maintains soil fertility and crop productivity and interrupts the transmission of crop-specific pests and diseases.

Higher-yielding varieties with resistance or tolerance to biotic and abiotic stresses are available in Côte d'Ivoire (e.g. CNRA etc.) and are contributing to substantial increases in cassava yields. The availability and use of high quality planting materials that maintain genetic purity and are free of diseases and pathogens are crucial to intensified cassava production and some institutions in Côte d'Ivoire are well positioned to play an active role in this regard (e.g. CNRA, IITA, CIAT etc.).

Low-input production systems incorporating key "Save and Grow" practices, such as reduced tillage, the use of cover crops and mulches, and mixed cropping is a production model that could be promoted in the Banbama region. Extension services will be crucial in building on those practices by ensuring access to relevant knowledge from the innovation catalogue and linking it to the wealth of knowledge held by smallholders. Cassava growers will be encouraged to manage ecosystem services such as soil conservation and protection of biodiversity as an integral part of the methodology.

Studies also show that mixing cassava with a diverse group of intercrops largely benefited ecosystem services – pest suppression, disease control, soil and water services, and land productivity – and these effects were detected across very different locations and farming systems.

In this intervention, it is proposed to promote "Save and Grow" strategies in cassava with a particular attention to inter-cropping with other plants such as groundnuts, grass family, grain legumes, banana or trees. Such an approach is more suitable to small households in the Banbama region since it will focus on low-inputs and inter-cropping making cassava a more cost-effective investment compared to other commodities.

The implementation methodology will, however, be different from cocoa and rice value chains. It is proposed that the selection criteria of potential recipients are less focused on cooperatives but instead at the village and household levels. Particular attention will be given to farmer field schools as the recommended methodology to promote the "Save and Grow" approach.

Relevant extension services such as from ANADER will be explored, including their training in the adoption of a "Save and Grow" approach. The project will support 5,600 cassava producers.

Output 2.2: Income-generating activities focusing on climate resilient fish farming on the Bandama river basin, conservation, processing units, marketing) are promoted as livelihood diversification measures.

The contribution of fish farming to food and nutrition security in the Bandama Basin has been underplayed due to its low priority in the food production systems; however, FAO reports that it contributes significantly to national protein intake. As a source of irrigation water, pond water is also richer in nutrients than well water as it contains nitrogen-fixing algae, which improve soil fertility²⁶.

More importantly, this intervention will focus on small fish farming as alternative income generator for women and youth. The competition for land in the Banbama region coupled with limited land tenure makes access to land for these populations the main limiting factor for their positioning in the agriculture sector. Diversified income at household level will contribute to climate adaptation strategies by reducing potential shocks due to climate change.

With regard to this output, the envisioned actions to be taken include:

- Construction of 20 earth dams less than 15m high for fish farming activities.
- Establishment of fish farms, including the creation of value-chain services (fingerling, etc.).
- Training of farmers on Tilapia production.

²⁶ <http://www.fao.org/docrep/003/x7156e/x7156e03.htm>

- Designing and construction of ponds/enclosures
- Construction of modern ovens (“Four FTT”) to improve women’s working conditions
- Purchase and distribution of fingerlings to farmers
- Establishment and building capacity for fish farmers cooperative

1.3. Component 3: Institutional capacity development, policy engagement and knowledge management.

109. **Output 3.1: Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA) in managing climate risk is strengthened**

110. Enabling the implementation of the project will necessitate further capacity development of the relevant government agencies in charge of climate change adaptation from the policy to implementation levels. Component 3 therefore focuses on strengthening the capacity of key government institutions (3.1) and ensuring the adequate M&E of the project combined with the recruitment and training of the relevant staff to facilitate the implementation of adaptation to climate change activities. As discussed in Output 3.2., knowledge management is an integral part of the institutional capacity development, especially for the indicated government institutions, in understanding the relevant information required to help improve agricultural productivity and climate resilience of cocoa, cassava and rice in the project area. The provision of knowledge products will also help to enhance the implementation of policies by providing guidance on lessons learned from the implementation of the project.

111. The activities will consist in:

- Strengthening of capacities of staff Ministry of Agriculture, Ministry of Environment and Sustainable Development, Ministry of Forest and Water, Local councils, FIRCA, SODEXAM and their partners such as AFRICA Rice, Swiss Centre in understanding and managing climate risks; understanding and planning for adaptive transitions that may be needed, for example into new farming systems or livelihoods, exploiting opportunities for reducing or removing greenhouse gas emissions where feasible. This could include: capacity building through technological enhancement; training to enhance institutional capacity on sustainable agricultural productivity, to support equitable increases in farm incomes, food security; adapting and building resilience of the cocoa, cassava and rice sectors to climate change at multiple levels; and reducing greenhouse gas emissions from agriculture (including crops, and fisheries).. The detailed training programmes will be decided in collaboration with the staff of the SODEXAM at project start-up.
- Strengthening of the Meteorological Department and local representation, including capacity building through technology enhancement and training to enhance institutional capacity. The detailed training programme will be developed in collaboration with the staff of the Meteorological Department at project start-up.
- Strengthening the capacities with training of the 2 decentralized SODEXAM technical services (Koroghoa and Bouake) and local government technical agents with equipment, tools and training for climate risk management so they can analyze and monitor the changes in the status of natural resources and the implementation of the environmental and social safeguard measures on the field. In coordination with the PMU, beneficiaries and other relevant project partners. Strengthened decentralized SODEXAM technical services and local government technical agents will ensure a proper implementation and monitoring of the project Environmental, Social and Climate Management Plan and related Adaptation Fund’s 15 Principles in each district during the implementation of the best available technologies and integrated resilient rice, cassava and cocoa varieties (Output 2.1), income-generating activities (Output 2.2.), upgrading climate information infrastructure (Output 1.1.) and capacity building (Output 1.2). This will all contribute to improved agricultural productivity, climate resilience in the cocoa, cassava and rice sectors as adaptation strategy in Côte d’Ivoire for food security and better, livelihood in the Bandama Basin.

- Technical Assistance for improved policy frameworks to mainstream climate risks in into sectoral strategies and policies.

112. **Output 3.2 – Activities are adequately coordinated, monitored and evaluated**

This final output intends to facilitate the monitoring and evaluation of the project as well as support the project team in accessing the necessary resources to plan and implement adaptation measures. This output supports the critically underfunded Meteorological Department and Environmental Protection Agency, both institutions in charge of climate change adaptation. Under this output, activities to be undertaken are:

- Support the development of a Measurement Reporting and Verification system of climate response programmes.
- Support improved monitoring & evaluation and knowledge management activities, which will include additional baseline survey (related to climate change adaptation) and an additional terminal survey (related to climate change adaptation).
- Project management and coordination, including the recruitment of a climate change adaptation specialist for the duration of the project and staff training on adaptation-related issues.

Knowledge management (KM) is an important component of the project not only for monitoring and evaluation, but also for capacity building. Creating a better KM system is critical for beneficiaries and policy makers. Only informed government institutions and policy makers can provide support to the beneficiaries. A good knowledge management system is critical to inform government institutions so that they could build their capacity in a manner relevant for the small farming communities, which are part of the backbone of the economy. The KM will document what works well and what doesn't work in the agricultural climate resilience project of the farming community. As a result, the project will produce a knowledge management plan, knowledge transfer platform including a website, knowledge management products like packages of practices, e-newsletters, TV and radio, interviews and disseminate success stories. These products will be disseminated via online and offline various channels.

In order to achieve the above KM related outputs, a robust KM plan will be developed in which the key activities could include:

- a. identification of key knowledge inputs (from ongoing project (Table 8)) and outputs (lessons learned from this project) for KM;
- b. developing and assigning the required actions for collecting and disseminating the KM outputs and inputs;
- c. introducing and agreeing on KM protocols; and
- d. discussing, agreeing and assigning responsibilities among the relevant stakeholders.

The knowledge products shall be used as resource materials to inform and build the capacity of the institutions (Output 3.1) so that they could adequately provide useful information in improving agricultural productivity and climate resilient development of the community. It is worth mentioning that in disseminating the KM, FAO's knowledge management platform – KORE (Knowledge Resilience) shall be used, if needed. A detailed description of learning and knowledge management provided under Section G.

113. **Theory of Change:** Against the climate impacts, the Theory of Change (ToC) (Figure 19) below summarizes how a combination of the proposed interventions described above are expected to yield maximum benefits in terms of transforming the target communities into a more resilient community through the proposed components. In the rural communities, providing improved agricultural infrastructure for cocoa, rice and cassava value chains without addressing the real cause is not enough to ensure climate-proof agricultural production. It requires having adequate human, infrastructural, and institutional capacity to collect, analyze and interpret climate

information so as local communities are abreast of the climate variabilities that helps increase their awareness to undertake adaptation measures. As they are already exercising variability in rainfall patterns characterized by rainfall in the dry season and dry periods in the rainy season, awareness in climate information is important to make suitable adjustments. They also need to adopt best agricultural and land use, land-use change, and forestry (LULUCF) practices which is currently threatening the sustainability of agricultural productivity.

114. The project promotes cross-cutting and strong synergies among the components and enables local and national administrations to strengthen their capabilities to mainstream climate change considerations into activities throughout the agricultural value chains. The project activities are expected to affect improve the livelihoods of the vulnerable households in the Bandama watershed vulnerable to climate change induced hazards. The multi-disciplinary or synergy of interlinked intervention measures such as infrastructural capacity (early warning system, agricultural technologies, post-harvest equipment's), human capacity (local capacity building, government, cooperatives, etc...) and institutional capacity (M&E coordination, policy framework) are aimed to building climate resilient to avoid and/or minimize climate-induced risks.
115. As a result, the project is expected to: (i) improve hydro met and warning systems for effective adaptation; (ii) strengthen rural community's capacity to understand climate risks; (iii) provide access to post-harvest technologies and climate resilient farming systems; (iv) diversify income generating activities through resilient fish farming and conservation; (v) strengthen the national level climate information management system; and (vi) strengthen project coordination, monitoring and evaluation. These outputs are expected to enable rural communities to increase climate-smart agricultural investments that translate into higher yields, assets and incomes that improve food security and livelihoods throughout the seasons. It is important to note that the proposed components and activities are fully aligned with Côte d'Ivoire's strategic goals and expected results. Not only does it is aligned with national strategies on agriculture, the components and activities also contribute to sustainable development goals (SDGs), especially goals 1, 2, 3, 5, 8, 9, 10, 13 and 15²⁷.

²⁷ <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

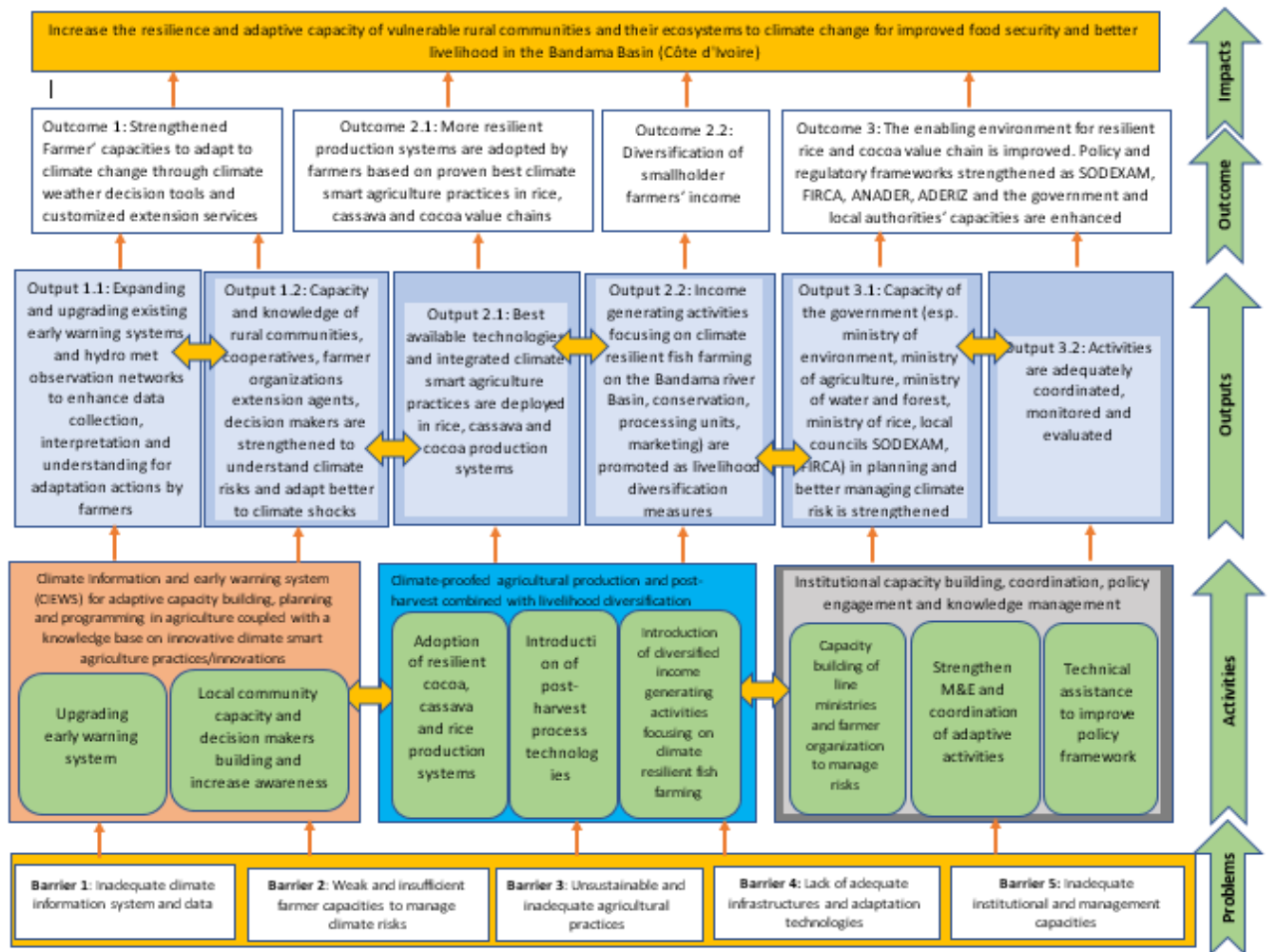


Figure 19: Theory of change of the project

B. ECONOMIC SOCIAL AND ENVIRONMENTAL BENEFITS

Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund.

116. The focus of this project is to increase the adaptive capacity and resilience of local communities to climate change by improving small-scale farmers in the Bandama watershed of Côte d'Ivoire. As stated above, it addresses the multiple and combined impacts of climate change especially the anticipated modification of rainfall patterns and decreased water availability and increases in temperatures and impact in the Bandama basin.
117. The project will contribute to the Nationally Determined Contributions (NDCs) of Côte d'Ivoire and for the country to fulfil its international commitment with the Paris Climate Agreement and the Sustainable Development Goals (SDGs) mainly the SDG1 (no poverty); SDG 2 (zero hunger); SDG 13 (climate action). This project will contribute to IFAD's objectives on environment and climate as described in its Environment and Climate Strategy 2019-2025
118. The most vulnerable populations as determined by the IFAD targeting strategy (youth and women) have been targeted to receive significant economic and social benefits from this project. They will receive capacity building on the implementation of best climate resilience business models in rice and cocoa value chains and, climatic goods and services. Goods and services include: climate resilient infrastructures as described above (technologies, equipment's, climate information networks, fish value chains infrastructures, storage and warehouse). Targeting based on the data collected during the assessment phase, profile and identify families with high levels of vulnerability that may resort to child labour as a coping strategy, carefully considering the role of gender, age and disability.
119. The project will promote decent work principles: promote minimum income schemes and living income for farmers and informal workers, collective bargaining and decent employment opportunities for youth, including children that reach legal working age. Ensure OSH and widened social protection coverage. Work with trade unions and workers' organizations to include vulnerable farmers and children of legal working age in their membership schemes, in order to give them voice and representation
120. Other socio-economic benefits will come from the activities related to resilient post-harvest with a potential side benefit of increasing both rice, cassava and cocoa yields. It is expected to have beneficial impacts on local food security and nutrition including through the creation of reserves in case of climate shocks. Sustainable land and water management techniques, along with water quality monitoring, are also expected to have benefits for local health, while the diversification and sustainable management of non-rice, cassava and cocoa crops, such as fish farming will also have benefits on overall nutrition and improved income.

1.1. Environmental and social considerations

121. Improved access and utilization of hydromet information and EWS through and improved CIEWS will reduce the climate-related disaster risks through an increase community preparedness for response and recovery, consistent with Sustainable Development Goal (SDG) target 13.1 and SDG target 13.3 on strengthening institutional capacity on climate change mitigation and adaptation. Integrated Climate Resilient type of farming systems will generate benefits for food security, adaptation to climate change (microclimate), and water management in the bandama. It will further provide safety nets for rural people in times of economic distress, helping them offset losses in income caused by weather shocks. This is consistent with SDG 13 on climate change, SDG 15 on sustainable forests, and NDC priorities on agriculture and forestry. In various agricultural production and processing interventions, fossil fuels are the main source of electricity,

promoting access to renewable energy to power agricultural value chains and produce beyond the production seasons, conserve fish stock will contribute to climate resilient and low emission agriculture. This is consistent with the SDG 7 on ensuring access to affordable, reliable and modern energy services for all.

122. The SODEXAM climate information network is still poor. Projects therefore suffer from a lack of data to support planning and management decision making. This project will collect data on climate change and rainfall patterns in the targeted areas to inform future project planning and management decision-making processes. Beyond the increase of yields and income, the project will help increase knowledge on rice cassava and cocoa resilience and best practice through the definition of an integrated climate resilient rice, cassava and cocoa business model. Through this project, increased data and information will be provided on crop vulnerability and future water-related stresses, water and fishery infrastructure, improved access to markets, post-harvest and processing facilities to add value on raw materials, better health for local populations through enhanced nutrition, reduced erosion and pollution. Participatory and collaborative processes for rice, cassava and cocoa policy-making will increase the awareness and understanding of climate risks and potential policy gaps. The trained SODEXAM staff and other partners will support climate change awareness raising activities for all actors of the value chain platforms.
123. Improved climate resilient agricultural practices, water and soil management, and agricultural residues are expected to not only increase yield, but also control degradation, runoff and groundwater recharge along the Bandama basin. The promotion of biogas technology from cassava waste will enable production of starch, organic fertilizer and biogas for energy. The use of organic manure will decrease the use of chemical fertilizers, thus lowering production costs to the producer and conserving soil carbon. The use of solar powered equipment will also foster access to renewable green energy, thereby reducing GHG emissions through reduction of the use of firewood. The promotion of integrated cocoa, rice, cassava climate resilient value chains will contribute to restoring degraded land, degraded buffer zones and, in the long run, will contribute to land and forest restoration and carbon sequestration.

1.2. Economic benefits

124. This project focuses on the most important agricultural commodities in Côte d'Ivoire. These are staple crops for food security (rice and cassava) and an important cash crop (cocoa). Combined they will contribute to enhancing rural communities food and nutrition security while improving their incomes, particularly for youth and women. This project will strengthen climate weather information and services to support capacity building in adaptation and the implementation and scaling up of the best farming models. With access to weather information, the beneficiaries will avoid carrying out farm operations like fertilizer application and spraying of agrochemicals on rainy days through trainings offered via the Farmer Field Schools (FFS). This will save them the cost of having to carry out an operation twice. The promotion of soil and water conservation techniques and technologies will improve and maintain soil health in project area. This will allow the soil to grow both at the surface and at required depths improving soil water retention. This ultimately will enhance crop production and productivity while generating income for farmers through the sale of surpluses. The programme will require that 45% of all incomes will be focused to female and youth farmers.
125. The programme will ensure that vulnerable groups in the Bandama will be appropriately taken into account in the activities. For this reason, components and activities are designed to integrate women and youth in order to reduce the inequalities that these groups face. Concretely, the project will ensure that the beneficiaries of the irrigated lands and technologies promoted by the project include enough women and young people. Climate-smart agriculture techniques and technologies promoted in Component 2 and fishery activities (diversification) will ensure social cohesion with direct economic benefit for the beneficiaries of each districts. This will even ensure that future generations can benefit from fertile land for food and nutritional needs.

126. The programme will foster rural community empowerment through capacity building in areas related to organizational development, addressing the impacts of climate change on farms and the landscape, managing irrigation infrastructure and reclaiming degraded land. These skills will lead to better decisions and positive changes in the management of natural resources. Training on climate resilience among staff of national institutions, NGOs, local councils and producer organizations will result in appropriate climate change adaptation practices at the household and individual levels. Improved household food and nutrition security through practices that enhance agricultural and fisheries productivity will lead to improved health. The gender approach of ensuring that the interests of youth, women and other vulnerable groups are adequately addressed will reduce social inequalities and strengthen the capacity of vulnerable groups to take action. These gains will be reflected in better school attendance by children from marginalized households whose difficulties in coping with poverty will have been reduced.
127. The knowledge sharing in Component 3 will also improve the decision-making of women and young people who were not involved in the programme but want to adopt a climate-smart agriculture approach. Social cohesion will also be enhanced under Component 3 because communities that work and share lessons learned together will strengthen mutual trust and collective action of adaptive capacity and resilience.
128. Further analysis of economic, social and environmental benefits of the project will be conducted during the full proposal development.

1.3. Targeting (social/gender).

129. As in most African countries, men and women in Côte d'Ivoire have clearly defined socio-economic roles based on gender norms. In the local communities, most of the agricultural work is managed by women, while men focus on some tasks like clearing and preparing land, marketing, etc. Indeed, women's contribution to agriculture in Côte d'Ivoire is substantial: they represent the majority of the agricultural labour force (60-80 percent) and are responsible for 93 per cent of household food crop production.²⁸
- i. This project will comply with IFAD social and gender policies in the AF, designed to address social and gender equality issues and child protection. The project development phase consists of a thorough gender and social assessment and strategy to inform the activities about inclusiveness believing that the project communities will be stronger if the individual families and empowered to contribute to development. The Gender Plan has been attached as an Annex.
 - ii. This project aims to holistically increase family income and to achieve this goal through climate resilient agricultural activities. Improving irrigation systems in low land plots will promote all year round rice production, meet house food needs and generate family income from sales of surpluses to address family expenditure needs.
 - iii. Women participation in community decision making processes will be promoted in project activities mainly at the project management committee level. The establishment of criteria for organizing community project committees will include proportionate representation of both male and female. This will be detailed in the Project Implementation Manual (PIM) to be completed during project start up.
 - iv. Youth sensitivity will be encouraged in targeting project beneficiaries and the project will ensure that implementing partners are knowledgeable about inclusiveness.

²⁸ OECD, Gender, Institutions and Development Database, 2019. <https://oe.cd/ds/GIDDB2019>.

C. COST-EFFECTIVENESS OF THE PROPOSED PROJECT

Describe or provide an analysis of the cost-effectiveness of the proposed project / programme

130. The project design is cost effective as it builds on works done and on-going activities in the cocoa and rice sectors by various donors and governments. It intends to improve the efficiencies of donors' investments in these sectors over the last decade.
131. The total project investment which is US\$6,000,000 project will directly benefit 15,600 direct beneficiaries. This represents about US\$384 per head of household engaged in cocoa, rice and cassava value chains. As a matter of comparison, an adaptation project at community level run by the NGO and other donors in the same area spent about US\$100 or less per direct beneficiary.
132. The project activities are based on experience from past interventions in the agro forestry sector. The staff from field levels to administration have worked with and managed complex projects.
133. Project communities will be clustered to be able to share resources, knowledge and lessons learned from the interventions and for project staff to be able to monitor and manage community activities without extensive stress and resource requirements.
134. The activities of the project are designed to obtain optimum results that are of benefit to the communities and direct and indirect project beneficiaries in tangible ways.

Table 9: Comparative analysis of environmental risks and cost-effectiveness of interventions by Component and Output.

Traditional	Cost	Alternatives	Cost
Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations			
Output 1.1. Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.			
Expand and strengthen CIEWS	US\$ 100 but not always sustainable with short lifecycle and limitations	18 automatic weather stations and 150 rain gauges; upgrade/rehabilitate existing 10 hydrological stations across the location already pre-identified by SODEXAM	The unit cost of automatic weather stations which comply with GBON is estimated to US\$20,000 new rain gauge to US\$200 and the rehabilitation of existing 10 hydrological stations at US\$5000 per unit. The unit cost for the automatic stations to be procured will be cheaper than the average cost in the region which is between US\$ 25,000 to US\$30,000. Special agreements between SODEXAM and providers will used. For the rehabilitation of hydrological stations the cost is between US\$6000 to US\$7000 and will lead to a better national and regional coverage. Currently there 2 decentralised antennas of SODEXAM (korogho and Bouake)

			<p>which provides very limited climate information and early warning systems to farmers. This investment will reach 15,600 direct farmers and 93,600 indirect beneficiaries and the cost per direct beneficiaries is US\$28,20 dollars which is considered as cost effective.</p>
<p>Output 1.2. Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks.</p>			
<p>Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers</p>	<p>Training organised on the similar topic to build the capacity of key stakeholder on this topic is estimated to US\$175 unit cost at national level and US\$ 75 unit cost local level. This is an average for development partners like AfDB, FAO in the country</p>	<p>Training of 150 government officials and local authorities during the project cycle of the project under this project</p>	<p>It is planned the training of 150 government officials and local authorities during the project cycle of the project. Each training of around 70 officials will cost about US\$30,000 for 3 days training equivalent to US\$142.85 per head/day compared to US\$175 unit cost from the other development partners like AfDB, FAO.</p> <p>Throughout the project's duration, awareness and capacities will be strengthened – mainly on climate change adaptation and resilient agro-sylvo-fishery climate resilient activities in various institutions at the national, provincial and local levels. The government staff with strengthened capacity will remain in the country after the end of the project and will therefore be able to upscale awareness on climate resilient cocoa, rice and cassava value chains, which will allow for a potential replication of the project results, In addition, trained farmers will be able to better use climate information's for adaptation in the targeted sectors. At local level the cost for training and raising awareness (3-4 days) is estimated to US\$15,000 for a group of 70 participants from 20 rural community organizations. This is equivalent to US\$ 53.57 per participant compared to US\$ 60 to 75 on average. In addition the project will provide support to local authorities for the implementation of the improved policy</p>

			frameworks/sector plans so they remain implemented in the long term to maximize results.
Component 2: Climate-proofed agricultural production and post-harvest combined with livelihood diversification			
Output 2.1. Best available technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.			
On cocoa production, traditional demo plots financed by other development projects including UNDP- SGP	The unit cost is around US\$ 50,000 per project and includes use of modern technologies with a particular focus on solar based pumping systems, solar based post-harvest processing equipment	12 demo plots will be established between 5 to 10 ha	<p>Cocoa production</p> <p>US\$ 370,000 will be dedicated to climate resilient cocoa production in 12 demo plots cocoa farms where resilient practices such as vulnerability-informed land use, tree shading and agroforestry will be applied. Compared to the UNDP- SGP which allocated US\$ 50,000 per sub project , the allocation per farms under this AF is very cost effective US\$ 30,000 USD per demo plots)</p> <p>US\$ 215,000 will be for uprooting and rehabilitation/reconversion of about 6000 ha of overaged or affected by disease plantations, with full compensation paid to producers. This is equivalent to US\$ 35.83 per ha which is very cost effective at national level.</p> <p>US\$ 110,000 USD will be used to disseminate climate information to more 15,600 farmers which given to the total number of beneficiaries is very cost effective</p> <p>US\$ 120,000 for the use of modern technologies with a particular focus on solar based pumping systems, solar based post-harvest processing equipment to attract more youth in agriculture including the promotion of biogas technology using starch and waste. Solar pumping systems are estimated to US\$4,000 per farm and are cost effective compared to solar pumps of US\$ 5,000 - US\$ 6000</p>
Traditional Rice Production	1/3 of the Investment compared to SRI	Rice Intensification (SRI)	<p>Rice production</p> <p>US\$ 100,000 to expand the System of Rice Intensification (SRI) and the exact amount was allocated for Restoration of Inland Valley degraded land for rice production to increase the production of smallholder farmers and</p>

			<p>diversify and expand their revenue sources</p> <p>US\$ 230,000 help support cooperatives with processing units locally produced. This unit cost is estimated to US\$ 3,000 as compared to imported processing units that cost between US\$ 5,000 to US\$ 10,000</p>
Traditional Cassava production	Twice cheaper than the sustainable cassava production with low yield per ha	Sustainable cassava production	Average Unit cost for a 2ha estimated to be US\$ 3000 with high yield per ha twice than the traditional cassava production

Output 2.2: Income-generating activities focusing on climate resilient fish farming on the Bandama river basin, conservation, processing units, marketing) are promoted as livelihood diversification measures.

Traditional canal with high water losses	The unit price is estimated to less than US\$ 5,000 with limited impact	20 new earth dam	The construction of 20 earth dams less than 15m high for fish farming activities for US\$150,000. The unit cost is cheaper than the average in country and region which is more than US\$ 10,000 but with higher economic and environmental benefit
Inexistent fish farms	No cost involved and no income	50 fish farms	For the establishment of fish farms, including the creation of value-chain services (fingerling, etc.) , it is budgeted US\$ 100,000 to support 50 fish farms for US\$ 2,000 each which is cheaper than the average
Traditional practices (Monoculture , deforestation)which impact negatively on production and productive assets	limited investment	6000 ha the agro forestry, uprooting and rehabilitation/reconversion	The climate resilient activities to be promoted by the project on cocoa, rice and cassava sectors are deemed cost effective because they are low-cost no-regret measures. These different measures such as the agro forestry, uprooting and rehabilitation/reconversion of about 6,000 ha of overaged or affected by disease plantations, with full compensation are all cost-effective labour-intensive investments that strengthen local capacities.

Component 3: Institutional capacity building, policy engagement and knowledge management

Output 3.1. Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA,) in planning and better managing climate risk is strengthened

Regular training	US\$ 40,000 to US\$ 50,000 on average in the region	CIEWS Training	The budget allocated for this component is US\$ 390,000 for 5 years. This is equivalent to US\$ 78,000 to cover the institutional capacity building of various national institutions and staff. This budget covers 2 trainings workshop per year of around US\$ 34,000 while at national level, the average is between US\$ 40,000 to US\$ 50,000. This component is very cost effective compared to the average cost at country level
------------------	---	----------------	--

D. ALIGNMENT WITH NATIONAL AND SUB-NATIONAL DEVELOPMENT STRATEGIES

Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

135. The project is consistent with national and sub national development strategies. Following the national consultations held in February 2019, key criteria's used to select the area (Bandama basin) were : the recognition in national and local development plans of the importance and opportunities for cocoa, rice and cassava development in the region in order to reduce the high poverty rate (57,21%, higher by 11 points than the average which is at 46,3%) and the impact of the past conflict on a highly represented youth and woman population that are vulnerable to climate change. Additionally, the region and the Bandama region are considered as part of the most important regions in the country. It has a large water resources, dams, main roads and airport connections and the Bandama basin which offers opportunities to boost a climate resilient agricultural sector (cocoa, rice, cassava value chains). National strategies and action plans such as NAPA, agricultural plan include the region as part of the government priority areas geographic areas. The region and selected areas (Belier, Gbeke, Marahoue, Bandama Central et Poro, Bandama Nord) are extremely vulnerable to climate change and face natural resources degradation, opportunities to sustainably manage degraded forests, lands and water resources . The presence of other partners are also part of the selection criteria to build synergies and complementarities.

The proposed AF-financed project is aligned with several of Côte d'Ivoire strategies, plans, programmes and reports, as described in the table below (Table 10):

Table 10: Alignment with national strategies

National Priority	Alignment
Sustainable Development Goals (SDGs)	<p>The proposed project is aligned with and will contribute towards achieving a number of the SDGs: i) SDG 1 – No poverty. Poverty reduction will be supported under Component 1 and 2 by improving climate information for better adaptation practices which will lead to agricultural productivity for the population that mainly depends on cocoa, rice and cassava farming (Output 2.1) and by developing diversified livelihood opportunities to increase household income with sustainable fishery (Output 2.2.) SDG 2 – Zero Hunger. The project will contribute to SDG 2 by improving food security and nutrition of households with improved productivity under Output 2.2 (best adaptation in rice, cassava value chains) . and Output 2.3. (livelihood diversification)</p> <p>SDG 5 – Gender equality. The project has been designed in a gender sensitive manner and will include a minimum of 45% female representation in all activities. Women-headed households will be prioritised to receive support for strengthening their houses (Output 1.1; Output 1.2) as well as Output 2.1. and Output 2.2. on livelihood diversification support.</p> <p>SDG 7 – Affordable and clean energy. Access to clean energy will be facilitated for beneficiary communities through the construction of community-based solar nano-grids (Output 2.1). for irrigation</p>

	SDG 13 – Climate action. As a climate change adaptation project, the AF project will inherently contribute to achieving SDG 13. Apart from the on the ground interventions (Output 2.1 and output 2.2.) to improve the adaptive capacity of the vulnerable char communities, better access to climate information and institutional capacity to consider and account for climate change will be increased (Outputs 1.2) and output 3.1..)
National Adaptation Plan	<p>The project activities are well aligned on the NAP main objectives. Output 1.1 on CIEWS will contribute to enhancing the institutional and regulatory framework on adaptation to climate change et capacity development with robust climate knowledge. Additionally with capacity building (output 3.1) and Output 3.2 on monitoring and knowledge management, the project will contribute to improving the NAP first development objective.</p> <p>Activities under Output 2.1. and Output 2.2. define adaptation options and diversification livelihood which are aligned on the Objective 2 of the NAP which is Adaptation Priorities for the most vulnerable sectors are included in the NAP and sectoral and national development planning</p> <p>The AF project financing itself contribute to the NAP result 3 which is financing mechanism to address climate change are strengthened including private sector engagement , innovation and identification of flagship projects</p>
Nationally Determined Contribution (NDC)	<p>Through its activities, the project will align with the NDC’s which commits to reducing its greenhouse gas emissions by 28 per cent by 2030 while improving food security, water security, and health and livelihood protection.</p> <p>Through sustainable agricultural practices, agricultural production will increase and food and nutrition security ensured (Output 2.1 and Output 2.2). This requires robust knowledge on climate change (Output 1.1.) to inform the development of NAPAs, NDCs, national strategic planning, investment and financial decisions country programming in the agricultural sector and particularly in the rice, cassava and cocoa value chains. TO sustain the work and scale it up Output 3.1. and Output 1.2. proposed capacity building activities for both smallholders, but also national institutions to better manage CIEWS and the climate services, expand and consolidate climate resilient agricultural production on both cocoa, rice and cassava value chains which reduce the CO2 emissions contributing to the NDCs.</p>
2016-2020 National Development Plan (PND – Plan National de Développement)	<p>The project is aligned with the National Agricultural Investment Programme (PNIA) II (2018-2025).</p> <p>Both Output2.1.on agricultural production and value chains (cocoa, rice, cassava) and Output 2.2. on livelihood diversification contribute to the Strategic Goal 1: The development of agro-silvo-pastoral and fisheries value added; Strategic Goal 2: Strengthening environmentally friendly agro-silvo-pastoral and fisheries production systems .</p> <p>The Overall project and the Output 1.1.; Output 1.2; Output 3.1. and Output 3.2 contributed to Strategic Goal 3: Inclusive growth, guaranteeing rural development and people’s populations well-being of the PND. The project is aligned with the National Agricultural Investment Programme (PNIA) II (2018-2025), which aims to enhance the value addition of agricultural commodities while protecting the environment and the well-being of the population. Specifically, the project will support programmes 1, 2, 3, 5 and 6 of the PNIA II.</p>

National Agricultural Investment Plan 2017- 2025	<p>The proposed project is aligned with and will contribute towards achieving the key programme of the NAIP 2017-2025. The Output 2,1 (adoption of adaptation practices) and 2.2 (livelihood diversification) will contribute to the programme 1 pillar : Productivity and sustainable development in the agro-sylvo pastoralism and the programme pillar 2 : Value chain addition and access to market; Programme Pillar 3: Sustainable management on natural resources and climate resilient agriculture;</p> <p>Output 1,2, and output 3.2. of the project will contribute to the NAIP Programme pillar 6 which is on Strengthening institutional and regulatory framework</p>
REDD+ strategy	<p>The project through Output1.1. Output 1.2. and all concrete activities promoted under Output 2.1 and Output 2.2. contribute to the REDD+ strategy which reflects Côte d'Ivoire 's commitment to contribute to the global effort to reduce GHG emissions and tackle climate change</p>

136. Furthermore, the project is in line with "UN Delivering as One" as expressed in the agreed 2017-2020 Development Assistance Framework that is focused on (i) governance, (ii) human development, and (iii) sustainable development. It brings IFAD, UNDP and FAO together to jointly support the government of Côte d'Ivoire. In particular, the project will work with policy makers to put in place policies directed toward sustainable production and consumption, decent work, income generation, and building the resilience of vulnerable populations to climate change.

137. **Strategic partnerships.** Key partners for policy dialogue include Farmers' Organizations, NGOs, private-sector actors, bilateral and multilateral development partners, the National Central for Agricultural Research and the Inter-professional Fund for Research and Agricultural Advisory Service (FIRCA), key sector ministries such as the Ministry of Agriculture and Rural Development, The Ministry of Environment and Sustainable Development, The Ministry of Forest and Water, the Ministry of Rice, Africa Rice, Swiss Centre, department of Cassava, Cocoa Board, The International Cocoa Organization, UNDP, FAO, the WFP Regional Centre on nutrition to name few,.

E. ADHERENCE TO RELEVANT NATIONAL SUSTAINABLE DEVELOPMENT STRATEGIES

Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund

138. The project will ensure potential adverse environmental impacts are identified and avoided, and where impacts cannot be avoided, a suitable plan is prepared for those impacts to be mitigated and managed. Applicable and relevant national technical standards including best environmental practice will be used to deliver the planned activities.

Table 11: Summary on how the project meets the relevant national technical standards

AF Principles	Corresponding National Standards	
	National Text enacting the standard	STANDARD
Compliance with law	Environment Code	Law No. 96-766 of 3 October 1996 promulgated the Environment Code, setting the overarching regulatory framework for environmental issues in Côte d'Ivoire. The objectives of the Code are (Republic of Côte d'Ivoire , 1996): • Protect the soil, subsoil, sites, landscapes and national monuments, vegetation, the flora and fauna, especially classified areas, national parks and existing reserves; • Establish the basic principles for managing and protecting the environment against all forms of degradation to develop natural resources and to fight against all kinds of pollution and nuisances; • Improve the living conditions of different types of people in respect of the balance with the surrounding environment; • Create conditions for a rational and sustainable use of natural resources for present and future generations; • Guarantee all citizens a framework for an environmentally healthy and balanced life; • Ensure the restoration of the degraded environment.. This is by essence the main objective of the project and reflected under across the tree components of the project and all planned activities. Component 1 of the project complies with this environment code through the development of early warning systems to protect the environment from the negative impacts of climate change (Output 1.1) to better plan and program. Additionally Output 2.1 which promotes concrete adaptation measures as well Output 2.2 on livelihood diversification set sustainable practices that comply with the national environment Code. The PMU and relevant national authorities will ensure that the activities are implemented in line with the environment code.
	Investment Code	Ordinance No. 2012-487 of 7 June 2012 established the Investment Code. This Code aims to foster and promote green and socially-responsible investment in the country. It also encourages activities such as processing local raw materials, protecting the environment, improving the quality of life, and promoting a green economy (Republic of Côte d'Ivoire , 2012). The Investment Code also provides details on topics such as: • The guarantees given to investors; • The obligations of investors; • Incentive schemes for investments The National Agency for Environment, PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP . The project addresses this code in particular through its promotion of income-generating activities under output 2.2. Additionally, the AF project itself is a green a socially responsible investment which meets the investment code standard, All activities on CIEWS under Output 1.1. aim to support the national Met network and services which fall under green investment aligned with the investment code.

Equity and Access	Law No. 98-750 of 23 December 1998 on Rural Land	<p>According to the land law in effect from 1963 to 1998, the government had the exclusive right of ownership to all the land in Côte d'Ivoire . The government could give people partial rights to land and its use (Kadi, Republic of Côte d'Ivoire Ministry of Water and Forests, and International Tropical Timber Organization, 2009). Law No. 98-750 of 23 December 1998 on Rural Land significantly changed the land ownership situation and gave the population the right to own land. Ownership rights gave rise to challenges, and further orders and decrees were subsequently passed, amending the law to clarify ownership rights. If right to the land is not claimed, the land is considered the property of the Government. However, even with the passage of the amendments, the legislation is still not in conformity with reality, and many rural people consider land their property even though their rights to it have not been properly established. The project intends to reach at least 45% women and youth. Activities under Output 2.1. both on cocoa, rice and cassava value chain development will give a special attention to youth and women. This will be also the same for Output 2.2 on livelihood diversification with sustainable fishery. Regarding participation in decision making and access to capacity, knowledge and information, Output 1.2. and output 3.1 will contribute to better access and equity. The PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP</p>
	Forestry Code	<p>Law No. 65-425 of 1965 is the Forestry Code which provides the overarching regulatory framework for Côte d'Ivoire 's forestry sector. The Code defines forest types in the country. The Code also defines the right to use the forests and to extract fruits and forest products from them, both for own use and for commercial purposes. In protected areas, there is free use of fruits and natural forest products and certain products can be exploited for commercial purposes, as long as the plants producing them are not destroyed in the collection process. Exploitation of wood is allowed in classified forest areas that are not protected areas or reserves. In unclassified forests, usage rights for fruits and forest product are reserved for local populations. Wood extraction is limited to use for timber for construction of local houses or collection of dead wood. In private and community forests, owners can exercise their legal rights. The Code requires that in forest reserves products produced for commercial purposes (e.g. charcoal) are subject to issuance of a permit (Republic of Côte d'Ivoire, 1965). Since 2002, the government has been in the process of revising its Forestry Code. However, as of June 2014, a new draft Forestry Code has been drafted but has not yet been approved and is not publicly available. Activities related to forest management and use provide opportunities and equitable access within their ownership and regulations. Under Output 2.1, the project intent to support sustainable agricultural production in the cocoa, rice and cassava sectors. By doing so, it will address the degradation of natural resources particularly deforestation. Under Output 2.1., sustainable cocoa production with tree shading, restoration of degraded land and promotion of agroforestry will contribute to meeting the forest code. The National Agency for Environment, PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP during the project implementation</p>

	The 1998 Water Code (Code de l'Eau), established by Law No. 98-755	Under the Water Code, the country's water resources are part of the common national heritage, and the state provides integrated management of all water resources, facilities and structures. The state's water priorities are: (1) providing drinking water; (2) protecting, conserving and managing water resources; and (3) satisfying other human water-related needs. The state's water management duties under the Water Code include: maintaining quality of water resources; preventing waste; ensuring availability; preventing waterborne disease; and developing and protecting water facilities and structures. The government may contract out the operation of water structures and facilities to other entities, as it has for the provision of drinking water. Under the Water Code, the right to use water is connected to the right to use land. The project location is the bandama basin where activities under Output 1.1. on CIEWS aims at supporting robust and reliable data on water availability and use. Additionally, Output 2.1. on Best adaptation practices on cocoa, rice, cassava value chains will be implemented while managing sustainably water resources. The sustainable use of water will be monitored by the PMU and National Agency for Environment, PMU and relevant national authorities to ensure compliance with the water code.
Conservation of Biological diversity	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries	Côte d'Ivoire became a partner country in the REDD+ programme in June 2011. In mid-2013, Côte d'Ivoire was selected as a priority country and the development of a Readiness Preparation Proposal (R-PP) proposal began. The proposal, developed by MINESUDD, was completed in November 2013. The REDD+ preparation project is receiving funding from the Forest Carbon Partnership Facility, the UN REDD+ programme and the French Development Agency (AFD). The aim of the preparatory project is to implement enabling activities which will lead to a decrease in net greenhouse gas (GHG) emissions from forestry. The project through Output 2.1. intends to promote the adoption of the best varieties in cocoa, rice and cassava value chains while conserving terrestrial and Bandama rivers biological biodiversity (output 2.2) with sustainable fishing. The National Agency for Environment, PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP
Gender Equity and Women's empowerment	Law on equality between couples and Solemn Declaration of Côte d'Ivoire on Equality of Chances, Equity and Gender	Equality between couples, and the possibility for women to choose between common property and separation of property. Introduction of a 30% quota for female candidates in elections Through the 3 main components of the projects, gender equity and empowerment is promoted with 50% of activities dedicated to women. The project intends to reach at least 45% woman with all activities set under Output 1.1. (access to climate information for decision making and programming at farm and institutional level); Output 1.2. (capacity building and awareness raising) with participation of women; Output 2.1. on the best adaptation activities The PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP
	The Marital Equality Act of 2012	Husband and wife have joint and equal responsibility for managing the household and raising children.

	1998 Rural Land Law	Seeks to erase distinctions between men and women with respect to land ownership rights while at the same time giving recognition to customary land rights, which are held exclusively by men. Because men control land, only they will obtain land certificates under the 1998 law, even if they might hold the certificates on behalf of a collective, such as a family group. Women have the opportunity to claim their portion of a parcel of land when the land is divided into individual plots prior to the issuance of individual title deeds. The outcome of the process depends on members of the collective being informed about and asserting their rights, and on the goodwill of the man who, before redistribution, controlled the collective land. Women, who are generally less educated than men in rural Côte d'Ivoire and less likely to be informed about the law, are at a distinct disadvantage and risk exclusion (FAO 2012b; McCallin and Montemurro 2009). The project set 45% threshold minimum for women to access to all good and services generated by all components of the projects. Under Output 2.1. (adaptation practices adopted), the project intends to support women and capacity building activities (Output 1.2) and will contribute to improving better access to assets and land to women. The gender assessment and action plan outline the activities and the PMU will ensure that women are well represented
Protection of Natural Habitats	Protected Areas Management Framework Project (PAMFP)	<p>The aim of PAMFP is to improve the capacity of the OIPR to ensure better management of the national parks with strong park community involvement. PAMFP has four components (Côte d'Ivoire Office of Parks and Reserves, 2008):</p> <ul style="list-style-type: none"> • Component 1: Institutional, Financial and Technical Strengthening for Protected Area Management and Oversight; • Component 2: Participatory Management of the Comoé National Park; • Component 3: Support to Park Communities (Biodiversity and Livelihood Education for Park Communities); • Component 4: Project Management and Monitoring for Results. <p>The National Agency for Environment, PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP. Under Output 2.1, specific activities related to cocoa value chain production, agroforestry, and sustainable management of degraded land along the protected areas will contribute to the country protected areas management. Output 1.2 and Component 3 of the project will support institutional strengthening.</p> <p>All these activities should enforce this law and the National Agency for Environment, PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP</p>
	Law Regarding the Creation, Management and Financing of National Parks and Natural Reserves	Law No. 2002-102 of 11 February 2002 governs the creation of the eight national parks and five natural reserves, as well as their management and financing. Under Output 2.1. all these activities planned should enforce this law and the National Agency for Environment, PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP

Pollution prevention and resource efficiency	Côte d'Ivoire's National Short-Lived Climate Pollutant (SLCP) Action Plan	Outlines 16 specific mitigation measures from 5 key source sectors to reduce SLCPs in the country. This ambitious plan was designed to simultaneously improve air pollution and reduce Côte d'Ivoire's contribution to global climate change. Full implementation of these 16 measures would result in a 59% reduction in black carbon emissions by 2030 compared to a business-as-usual scenario, and a 34% reduction in methane emissions. The measures would also reduce other air pollutants, such as nitrogen oxides and particulate matter, and also reduce CO ₂ emissions. The implementation of these measures could avoid over 1000 premature deaths associated with outdoor air pollution exposure, as well as reducing exposure to air pollution indoors. At the same time, the plan would reduce Côte d'Ivoire's greenhouse gas emissions by 19% in 2030, achieving more than half of Côte d'Ivoire's climate change mitigation commitment. Activities planned under Output 1.1 (CIEWS) and Output 2.1. (Adopting the best adaptation practices in cocoa, rice and cassava value chains) will contribute to reducing the emissions of GHG, by reducing the deforestation, sustainable rice production with SRI and sustainable land management. A monitoring will be done through Output 3.2. The PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP
	The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC)	The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) is a voluntary global partnership of governments, intergovernmental organizations, business, scientific institutions and civil society committed to catalysing concrete, substantial action to reduce SLCPs (including methane, black carbon and many hydrofluorocarbons). The Coalition works through collaborative initiatives to raise awareness, mobilise resources, and lead transformative actions in key emitting sectors. Activities planned under Output 1.1 (CIEWS) and Output 2.1. (Adopting the best adaptation practices in cocoa, rice and cassava value chains) will contribute to reducing the emissions of GHG, by reducing the deforestation, sustainable rice production with SRI and sustainable land management. The National Agency for Environment, PMU and relevant national authorities will ensure the compliance monitoring against this law and national standards through the ESMP
Indigenous Peoples	N/A	There are no indigenous people in Côte d'Ivoire as defined by the World Bank. The policy is therefore not triggered.

139. The project will comply with Côte d'Ivoire's Nationally Determined Contribution (NDC) to the Paris Agreement that consists of plans for mitigating and adapting to climate change through the protection of water resources, cultivation of climate change-resistant crops, developing agroforestry, protecting soil fertility, and supporting sustainable fisheries practices.

F. DUPLICATION OF PROJECT WITH OTHER FUNDING SOURCES

Describe if there is duplication of project / programme with other funding sources, if any.

140. There are a number of completed and ongoing programs with linkages and complementarities in the AF project proposal. The coherence of the AF project with these programs shall be ensured by all stakeholders under the auspices of the Ministry of Environment and Sustainable Development (MINEDD) in a coordinated manner so that it would be aligned with the existing and forthcoming projects to avoid duplication.
141. Unlike the proposed AF project, many of the existing programs have national, regional and sector specific (i.e. cocoa, cassava, rice, or forestry) programming framework, which cover different regions of the country. However, these projects have many linkages and complementarities that benefit the AF project and vice-versa in their respective sectors/ components of the AF project. This is the only AF project of this nature designed for the selected communities in which its success could have many benefits for smallholder farmers in the country and the region.
142. As indicated in the above sections of the proposal, the proposed project is the first integrated climate resilient farming approach in Côte d'Ivoire aimed to increase yields for cocoa, cassava and rice, minimize environmental degradation, and address water issues while maintaining the ecological functions and contributing to immediate and longer-term development and resilience needs of poor vulnerable smallholder farmers. The multidisciplinary and localized nature of the AF project makes it rather an exemplary project that could be potentially be replicated.
143. Côte d'Ivoire is benefiting from nine GCF approved projects: five GCF projects and four GCF readiness activities in which eight of them are at regional level consisting many West African countries.
 - a. Sub-national Climate Fund Global (SnCF Global or the "Fund") (2 Projects): The objective of this project is to catalyze long-term climate investment at the sub-national level for mitigation and adaption solutions through a transformative financing model. There are two GCF projects under this initiative one for equity and one for technical assistance (Approved Nov. 2020).
 - b. Transforming Financial Systems for Climate: This GCF project is cross-cutting in nature in which Côte d'Ivoire is one of the 17 beneficiaries in which the objective is to create self-sustaining markets in energy efficiency, renewable energy and climate resilience (Approved November 2018)
 - c. Programme for integrated development and adaptation to climate change in the Niger Basin (PIDACC/NB): This GCF project also constitutes multiple African countries which focuses in improving the resilience of populations and ecosystems in the Niger Basin by managing natural resources sustainably and has cross-cutting in nature.
 - d. Promoting zero-deforestation cocoa production for reducing emissions in Côte d'Ivoire (PROMIRE): As indicated in Table 8 below, this is the only national level approved project which has synergies and complementarities are indicated without any duplication.
144. The summary of all relevant projects which have synergies and complementarities are shown in Table 8. As indicated in the table, these projects are research, policy, marketing, business, conservation, and knowledge management related in nature with no duplication, which are expected to add value for the success of the AF project. This demonstrates that the existing projects are very helpful in laying the foundation for the success of the proposed project activities

Table 12: Project Synergies and Complementarities with other Completed and On-going Cocoa, Cassava and Rice Projects

COCOA				
Project and donor	Project Name and Implementation Status	Main interventions	Synergies	Non Duplication and complementarity
Strategic Plan on sustainable agricultural production – UNDP	The COCOA and Forest Initiative – Strategic Plan on Sustainable Agriculture	The main objective is to develop a strategic plan on sustainable agricultural production and forest restoration for régions de Bélier et Cavally	The strategic plan could build on results and lessons learnt from the AF	AF project will inform the national strategic policy during its design or review
GEF food systems Impact Program - Côte d'Ivoire FAO	Food Systems, Land Use and Restoration (FOLUR) Impact Program	FOLUR Country Project main objective is engage in more participatory and comprehensive land use planning and mapping, promote better governance and aligned incentives, scale up improved practices and leverage investments.	GEF Food Systems could be on the scaling up of the best adaptation practices generated by the AF project while the AF project could apply the GEF IP FOLUR participatory and comprehensive land use planning and mapping tools and approach on cocoa, rice and cassava value chains	There will not be any duplication and the two projects complement each other. GEF project is more on land use for foods systems while the AF focus on adaptation along cocoa, rice and cassava value in a a specific region (Bandama basin)
Support to Reducing Emissions from Deforestation and Forest Degradation (REDD+) investments in Africa. GCF submitted by AFDB	Support to Reducing Emissions from Deforestation and Forest Degradation (REDD+) investments .	The objective is to strengthen the capacity and accelerate the efforts of African countries on resources mobilization for projects to reduce emissions from Deforestation and forest degradation and to conserve and sustainably manage the continent's resources forest resources	Coordination at design stage to ensure synergies between the projects	There will not be any duplication and the two projects complement each other.
IFAD -GCF IGREENFIN	Inclusive Green Financing for Low emissions and climate resilient agriculture (IGREENFIN) Under design stage	The main objective is to enable a market for investments for investmeents on adaptation and mitigation practices and climate technologies by removing the financial and technical barriers faced by agricultural banks and smallholder farmers	Coordination at design stage to ensure synergies between the projects and the areas of interventions	There will not be any duplication and the two projects complement each other's. IGREENFIN will support better access to financing by farmers targeted by the AF project

GCF SAP REDD,- FAO –	Promoting zero-deforestation cocoa production for reducing emissions in Côte d'Ivoire (PROMIRE) Status: Approved Nov. 2020	The main objective is to promote zero-deforestation cocoa production for reducing emissions in Côte d'Ivoire (PROMIRE)	FAO is a main partner of this AF project and involved in the design of the AF. At the implementation stage of the future UN REDD FAO project, FAO and IFAD as partners under this AF project will ensure that synergies are built between this AF project and the GCF REDD	FAO and IFAD will ensure that there is not duplication between this AF project and the GCF REDD.
RICE				
PADFA _ IFAD	Agricultural Value Chain Development Support Programme	The project is aiming at promoting the development of Agricultural value chains (rice mango, vegetables)	Same AF targeted regions Bagoué, Poro, Tchologo, Hambol et Gbêkê and the AF could guide the mainstreaming of adaptation into the PADFA while for key lessons learnt collected during supervision, midterm review on rice from PADFA project will inform the AF project during	There will not be any duplication as PADFA is more focused on development intervention rather than adaptation and only rice value chain is targeted by PADFA. Adaptation practices under the AF will complement the purely rice development approach of PADFA
PACIPIL – UNDP	Development of Inclusive Value Chains and the Promotion of Local Initiatives (PACIPIL)	The ongoing Support Programme for the Development of Inclusive Value Chains and the Promotion of Local Initiatives (PACIPIL) targets mainly smallholders in the rice, maize, cassava and cashew nut value chains	The geographic areas targeted by PACIPIL are different from the AF project . As UNDP is a main partner of the AF project, Knowledge sharing mechanisms between the two projects on climate resilient rice value chains will be established	No duplication is foreseen as PACIPIL is more focused on development intervention rather than adaptation and in different regions
Projet de promotion du riz local en république de CI (PRORIL)- JICA	Secodn Phase Local Rice Promotion Project (PRORIL)	Rice sector development in the regions of Belier du Béliet et du Gbêkê.	Same geographic areas Belier du Béliet et du Gbêkê but completed. The AF project builds on lessons learnt from PRORIL during the design	There will not be any duplication as the CI (PRORIL)- JICA has completed and the AF built on the lessons learnt
Rice research program Africa Rice	Technical and scientific research on cassava, technical assistance to farmers organizations, policy dialogue on rice development in Côte d'Ivoire and Africa	Technical and scientific research on cassava, technical assistance to farmers organizations, policy dialogue on rice development in Côte d'Ivoire and Africa	Africa rice has demonstrations sites in the AF targeted areas. Exchange visits and training could be organised between the AF and the Africa rice project	Africa rice programs focus more on research for development and could guide investment under component 2 of the AF project.
Cassava				

Centre Suisse de Côte d'Ivoire	Technical and scientific research on cassava, technical assistance to farmers organizations, policy dialogue	Technical and scientific research on cassava, technical assistance to farmers organizations, policy dialogue	The AF project will collaborate with Centre Suisse to value their research outcomes to inform the AF project	No duplication is foreseen as the Centre Suisse is a research centre on cassava. Research work could be used to support climate resilient cassava value chains under the AF
Cassava Project-FAO	Strengthening linkages between small actors and buyers in the Roots and Tubers sector in Africa	Strengthening linkages between small actors and buyers in the Roots and Tubers sector in Africa	FAO is a main partner of the AF project, Under this partnership, lessons learnt from this regional project will inform the KM and implementation of the AF	Key lessons learnt from this continental project could benefit to the AF project. FAO has a partner of this AF will facilitate the collaboration between the two projects
Nutrition-sensitive agriculture Project FAO	Sustainable soil management for nutrition-sensitive agriculture – Vegetables focuses project	The project aims at promoting nutrition-sensitive agriculture in support of women's groups in the Poro Region. The project focuses on vegetables	FAO is a main partner of the AF project, Under this partnership, the AF build leverage from ongoing lessons learnt , sharing of experiences and good practices	There will not be any duplication and only one region out the 3 targeted regions is covered by the FAO project. The project focuses on vegetables production which complement rice, cassava from a nutritional point of view
Other relevant initiatives				
Restoration of the first capital- REDD+ World Bank	Restoration of first capital	The main objective is to conserve and restore the forest and to improve income of rural communities through better sustainable management of forests	The REDD+ World Bank targets the Region of Belier also targeted by the AF project. However the REDD+ project mainly focuses on forest management while the AF look at climate resilient cocoa, rice and cassava value chains. Under an agreed partnership, the projects could build synergies on sustainable cocoa production while protecting the forests	No duplication is foreseen but more complementarity between the two projects particularly on sustainable forest management while promoting climate resilient cocoa value chain
Integrated Program for Development and Adaptation to Climate Change in the Niger Basin (PIDACC / BN) Côte d'Ivoire component - AFDB	Integrated Program for Development and Adaptation to Climate Change in the Niger Basin (PIDACC / BN) Côte d'Ivoire Component	The main objective is building the resilience of communities and ecosystems through sustainable natural resources	The PIDACC targets one Region of Belier , Gbèkè , N'zi, Moronou, Iffou, Boundiali, Odienné covered by the AF. The project will partner through its PMU with PIDACC to ensure that synergies are built between the two projects.	There will not be any duplication as PIDACC is more focused on water management. However PIDACC could complement the AF in Belier Region with key best practices developed on communities resilient building
Agropole Zones (2PAI-Bélier) - AFDB	Belier Region Agro-Industrial Pole Project	The main objective is to set up and modern agropole to support processing and	The AF will explore partnership with the Agropoles zones , so production generated from the AF could be processed and transformed so	The two projects complement each other as the AF is more on the production while the AfDB project is mainly on processing and transformation

		transformation of agricultural raw materials	population could add value to their production.	
--	--	--	--	--

G. LEARNING AND KNOWLEDGE MANAGEMENT

If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned

145. Effective knowledge management – including the collection, generation and dissemination of information – is an important component of climate change adaptation. Access to current and detailed information on climate trends and adaptation techniques is essential for project stakeholders such as government agencies, agricultural extension services and local communities to effectively and sustainably implement prioritized adaptation intervention **on cassava, rice and cocoa value chains**. Component 3 in the project includes the design and implementation of a KM plan, which will consist of capturing, documenting and disseminating lessons learned from the project activities both at the local and institutional levels for targeting and improving adaptive capacity in cocoa, rice and cassava value chains. Monitoring and evaluation activities will also be implemented under Component 3 in order to inform long-term policies and strategies for climate adaptation practices in the agricultural and rural development through income diversification. The knowledge acquired in the project will be shared on online and offline channels.
146. The project will identify and analyze knowledge products in existing projects in the country, focused on climate information and early warning systems, climate resilient and sustainable cocoa, rice and cassava value chains to serve as a basis for the knowledge management activities that this project will implement. This basis will also allow the project to understand where knowledge flow needs to improve to improve the project's outcomes as well. Thus, the project will define specific targets for its KM plan in order to identify the most appropriate knowledge products for these targets and define the most relevant events for knowledge access and sharing such as regular physical or virtual workshops. Workshops allow relevant stakeholders and beneficiaries to exchange experiences and learn from each other. Integrating lessons from previous projects' knowledge products will ensure a strong knowledge management established across the project by assessing performance against anticipated outcomes and adjust as necessary
147. The project will establish a knowledge platform on climate risks and climate change adaptation activities to enhance experience sharing. The project will generate knowledge through conducting vulnerability mapping and climate research, this research will focus on assessing the future geographical suitability for cassava, cocoa and rice production in Côte d'Ivoire by looking at maximum dry temperatures that are projected to be limiting for the crops. From this activity, there will be an understanding of what the differentiation of climate vulnerability is within the project area. In addition, it will project the implications for future shifts in cassava, cocoa and rice production and hence, recommend adaptation measures. The project will work with relevant partners and stakeholders to contribute to the development of maps for protected forests in the country. These maps will be made available to the implementing partners and used to map cocoa farms. The vulnerability mapping of areas most susceptible to slash and burn will also be mapped adding to knowledge of the scale of the problem at a national scale.
148. In addition to the maps, this activity will also include researching crop failure. The project will also design tools for knowledge dissemination to the farmer level. This will be in the form of best practices manuals and guides for tree crop production, fish farming, a curriculum developed for climate smart agriculture that will be implemented through the FFS and type of business models, an early warning system tool to disseminate agriculturally related meteorological data, pest management warnings and short demonstration videos in their indigenous languages. Furthermore, the project will develop case studies that will help disseminate lessons learned and foster replication or scaling up of successful climate smart crop production enhancement. Whenever possible, the project will facilitate baseline studies and surveys for future interventions.
149. Beyond the knowledge transfer platform on climate risks and climate change adaptation activities in the country, the experiences and lessons learned from this project will also be shared in other networks in West Africa (AGRYMET, ACMAD), GBON to inform the growing investment in climate resilient

cassava, rice cultivation and as well as climate resilient cocoa value chains. A regional platform will scale up this project, enabling improved adaptive management beyond what would be observed in the case of a single country project. The lessons generated by the project will be disseminated through relevant:

- e-newsletters, articles, blogs and hardcopy publications online,
- in workshops, seminars, at the line ministries and at public functions websites as well as websites of relevant regional platforms in the field of cocoa including the international cocoa organization and Africa Rice Centre. In addition, the project will produce success story videos, TV, radio interviews and packages of practice for dissemination through online and offline channels.
- case studies, photo stories and short videos; booklets, posters and brochures; public and school presentations; climate hazard maps; trainings, meetings, exchange visits and workshops for community members, community leaders, CBOs, and civil authorities regarding climate resilient agriculture and • community briefs and guidelines.

150. Throughout the implementation of the project, lessons learned from ongoing projects that enhance adaptive capacity of the farmers will be integrated into project interventions. The lessons learned shall be collected both through quantitative and qualitative approaches including field visit (household survey), focus group discussion and expert elicitation.

151. Based on the lessons learned, the KM will further enrich the implementation of the project, capacity building, and policy improvement. In attaining this, some of the approaches that will be adopted could include:

- a. Under the auspices of the Ministry of Environment and Sustainable Development (MINEDD), the partners (ADERIZ, ANADER, SODEFOR, SODEXAM, and NGOs), sectoral ministries and all relevant stakeholders will capture and collate lessons learned at all levels of implementation. The KM Plan shall be used to guide the process.
- b. The project management unit of MINEDD will directly work with implementing entity, donors (FAO and UNDP), implementing partners, steering committee, technical committee, and regional advisory committee to have a centralized KM system to avoid redundancy and increase efficiency. As a result, key lessons learned will be channeled to MINEDD through this structure (Figure 20).
- c. FAO, using its experience in developing and applying Knowledge Resilience (KORE) knowledge transfer platform, shall provide support. KORE has several tools, approaches, programs, analyses and methodologies on resilience which could be adopted for the project.
- d. In order to have a structured approach, the project shall consider adopting the following three KM steps, which will ensure the coherence of KM, including:
 - **Knowledge Management Registry (KMR):** The KMR shall define areas of knowledge needed by the projects such a "key knowledge inputs" from ongoing projects and "knowledge outputs" from lessoned learned.
 - **KM Protocol:** The KM shall develop a process of creating the KM which defines the roles and accountabilities of each partner and details on how the knowledge shall be collected, stored, organized and distributed throughout the project lifetime.
 - **Implementation Plan of the Project:** The KM shall make sure the KM protocol is ready to be applied throughout the implementation of the project.
- e. Key lessons learned will be shared during learning events that will be organized by the PMU where wider stakeholders are expected to participate. In addition to sharing lessons learned, these events will create an opportunity to discuss how to institutionalize key lessons so that they could be useful in applying for other vulnerable communities with similar activities and strategize at national level especially with respect to climate information knowledge management and application at local level.

H. DESCRIPTION OF CONSULTATIVE PROCESS

Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund

152. Public consultation during the preparation of the project, were conducted in accordance with the requirements of the AF and IFAD (see in Table 2 a part of the list of people/ institutions consulted).
153. The Government of Côte d'Ivoire and EPSILON INNOVATION GROUP conducted two stakeholder consultations from 3 – 7 April 2019, and 19 November to 3 December 2019 and field mission for data collection and consultations in the selected villages of the central Bandama region, from 02 – 18 February 2020. From February to July 2020, various consultations took place virtually with IFAD design team and others partners to finalize the design proposal. These consultations have been conducted following a first Concept Note submitted to the Adaptation Fund by the African Development Bank and not cleared in August 2017.
154. The main objective of this approach of information, communication and participation of stakeholders was to create a climate of mutually beneficial exchanges, favourable to an open dialogue with the aim of: (i) ownership of the project by beneficiaries at the stage of preparation and planning; (ii) the consideration of the concerns of all stakeholders including vulnerable populations (women, youth, children, etc.) in the design and implementation of the project; (iii) exchanges on financing and project sustainability; (iv) identification of environmental and social impacts and risks and appropriate mitigation, compensation and environmental and social cooperation. The consultative process comprises more than three weeks of stakeholder consultation and field trips, and partly on interviews with all stakeholders and beneficiaries of the project.
155. In the first mission (3 – 7 April 2019), stakeholder consultation was conducted with the beneficiaries of the adaptation project to discuss their concerns and challenges so that we could devise the best adaptation project activities. In this mission, consultative meetings were conducted with respective ministries at their respective offices mainly agriculture, environment, forestry and energy, and then an in depth presentation and discussion were conducted that included concerned technical ministries regional representatives, farmer organizations, and local authorities. The list of institutions consulted are shown in **Annex 9**.
156. In the second mission (19 November to 3 December, 2019), more focused stakeholder consultation and capacity building activities were conducted. The stakeholder consultation include: national and local government, administrative and regional authorities, non-governmental institutions, local communities, private actors along the various agricultural value chains etc. During this mission, based on their the degree of exposure to climate hazards, high poverty level, and inherent low climate resilient activities, three regions such as Belier, Gbékè and Marahoue were selected.
157. Following the first and second missions, field mission (02 – 18 February 2020) was conducted in the three regions of the Bandama Watershed with high potential for the implementation of climate change adaptation. In the three regions, thirteen villages were consulted including Gbékè regions (Goly Kpangbassou, Pronou, Logbakro, Behoukro N'Guessan Pokoukro), and Belries (Assounvoué, Balakro, Zatta, Duibo-kpato, Takissalekro, N'Vlankro, N'Gangoro

Kpassanou, Toumbokro). The survey and interview in these three regions 450 farmers and structural managers of which about 40.20% of whom are women. These public consultations were held in the regions covered by the IFAD project. During these series of consultations, the gender element was very present given that women and youth are generally regarded as vulnerable groups and representatives of indigenous peoples.

158. Using two stakeholder consultations, field survey, expert solicitation and literature review, we have validated the vulnerability of the selected regions. Given the fragility of the context prepare the Social Environment and Climate Procedures (SECAP) and the Environmental Social Management Framework given the fragility of the ecosystems. Interviews with resource persons working in different ministries and structures involved as well as main actors engaged in main agro forestry, pastoralism were made. Field visits (potential sites and sites in exploitation) and interviews with the beneficiaries of perimeters in exploitation were made. This helped to establish in a participatory manner the context of project development, problems to solve, the types of adapted solutions, etc. and the consideration of the problems of vulnerable populations particularly women and youth.

The process was conducted as follow:

159. In the first stage, beneficiaries were widely informed on the objectives and activities of the project. These meetings were conducted in each area of intervention of the project by representatives of technical services (agriculture, environment, forestry regional representations of Agriculture rooms and representatives of farmers' organizations, etc.) and representatives of local authorities.

160. In each of these regions, the mission organized an information and consultation meeting for all regional actors including technical services, NGOs, producer organizations, youth organizations, representatives of SODEXAM. In the targeted villages meetings were organized with local populations in order to exchange with them on the project activities, their needs and their solutions. The concerns raised by the communities during the public consultation is summarized in Table 13. This document is coordinated by IFAD with in close collaboration with other development partners such as UNDP and FAO. Government officials, communities met during the mission have been referenced in the targeting and gender strategy in compliance with the Gender Policy of the Fund, is included as part of the Annexes attached. A list of attendance for the targeting and gender assessment is included as well as the description of the field joint mission and the process that led to this AF. The list of persons met during the mission is presented in the Targeting and Gender Strategy attached.

161. A national Validation workshop was organized on 4-5 August 2020 with all decision makers prior to the project submission.

Table 13: Concerns raised by the populations during the public consultations

Sectors	Main concerns raised	Solutions proposed
Agriculture	Decline of soil fertility and soil erosion	Activities under Output 2 Actions to improve the fertility of the soil and land Management.
	Deficit Weather Forecast Information and Lack of Its Access	Activities under Output 1: Climate information systems.
	Lack of access to climate resilient inputs (seeds, fertilizers, bio pesticides) quality) on cocoa, cassava and rice sectors	Activities under Output 2 Sustainable and climate resilient agriculture.

	Crops diseases especially cocoa trees and vegetables	Adoption of climate resilient crops, climate proof and sustainable agricultural practices, and post-harvest practices as stipulated in Output 2.
	Lack of equipment's	Activities under Outputs 1 and 3 and Promote sustainable agro forestry eco-businesses for youth and women
Forestry	Destruction of forests and plantations by slash and burn, bush fires	Activities under Output 2 (establishment of demo plots to demonstrate best reforestation and agro forestry techniques) and Output 3 Strengthen institutional and regulatory frameworks and promote forest management, particularly for cocoa production.
Fishery	Reduction of fish stock, pollution of the Bandama river basin	Activities under Output 2.2. Income-generating activities focusing on climate resilient fish farming and livelihood diversification measures.
Institutional	Lack of enabling environment for institutional effectiveness and coordination mechanism	Activities under output 3 focuses to promote adequate coordination (both national and local), monitoring and evaluation mechanisms.
Youth Unemployment	Lack of job and migration	Activities in Output 3 stipulates the creation of green jobs for youth, women, the improvement of farmers' production and incomes, the improvement of women's incomes and their development as well as the improvement of the level Life of target areas.
Social exclusion	No inclusion of youth and women	Oupptut 3 promotes livelihood diversification measures

List of organizations contacted, stakeholder consultation participants and pictures of field missions are provided in **Annexs 9, 10 and 11**, respectively.

I. JUSTIFICATION FOR FUNDING REQUESTED

Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

162. The overall objective of the project is to increase rural communities' resilience to climate change through resilient livelihoods and resilient value chains. The paradigm shift is to move from a "business as usual" characterized by unsustainable management of natural resources in the main key commodities (cocoa, rice and cassava) and agriculture practices to climate resilient agricultural value chains informed by a robust climate information systems and early warning systems in the Bandama Basin.
163. Against the baseline scenario (business as usual) and the alternative adaptation options are presented below :

1.1. Alternative 1: Without project

164. The alternative without project means not doing the Adaptation Fund project. Vicious cycle of poverty plunges poor people including the most vulnerable to climate change (youth, migrants) that depend on natural resources for their livelihood (food security, nutrition and income) in the Bandama Basin. In this case, farmers will remain vulnerable to climatic changes as long as possible. Agricultural yields will continue to decline as the both the basin is affected. The production will remain low and food insecurity and poverty, migration high unemployment, insecurity will gain more ground in connection with population growth. Indeed, the current situation is marked by droughts or intense rain, which limits the efforts of farmers. There is more and more a shift in terms of rainfall towards the south and some areas are becoming more and more not suitable to cocoa and rice productions, Current coping and agricultural practices (rain fed agriculture, deforestation, logging, hunting) in a context of climatic stresses are clearly inadequate and exacerbate food insecurity, malnutrition and conflicts over resources, high unemployment rate, migration in the absence of job opportunities and the inability to adapt to climate change. Agricultural techniques have remained rudimentary as opposed to the southern part of Côte d'Ivoire where agriculture is semi mechanized; producers cannot deal with these phenomena of climate change. The rate of deforestation will continue and will affect the biodiversity while contributing to limiting the carbon sink function of the remaining forests. Young people prefer to migrate in the absence of opportunities. Without the project, sites will remain exposed to droughts, floods, unsustainable management of natural resources, deforestation; conflicts over resources; erosion of the land. The forests will remain prey to bush fires during the dry season, and their ecological and environmental importance will decline. The lack of water to irrigate crops during dry periods will remain and the rate of food insecurity may increase. The alternative without the AF project is environmentally, economically and socially unsustainable. It does not allow the achievement of a sustainable economy because the country will be obliged to put in place in the medium term emergency programs to rescue the populations in these regions. These programs from a financial point of view will cost the country and the donors more than the project under development to have the same results.

1.2. Alternative 2: Development of a classic project without resilient actions on climate change (Business as usual)

165. This alternative is to implement a purely development project that does not include resilient actions on along the selected commodities and or sustainable management of natural resources. Such a classic project may concern: (i) the development of the sites without climate information

infrastructure to better guide the programming with robust and reliable data (ii) a simple development of the sites without flood protection actions, sustainable watershed management and the silting up of the sites; (iv) the development of the sites without actions of capacity building of producers on adaptation techniques; v) no support to climate resilient cocoa, rice and cassava value chains . This alternative is less costly but will not produce convincing results in the long term particularly in this targeted area under climate threats. In view of the location of the project and the effects of climatic disruptions, there are irregular rains, floods in the rainy season and dry up during the dry season. This phenomenon is coupled with the erosion and transport of sediments that sand the shallows; deforestation and biodiversity including fish loss. This limits the development of agricultural sector including forestry and fishery. This alternative therefore does not solve the problems faced by the populations.

1.3. **Alternative 3: Development of an AF project** with proposed climate resilient interventions through:

166. **Output 1.1: Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.**
167. Installation of 18 automatic weather stations; 150 rain gauges; upgrading and rehabilitation of existing 10 hydrological stations (automatic stage recorders) and its specialized hydrological equipment (acoustic doppler current profiler, bathymetric instruments...) Bandama Rivers and small flood-prone watersheds. Dissemination of local climate information to local cocoa, cassava, rice producers specifically for droughts, floods and humidity. The project will leverage climate information for cropping calendars from an existing IFAD, FAO, UNDP project that supported the installation of rain gauges and automatic weather stations in this AF project target region. The project will strengthen the network of agrometeorological stations with the installation of automatic weather stations in the targeted area
168. Systematically collecting data and undertaking risk assessments Improvement on crop modelling and assessment of climate vulnerability
169. Dissemination of local climate information to local cocoa producers specifically for droughts, floods and humidity. Develop hazard monitoring and early warning services including weather and hydrological monitoring equipment, improving forecast capabilities and the use of the CIEWS within agricultural advisories, drought and flood risks monitoring
170. Facilitate the collaboration between SODEXAM and Telecom companies to disseminate weather climate information through digital platforms and sms to cooperatives and extension services for cropping calendar and planning
171. **Output 1.2. Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks.**
- Training of 15,600 smallholder farmers on the timely dissemination of early warning products (including agro-climatic information),
 - Raising awareness among 15,600 smallholder farmers on the best climate adaptation/mitigation practices/technologies in agriculture
 - Training of 150 extension agents on climate resilient agriculture
 - capacity-building programs for government authorities to support decision making and local contingency planning, regulatory bodies
 - Build national and rural communities response capabilities to effectively when warnings are received , access to property rights and control over assets by women

172. **Output 2.1: Best available technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.**

173. **Cocoa value chain:**

- Establishment of demo plots to demonstrate best reforestation and agro forestry techniques
- Development of cocoa farms, which include resilient practices such as vulnerability-informed land use, tree shading and agroforestry.
- Uprooting and rehabilitation/reconversion of about 6000 ha of overaged or affected by disease plantations, with full compensation paid to producers
- Dissemination of local climate information to local cocoa producers specifically for droughts, floods and humidity. The project will strengthen the network of agrometeorological stations with the installation of 18 automatic weather stations and 10 hydrological stations. The project will also leverage climate information for cropping calendars.
- Improvement on crop modelling and assessment of climate vulnerability
- Use of modern technologies with a particular focus on solar based pumping systems, solar based post-harvest processing equipment to attract more youth in agriculture
- Facilitating farmers' access to improved climate friendly cocoa and rice production technologies and farming systems
- Improving cocoa and rice research system through partnership with the cocoa board the international cocoa organization, relevant international centers and the private sector
- strengthening the overall production performance of rice and cocoa through sustainable monitoring and evaluation systems, including a Grievance Redress Mechanism (GRM) to monitor development and compliance with environmental and social safeguards
- Development of credible certification programs and promotion of cocoa and rice production for niche markets through the development of specific geographically-based production;
- Establishment of cocoa and rice dedicated logistics platforms in the selected intervention areas
- Training programs to develop the technical and managerial skills necessary to support the promotion of competitive processing by small and medium-scale entrepreneurs (including cooperatives).
- Review of the traceability of cocoa production and marketing, from plantations to export points
- Strengthen of cocoa and rice cooperatives and support to establishing Cocoa Inter-profession, with a genuine public-private partnership that will ensure producers, private sector and civil society participation in the management of the sector;

174. **Rice value Chain:**

- Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding) will be implemented in partnership with Africa Rice
- Expanding the System of Rice Intensification (SRI)
- Support to MOA to run Farmer Field Schools and provide other technical support. The FFS will showcase specific approaches to facilitate the introduction and uptake of resilient practices for farmers.
- Capacity building in modern composting techniques to reduce/prevent movement of farms to fallow land in secondary cropping years
- Boreholes irrigation schemes, to cope with the consequences of drought and heat extreme events, boreholes will be rehabilitated and irrigation schemes will be deployed. The increasing needs for irrigation induced by future climate change will be integrated in the design of the schemes.

- Restoration of Inland Valley degraded land for rice production to increase the production of smallholder farmers and diversify and expand their revenue sources.
- Wet-season valley bottom water control cascaded dykes
- Micro-catchment water runoff control dykes
- Construction or consolidation of structures for gravity irrigation serving 8,000 producers
- Watershed rehabilitation, water efficiency and management,
- Training and extension and infrastructure rehabilitation and construction including drainage systems

175. **Cassava value Chain:**

- An assessment of the impact of cassava production on rural livelihoods as a climate change adaptation strategy
- Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)
- Community mobilization and organizing to take up cassava as a climate smart cash crop and cooperative development
- Support female farmers to engage in commercial cassava production (including training in sustainable cassava production, promotion of biogas technology using starch and waste, negotiating access to farmland, tractors)
- Conduct random control trails for rigorous testing and evaluation of the impact of cassava uptake on the resilience of female farmers and drought prone communities
- Support cooperatives with processing units

176. **Output 2.2: Income-generating activities focusing on climate resilient fish farming on the Bandana river basin, conservation, processing units, marketing) are promoted as livelihood diversification measures.**

- Construction of 20 earth dams less than 15m high for fish farming activities.
- Establishment of fish farms, including the creation of value-chain services (fingerling, etc.).
- Training of farmers on Tilapia and Milkfish production
- Designing and construction of ponds/enclosures
- Purchase and distribution of fingerlings to farmers
- Construction of modern ovens
- Establishment and building capacity for fish farmers cooperative

177. **Output 3.1: Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA,) in planning and better managing climate risk is strengthened.**

- Strengthening of capacities of staff Ministry of Environment, SODEXAM on climate change adaptation. This could include: Capacity building through technological enhancement, Training to enhance institutional capacity. The detailed trainings will be decided in collaboration with the staff of the SODEXAM at project start-up.
- Strengthening of the Meteorological Department and local representation, including capacity building through technology enhancement and training to enhance institutional capacity. The detailed trainings will be decided in collaboration with the staff of the Meteorological Department at project start-up.
- Technical Assistance for improved policy frameworks to mainstream climate risks in into sectoral strategies and policies.

178. Various activities planned these outcome and presented under section project components and description will contribute to achieving environmentally, economically and socially sustainable development. At the environmental level, activities to climate proofed cocoa, rice and cassava value chains in the Bandama region while building the resilience of rural communities. Additionally forecast based decision making using climate information systems and surveillance will contribute to better climate risks preparedness in these sectors. In economic terms, the project activities allow the creation of green jobs for youth, women, the improvement of farmers' production and incomes, the improvement of women's incomes and their development as well as the improvement of the level Life of target areas. At the social level, the project promotes the reduction of the phenomenon of rural exodus, migration towards main cities; improving food and nutritional health of populations, poverty reduction and the strengthening of community life.

J. SUSTAINABILITY

Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme.

179. The sustainability of beneficiaries' climate smart production activities is embedded in the tremendous benefits that they will accrue from demonstrating climate smart production of cassava, cocoa and rice and the livelihood aspects of cassava, cocoa and lowland rice production that will provide alternative food and income.

The sustainability of the project will be supported by :i) emphasizing the active participation of communities in the implementation and management of project interventions; ii) strengthening institutional and technical capacity at regional and community levels to ensure stakeholders have adequate knowledge and skills to maintain the benefits of the project interventions; iii) training communities extensively on climate-resilient agricultural techniques, rainwater harvesting, climate-resilient construction and locally appropriate climate independent livelihood options; and iv) raising awareness on climate change and climate change adaptation amongst local community members, governments and other stakeholders v) proper coordination, the government will work towards integrating these models into national budgets or any new investments for replication and scaling up. Project interventions have been designed to incorporate both capacity building and physical interventions. All physical interventions have included considerations of sustainability beyond the end of the project funding cycle. The concrete measures to ensure the sustainability of each of these physical interventions after the project ends are as follow:

- **Activity 1.1.1:** To maintain and sustain the installation of 18 automatic weather stations and 150 rain gauges; 10 hydrological stations, the project will partner with SODEXAM which is the National Met Agency to procure, install and maintain these infrastructures. The CIEWS infrastructures will be part of SODEXAM properties and the Met agency will ensure that similar equipment is acquired when covering other regions from their own budget or with the support of partners. SODEXAM will use visual or appropriate testing tools to diagnose malfunctioning equipment, assist in maintaining accountability of all parts of the system and in the requisitioning of supplies and spare parts, process and pack systems components for storage and/or deployment. Met agents will receive capacity building under Output 3.1 to maintain the infrastructures and its exploitation beyond the project lifecycle. The collaboration with the Telecom Company will allow SODEXAM to continue collecting, analyzing and disseminating the climate information to farmers for use after the end of the project. The project will constitute Operation and Maintenance committees. Their duties will include quarterly report to the SODEXAM on the state of the CIEWS infrastructure. With regard to climate information, SODEXAM will benefit from additional climate infrastructures to increase the density of its network and develop a service to farmer telecom operator platforms. This will allow to country to improve its CIEWS infrastructures
- **Activity 1.1.2:** By training 10 national meteorological experts on impact-based forecasting methodologies, data collection and interpretation, they will be able to maintain the CIEWS
- **Activity 1.1.3.** The dissemination of local climate summary information and trends to local cocoa, cassava, rice producers in support of their CSA adaptation actions will be done in collaboration with local partners, farmer's organization and extension services. By using existing networks, the project will be able to sustain the work after the project duration.
- **Activity 1.1.4.** Through the collaboration with SODEXAM, hazard monitoring and early warning services including weather and hydrological monitoring will be included as an integral component of agricultural advisories. Additional partnerships under activity 1.1.5. between SODEXAM and Telecom companies will create a long term and real-time dissemination of weather information through digital platforms and SMS to cooperatives and extension services. These collaborations

with existing networks such as from ANADER and ANOPACI will ensure the future sustainability of the project.

180. For the construction climate information systems infrastructures for farmers to have reliable and robust climate information to inform cropping calendar, early warning and responses and programming and planning on the tree crops (Output 1.1): The project will partner with SODEXAM which is the National Met Agency to procure, install and maintain these infrastructures. The CIEWS infrastructure will be part of SODEXAM properties and the met agency will ensure that similar equipment is acquired when covering other region from their own budget or with the support of partners. SODEXAM will use visual or appropriate testing tools to diagnose malfunctioning equipment, assist in maintaining accountability of all parts of the system and in the requisitioning of supplies and spare parts, process and pack systems components for storage and/or deployment. Met agents will receive capacity building under Output 3.1 to maintain the infrastructures and its exploitation beyond the project lifecycle. The collaboration with the Telecom Company will allow SODEXAM to continue collecting, analyzing and disseminating the climate information to farmers for use after the end of the project. The project will constitute Operation and Maintenance committees. Their duties will include quarterly report to the SODEXAM on the state of the CIEWS infrastructure. With regard to climate information, SODEXAM will benefit from additional climate infrastructure to increase the density of its network and develop a service to farmers' telecom operator platforms. This will allow to country to improve its CIEWS infrastructures

For Activity 2.2.1. Establishment of a network of demo plots to demonstrate best reforestation and agroforestry techniques.

181. The activity will be maintained beyond the project period by household members who will be trained on the appropriate maintenance techniques by the extension agents in the community who will be trained under the same output on maintenance and organizing exchanges visits amongst the farmers to learn and replicate within the community. The extension agents will be supported and trained by technical agencies such as SODEFOR and ANADER with technical backstopping and assistance from FAO
182. The project will partner with the cooperatives and the selected Farmers Field Schools to ensure ownership, constant learning and sustainability. At the institutional level, local authorities and governments representatives receiving trainings under Output 1.2 and Output 3.1 will integrate the demo plots models into their local plan and budgeting and propose it for replication into any new upcoming projects in the areas including with development partners.

Activity 2.2.2. Develop of a catalogue of good practice and trainings to for 5000 cocoa farmers

The catalogue of good practice represents a tool to guide the rehabilitation/reconversion of about 6,000 ha of overaged or affected by disease plantations, a competitive selection of relevant cocoa farms will be undertaken. Beyond the project, the tool will be used to inform other farmers that want to engage on sustainable cocoa production using the cost effectiveness, investments requested to transition to the new agricultural model as well as the compensation payments for such transitions. 5000 cocoa farmers will be invited, through farmer field school sessions, to gain knowledge of selected innovations in the context of a progressive transition towards more sustainable and resilient agroforestry plantations. With the skills and knowledge received, they will be able to sustain and maintain this type of production. National partners (e.g. FIRCA, CNRA, ANADER, SODEFOR, NGOs, private sector etc.) will support the adoption of these innovations through their existing programmes and interventions which have already identified good practices to be scaled up.

To sustain the initiative on Green certification programs with a traceability of green cocoa production and marketing from plantation to export points, the project will collaborate with the

Conseil Café Cacao, the International Cocoa Organization which the HQ is in Abidjan, the Ministry of Agriculture will continue to update and maintain its certification to meet international standards.

183. Intervention #2: Rice value Chain

During the preparatory and consultation phase, in the design of this project, it appeared that most potential recipients are facing challenges in particular for rainfed rice production. The limited mechanisation and irrigation infrastructure is hampering the capacity of farmers to benefit from rice production. Another challenge was the limited access to improved varieties tolerant to climate stress from research centers like CNRA, ADERIZ and AfricaRice. However, it was noted that most rice production units benefited from a large amount of labour forces that would need to be considered. Therefore, when considering climate adaptation interventions in the rice sector,

The Sustainable Rice Intensification (SRI) method appeared to be the most suitable innovation to be promoted to address adaptation challenges in the Bandama region. The SRI as a knowledge-based methodology increases the productivity and resilience of rice, and more recently also of other crops. Its simple changes of agronomic practices were assembled in close collaboration with farmers during the 1970s-80s in Madagascar. Since 2000, SRI has been spreading to other countries, and today we estimate that more than 10 million farmers are benefiting from the application of this methodology. The project will support the scaling up on this technique which will be facilitated at large scale with the support of CNRA, ADERIZ and AfricaRice. Local producers will be trained on SRI and should be able beyond the project duration to modify management of rice plants, soil, water and nutrients to improve growth environments, farmers can get higher-yielding, more vigorous and resilient plants nurtured by larger root systems and greater diversity/abundance of beneficial soil organisms. By adopting SRI, more productive phenotypes will be made to enhance farmers' income and security while reducing their costs and water requirements.

Good training of extension staff will contribute to a better adoption and implementation of SRI practices. Well-trained and motivated extension staff will make a huge difference in impact when working with farmers. Staff should focus on experimenting and learning together with farmers. In terms of implementation, the focus will primarily be targeted to rice cooperatives benefitting from sufficient planting surface and with sufficient labour forces to sustain the SRI methodology.

For future projects in the country, SRI could inform the list of innovations identified in the formulation of any future project such as on water, weed, pest, fertilizer and compost management. Therefore, the SRI interventions will also benefit from the adoption of specific technologies from the innovation catalogue. In terms of implementation, the focus will primarily be targeted to rice cooperatives benefitting from sufficient planting surface and with sufficient labour forces to sustain the SRI methodology.

With regards to technical implementation and taking into consideration that the SRI isn't widely implemented in Côte d'Ivoire, a training of trainers will be organized for major extension services such as FIRCA, CNRA, ANADER, ADERIZ but also local NGOs willing to participate. Similar training for recipients will be explored. 5,000 rice producers will be targeted and should be able to sustain the work after the project ends.

184. The project will also move beneficiaries from shifting cultivation on the upland where they have experienced hard labor and low yield year after year to the lowland where rice production will be intensified and yield increase greater than upland systems the same size of farm.

185. **Intervention #3: Cassava value Chain:**

As market demand grows in Côte d'Ivoire, many smallholder cassava growers already practice three key "Save and Grow" recommendations: reduced or zero tillage, protecting the soil surface with organic cover, and crop diversification. FAO's "Save and Grow" farming model seeks to limit mechanical disturbance of the soil by minimizing the ploughing, harrowing or hoeing of land.

Under this project, cassava growers will be encouraged to adopt minimum tillage and, ideally, zero tillage, especially on well-aggregated, friable soils with adequate levels of organic matter. Even where conservation tillage produces lower yields, it offers farmers economic advantages: reduced spending on the fuel/labour and equipment needed for conventional tillage, and the opportunity to produce cassava more intensively and sustainably, without the need for high levels of external inputs. In "Save and Grow", farmers are encouraged to cultivate a wider range of plant species in associations, sequences and rotations that may include trees, shrubs and pastures. Mixed cropping diversifies production, which helps farmers to reduce risk, respond to changes in market demand and adapt to external shocks, including climate change. Rotating or associating nutrient-demanding crops with soil-enriching legumes, and shallow-rooting crops with deep-rooting ones, maintains soil fertility and crop productivity and interrupts the transmission of crop-specific pests and diseases.

Higher-yielding varieties with resistance or tolerance to biotic and abiotic stresses are available in Côte d'Ivoire (e.g. CNRA etc.) and are contributing to substantial increases in cassava yields. The availability and use of high quality planting materials that maintain genetic purity and are free of diseases and pathogens are crucial to intensified cassava production and some institutions in Côte d'Ivoire are well positioned to play an active role in this regard (e.g. CNRA, IITA, CIAT etc.).

Low-input production systems incorporating key "Save and Grow" practices, such as reduced tillage, the use of cover crops and mulches, and mixed cropping is a production model that could be promoted in the Banbama region. Extension services will be crucial in building on those practices by ensuring access to relevant knowledge from the innovation catalogue and linking it to the wealth of knowledge held by smallholders. Cassava growers may need incentives to manage ecosystem services such as soil conservation and protection of biodiversity as an integral part of the methodology. Study also shows that mixing cassava with a diverse group of intercrops largely benefited ecosystem services – pest suppression, disease control, soil and water services, and land productivity – and these effects were detected across very different locations and farming systems.

To sustain the "Save and Grow" strategies in cassava, a particular attention will be put to inter-cropping with other plants such as groundnuts, grass family, grain legumes, banana or trees. Such approach is more suitable to small households in the Banbama region since it will focus on low-inputs and inter-cropping making cassava a more cost-effective investment compared to other commodities.

To sustain this techniques at local and regional level, the project will work closely with the relevant extension services such as from ANADER to train 5,600 cassava producers in the adoption of a "Save and Grow" approach. By doing so, the program will be able to sustain this sustainable and adaptation techniques at

186. The project will provide alternatives for intercropping practiced and agro forestry with cassava combined with cocoa, rice and other crops by farmers on the upland with utilization of swamp margins to produce crops that farmers plant in upland but also to restore degraded and abandoned land in buffer zones which with tree crop will restore the forest cover in few years. Farmers could then eat and market these tree and staple crops (rice and cassava). Combined with the fishery value chains, this bring additional at the same time income and improves food

security and nutrition in the households. During rehabilitation, cocoa farmers will intercrop cocoa with cassava, rice and other crops as other sources of income and food for households.

187. Knowledge and skills acquired by rural farmers, farmers organizations, fishermen, extension services, met agents is something that can never be taken away from them. The benefits they accrue from applying climate smart skill and knowledge will serve as motivating factor for sustaining rice, cassava and cocoa production under changing climate
188. Youth and women entrepreneurs and organizations fishery production activities will result in improvement of livelihoods thus serve as motivating factor for continuation of their business activities. They will earn additional incomes from sale of manure to rice and cassava farmers for the vegetable production. With diversified activities, they will be able to access to credit with their income and saving, invest and expand their businesses beyond the project ends
- The renewable energy nano-grids solar systems for irrigation will be maintained beyond the project period by the community groups/ cooperatives that trained on operation and maintenance under output 1.2. Financing for the continued operation and maintenance will come from a small fee collected from the participating households and members of the cooperatives ,
 - Scaling up of demonstration plots and best practices at government level: Under Output 3.1, the project will train government official on the use of climate information use for strategic planning programming and investment. These experiences and subprojects will be integrated into the national and local plans, local investment plans and proposed to other development partners for integration into new upcoming projects in the region and beyond. Functional cross sector coordination mechanism will be established between the line ministries, local authorities, smallholder farmers.
189. Smallholder rice producers are cognizant of the drudgery of labor associated with shifting cultivation such as preparing new site each cropping year, weeding and protection of crops from rodents and birds. The project will move beneficiaries from shifting cultivation on the upland where they have experienced hard labor and low yield year after year to the lowland where rice production will be intensified and yield increase greater than upland systems the same size of farm.
190. The project will provide alternatives for intercropping and agro-forestry practices with cassava intercropped with cocoa, rice and other crops by farmers on the upland with utilization of swamp margins to produce crops that farmers plant in upland but also to restore degraded and abandoned land in buffer zones which with tree crop will restore the forest cover in few years. Farmers could then eat and market these tree and staple crops (rice and cassava). Combined with the fishery value chains, this brings additional income and improves food security and nutrition in the households. During rehabilitation, cocoa farmers will intercrop cocoa with cassava, rice and other crops as other sources of income and food for households.
191. Knowledge and skills acquired by rural farmers, farmer organizations, fishermen, extension services, met agents are something that can never be taken away from them. The benefits they accrue from applying climate smart skill and knowledge will serve as motivating factor for sustaining rice, cassava and cocoa production under changing climate
192. Youth and women entrepreneurs and organizations. Fishery production activities will result in improvement of livelihoods thus serve as motivating factor for continuation of their business activities. They will earn additional incomes from sale of manure to rice and cassava farmers for the vegetable production. With diversified activities, they will be able to access to credit with their income and saving, invest and expand their businesses beyond the project ends
193. Overall the sustainability will depends on i) the financial and economic profitability of proposed investments; (ii) strengthened public institutions; (iii) better equipped women and young cocoa, rice and cassava producers and training institutions; (iv) empowered and autonomous

farmers' organizations such as women and youth organization on integrated climate resilient agriculture, cocoa, cassava and rice producers and cooperatives at all levels that build the communities' sense of ownership (v) sustainable and well-managed CIEWS infrastructure by Met agents and also communities and Farmers Organizations; (vii) promotion of a more structured approach to value chain support.

K. ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

194. As part of the project design, a preliminary screening and scoping risk assessment was developed against AF principles to assess environmental and social impact risks as well as a risk assessment dictated by the countries policies. These assessments are documented in the Environmental and Social Management Plan (ESMP) in section C Part 3 of this document and the Environmental and Social Management Framework (ESMF) of the project provided as **Annex 1**. The ESMP is focused on process-oriented risk management where mechanisms are built into programme implementation to ensure that rigorous risk assessment and management measures will be applied to all component activities including unidentified sub-projects in each of the component.

All activities are known and listed under the components at the various steps of project implementation they will be screened against the 15 principles of AF. The checklist attempts to apply the 15 Principles to a national context in a way that will be easily understood by project partners and beneficiaries alike.

195. Table provides an overview of the assessment against AF principles and the principles that require further assessment and management are discussed in more detail

Following the IFAD Social Environment and Climate Assessment Procedures the project was categorized as category “B”, moderate based on the aspects identified in the table below. An ESMF has been prepared to ensure that all risks are managed properly and therefore mitigated. See Annex for ESMF. . A detailed description of risks and mitigation measures is included in section C.

Table 4: Initial ESP Screening Checklist for compliance with the Environmental and Social Principles

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>	x	
<i>Access and Equity</i>		x
<i>Marginalized and Vulnerable Groups</i>		x
<i>Human Rights</i>	x	
<i>Gender Equity and Women's Empowerment</i>		x
<i>Core Labour Rights</i>	x	
<i>Indigenous Peoples</i>	x	
<i>Involuntary Resettlement</i>	x	
<i>Protection of Natural Habitats</i>		x
<i>Conservation of Biological Diversity</i>		x
<i>Climate Change</i>		x
<i>Pollution Prevention and Resource Efficiency</i>	x	

<i>Public Health</i>		x
<i>Physical and Cultural Heritage</i>	x	
<i>Lands and Soil Conservation</i>		x

A. IMPLEMENTATION ARRANGEMENTS

Describe the arrangements for project / programme implementation

196. **Approach.** The project's approaches, actions, modes of organization and implementation will apply a general principle of subsidiarity promoting decision-making processes as close as possible to the action at different levels: (i) geographical, the project targets primarily the most "local" geographical scales (village, commune, province) and their link with the regional and national scales; (ii) institutional; (iii) project management (delegate project implementation to direct users when possible, support of national government entities when needed and technical support of FAO, UNDP, IFAD); (iv) knowledge management, by strengthening local capacities and knowledge sharing, and cross-sectoral coordination and transfers.
197. The institutions involved in the implementation of the Project include on one hand administrative structures at the central level and decentralized structures and on the other hand steering, consultation, coordination, execution and monitoring bodies. The implementation of the Project will be ensured by the Ministry of Environment and Sustainable Development (MINEDD) in collaboration with ministries and technical structures such as the Ministry of Agriculture and Rural Development (MINADER), Ministry of Water and Forests (MINEF), Ministry of Rice Promotion (MPR), the Airport, Aeronautical and Meteorological Operating and Development Company (SODEXAM), Regional Committees made up of technical advisers from the regions of Bélier, Gbêkê and Marahoué, local elected representatives (Regional and Municipal Councils) as well as representatives of local communities
198. **General Organization (Figure 20):** The Republic of Côte d'Ivoire will receive funding from the Adaptation Fund (AF) through the International Fund for Agricultural Development (IFAD). Through MINEDD, the Republic of Côte d'Ivoire will be the executing entity in coordination with MINADER and MPR while IFAD will be the implementing entity accredited by AF Board to receive direct financial transfers from the Fund as well as the monitoring and supervision entity during the implementation of the project by the executing entity. The Food and Agriculture Organization of the United Nations (FAO) and United Nations Development Programme (UNDP) will be other Implementing Partners (IP).
199. MINEDD is the only executing entity in coordination with MINADER. Collaborations will be set up with the National Agency for Support to Rural Development (ANADER), SODEXAM, the Agency for Rice Development in Côte d'Ivoire (ADERIZ) and NGOs with proven experience on sustainable agroforestry focused on cocoa, rice and cassava.
200. **The National Steering Committee (NSC)** will define the orientations for the operational steering of the project, ensuring its alignment with sectoral strategies and priorities. It will integrate the project's action in complementarity and synergy with development partners in the agricultural sector in order to optimize its interventions and maximize its impact on the beneficiaries. In addition to approving the project annual work plan and budgets (AWPB) and activity reports, the NSC will monitor implementation and make recommendations during its monitoring missions in the field. The NSC will be composed by the Ministry of the Environment and Sustainable Development; Ministry of Agriculture and Rural Development; Ministry of Water and Forest; Ministry of Plan and Development; Ministry of Economy and Finance; Ministry of Territorial Administration and Decentralization; Ministry of Rice; Ministry of Hydraulics; Ministry of Women, Family and Children; National Observatory for Equity and Gender; Côte d'Ivoire Chamber of Commerce and Industry; General Confederation of Enterprises of Côte d'Ivoire; Assembly of Districts and Regions of Côte d'Ivoire and the Adaptation National Focal Point.

201. **Technical Committee:** National Climate Change Program (PNCC); Directorate for the Fight against Climate Change (DLCC); General Directorate of Rural Development and Water Control in the agricultural sector (DGDRME) at MINADER; SODEXAM; Directorate of Planning, Studies, and Statistics at MINEED; Directorate of Protection of Water Resources and Water Resources Management at MINEF; Department of Hydrology at the Ministry of Hydraulics; the Permanent REDD+ Executive Secretariat (SEP-REDD+); General Directorate of Decentralization and Local Development (DGDDL); ONEG; Department of Gender and Equity at the Ministry of Women, Family and Children; the National Platform for Risk Reduction and Disaster Management (PF-RRC); Rural Land Agency (AFOR); Coffee and Cocoa Council (CCC) and Interprofessional Fund for Agricultural Research and Advice (FIRCA) .
202. **Regional advisory committees:** At local level, the project will benefit from the support of the regional advisory committees made up of a technical referent from the 3 selected regions (Belier, Marakoué, Gbeke).

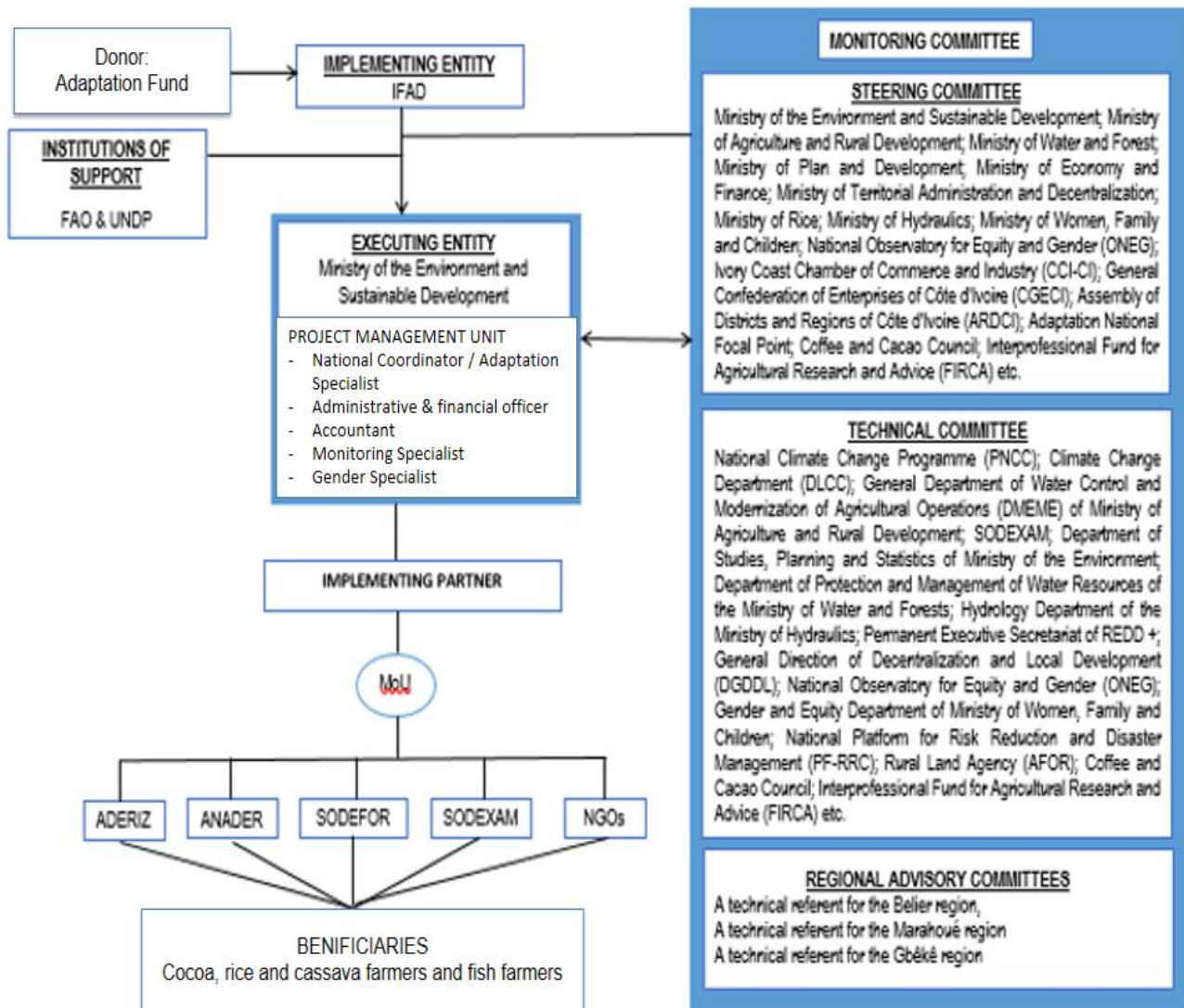


Figure 20: Schematic diagram of the project implementation organizational chart

203. The overall management of the project will be under the responsibility of The Republic of Côte d'Ivoire, through its Ministry of the Environment and Sustainable Development (MINEDD). MINEDD will set up the Project Management Unit (PMU) which will be in charge of the daily management of the project and will be hosted in Bouake in the offices of the IFAD PADFA project. The PMU will be composed of a National Coordinator, an Administrative and Financial Officer, an Accounting Assistant, a Procurement Controller, and an M&E Officer. The PMU will be responsible and accountable to the Government and IFAD for the efficient use of project resources in compliance with the IFAD and AF procedures and guidelines. The PMU staff will be recruited competitively at national level, in compliance with IFAD's procurement procedures, and in accordance with the AF Gender Policy. Women candidates will be encouraged. The establishment and operationalization of the PMU at MINEDD will be facilitated by the presence of the IFAD Country Office and by the synergies established between the AF project and IFAD funded project PAPFA, which will be able to provide or call upon expertise in institutional development if necessary. IFAD will report to the AF on the overall management and performance of the Project.
204. The overall management of the project will be under the responsibility of The Republic of Côte d'Ivoire, through its Ministry of the Environment and Sustainable Development (MINEDD). MINEDD will set up the Project Management Unit (PMU) which will be in charge of the daily management of the project and will be hosted in Bouake in the offices of the IFAD PADFA project. The PMU will be composed of a National Coordinator, an Administrative and Financial Officer, an Accounting Assistant, a Procurement Controller, and an M&E Officer. The PMU will be responsible and accountable to the Government and IFAD for the efficient use of project resources in compliance with the IFAD and AF procedures and guidelines. The PMU staff will be recruited competitively at national level, in compliance with IFAD's procurement procedures, and in accordance with the AF Gender Policy. Women candidates will be encouraged. The establishment and operationalization of the PMU at MINEDD will be facilitated by the presence of the IFAD Country Office and by the synergies established between the AF project and IFAD funded project PAPFA, which will be able to provide or call upon expertise in institutional development if necessary. IFAD will report to the AF on the overall management and performance of the Project.
205. The PMU will consistently ensure proper financial management practices. Costing prepared by the project will take into consideration all elements of the project activities including project management and local partners' activities and administrative costs. The PMU will release project funds on the basis of benchmarks throughout the life of the project. A financial system will be established to monitor and control disbursement and expenditure of the project.
206. The PMU will remain cautious of this and monitor the quantity and quality of procurements. The PMU will encourage the preparation of quarterly cash flows showing benchmarks for amount stipulated in the project.
207. The PMU will establish the project account in a reputable local bank in Abidjan with three signatories necessary for payment, the Coordinator of the PMU, Deputy Minister of Administration and the Project Controller. This Account will be operated and replenished following the Imprest Account mechanism. Disbursement may include direct payments and replenishments of the account, in line with the disbursement handbook for IFAD directly supervised projects. The Controller will develop a petty cash control and management system and set ceiling on petty cash.
208. The PMU will establish the project account in a reputable local bank in Abidjan with three signatories necessary for payment, the Coordinator of the PMU, Deputy Minister of Administration and the Project Controller. This Account will be operated and replenished following the Imprest Account mechanism. Disbursement may include direct payments and replenishments of the account, in line with the disbursement handbook for IFAD directly supervised projects. The Controller will develop a petty cash control and management system and set ceiling on petty cash.
209. Where and when necessary for the interest of beneficiaries, PMU will seek approval for budget realignment within the percentage provided for in the project financial policy. PMU will submit quarterly project performance reports to IFAD and each will be complete with standard financial component according to the donor's standards. MOUs will be established with implementing partners such as SODEXAM, Africa Rica, Cocoa Board, UNDP, FAO, sector

ministries and outline the activities that IPs will be directly responsible for. The PMU will consult implementing partners in drafting of technical specifications and ToRs while the final responsibility for the procurement process lie with the PMU. Each MoU will specify agreed disbursement arrangements with implementing partners and all the needed reporting and supporting documentation for the justification of expenditures incurred within its framework. Disbursement will always be made in several tranches based on an annual activity budgets and the release of tranche will be conditional to the justification of the previous one.

210. PMU will facilitate annual audits of the project financial statements. Annual audits will be performed on the basis of the terms of reference that will be submitted to IFAD for approval. The Audit report will be submitted to IFAD and AF within 6 months after the end of each fiscal year. IFAD will review the report, submit to the Executing agency an action plan to address the eventual weaknesses highlighted in the report and monitor the implementation of this action plan.
211. The project, with the support of IFAD and specialized consultants will draft an operation manual together with an administrative and financial manual that will explicit all the accounting, internal control and operation procedures that the project will follow during its implementation period. This manuals will be submitted to IFAD for non-objection before the project will receive its first disbursement.
212. The project will also acquire and install an accounting software that will be able to automatically produce all the financial reporting required by IFAD and the Fund. The access to the accounting software will be defined in order to respect an acceptable level of segregation of duties. The purchase and set-up of the accounting software will also constitute a condition to first disbursement.

1.1. Pre-Implementation Phase

213. The project development will be informed by baseline data and social, economic and environmental analysis. The Project Implementation Management (PMU) within the Ministry of Agriculture and Rural Development and in coordination with the Ministry of Environment will hire a consultant to collect baseline data for monitoring and evaluation of the project performance throughout the implementation of the project.
214. The baseline data will be used as a yardstick for measuring the performance of the project and to inform project management decisions. The baseline data will also inform target setting and development of indicators and Log frame for the project.
215. The PMU will ensure that the project is social friend and gender sensitive. As such, a consultant will be hired to conduct social and gender analysis of the project communities and make recommendations for the inclusion of men, women and youth regardless of economic status, social background, and religion. This will make the project inclusive and help to maintain the fragile peace.
216. The PMU will hire a consultant to conduct an economic analysis of the project to ensure that economic issues of smallholders are identified and address in the project design. While activities are proposed in this concept note, the full proposal will integrate findings from these analysis and recommendations to modify the proposed interventions.
217. In this AF project development process, the environmental, social and economic impact assessment mentioned above will identify various potential impacts and recommend risk management and mitigation process as well as the responsible executing agencies and expert personnel.

1.2. Coordination and stakeholders consultative meeting

218. The PMU of MINEDD will be the lead implementation agency in close collaboration with the SODEXAM and other line ministries, FAO, UNDP and IFAD. There will be monthly coordination meetings for information sharing on progress made and challenges that will emerge during the project implementation to provide forum for formulating joint solutions to problems.

219. The PMU will organize quarterly stakeholder consultative dialogue about the direction of the project relative to achievement of desired results and to share feedbacks from key stakeholders in the agriculture sector. Key stakeholders include both public and private sector actors.

1.3. Targeting communities and beneficiaries

220. Over the last two decades, the GoCIV and development partners have continued to work with smallholder cassava, cocoa and rice producers. If this project will address smallholder real farming issues and take them to the next level of the social ladder, targeting has to be done selectively to make sure that those in real needs and potential to graduate from abject poverty are reached in a significant way.

221. The PMU will collaborate with local partners to identify cocoa, rice and cassava farmers and poultry producers. Criteria for selecting project specific communities will be informed by results of the social and economic analysis and be used to target deserving beneficiaries.

222. Targeting will entail assessing random samples of farmers' farms conditions to determine the status of agronomic practices, clones and varieties of existing and specific technical assistance that they need to increase production.

1.4. Local partners mapping and capacity assessment and training

223. The key partners to the project include vulnerable communities and their leaderships to promote ownership and sustainability of the adaptation interventions, environmental agency, ministry of youths and women and local implementing partners (to be selected on competitive basis on their experience working in the cassava, cocoa and rice sectors).

224. For this project, PMU will reassess the capacities to determine their level of knowledge and skill implementing climate smart agriculture activities.

225. These partners have experience in conducting farmers' field school activities which will be core to the strategy for transferring climate smart skills and knowledge to farmers.

1.5. Private Sector Engagement

226. To ensure that the private sector is properly engaged, the project will explore opportunities to establish partnerships with these entities where they become off-takers in the cassava, cocoa and rice value chains arrangements for the farmers.

227. To ensure that the farmers' interests are protected, the MOUs will be jointly developed by the private partners and the farmers with close supervision by the PMU. This action will ensure that the private partners do not impose predetermined prices on the farmers; issues about commodity rejection due to standard issues and commodity aggregation will also be addressed to ensure that the farmer's only burden will be to produce quality cassava stems, tubers, cocoa beans and rice paddy.

228. In addition, the major private sector players were part of the consultation meetings held. While they indicated their interests to work with the farmers in the capacity of off-takers, they expressed concern over the need to build the capacity of more farmers to maintain quality of the products. Table shows Role and Responsibilities of project implementing partners per project output/ activities.

Table 15: Role and Responsibilities of project implementing partners per project output/ Activities

Outputs	Activities	Responsibility
Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.		
	Acquiring 18 automatic weather stations and 150 rain gauges	MINEDD

Output 1.1: Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.	Capacity building of SODEXAM in 18 automatic weather stations and 150 rain gauges	MINEDD
	Visiting and identification of areas installation of weather stations and rain gauges	MINEDD & SODEXAM
	Installation of 18 automatic weather stations; 150 rain gauges	Firm recruited and SODEXAM
	Upgrading and rehabilitation of existing 10 hydrological stations (automatic stage recorders) and its specialized hydrological equipment (acoustic doppler current profiler, bathymetric instruments...) Bandama Rivers and small flood-prone watersheds.	SODEXAM
	Systematically collecting data and undertaking risk assessments Improvement on crop modelling and assessment of climate vulnerability	SODEXAM
	Production of Weather reports for producers	SODEXAM
	Identification of local radios for the dissemination of local climate information	MINEDD and SODEXAM
	Dissemination of local climate information to local cocoa, cassava, rice producers specifically for droughts, floods and humidity.	SODEXAM and Local radios
	Develop hazard monitoring and early warning services including weather and hydrological monitoring equipment, improving forecast capabilities and the use of the CIEWS within agricultural advisories, drought and flood risks monitoring	SODEXAM
	Development of digital platforms for dissemination of local climate information	MINEDD
	Facilitate the collaboration between SODEXAM and Telecom companies to disseminate weather climate information through digital platforms and sms to cooperatives and extension services for cropping calendar and planning	MINEDD
Output 1.2: Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks	Training of some local radios for the dissemination of local climate information	
	Training of 15,600 smallholder farmers on the timely dissemination of early warning products (including agro-climatic information)	MINEDD and SODEXAM
	Raising awareness among 15,600 smallholder farmers on the best climate adaptation/mitigation practices/technologies in agriculture	MINEDD, SODEXAM, ANADER and MINADER
	Training of 150 extension agents on climate resilient agriculture	MINEDD, SODEXAM, ANADER and MINADER
	Development of a capacity-building program for government authorities	MINEDD
	Capacity-building programs for government authorities to support decision making and local contingency planning, regulatory bodies	MINEDD
	Build national and rural communities response capabilities to effectively when warnings are received, access to property rights and control over assets	MINEDD/ Ministry of Gender
Component 2: Climate-proofed agricultural production and post-harvest combined with livelihood diversification		
Output 2.1: Best available	Establishment of demo plots to demonstrate best reforestation and agro forestry techniques	MINEF

technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.	Development of cocoa farms, which include resilient practices such as vulnerability-informed land use, tree shading and agroforestry.	International Cocoa organization and MINEF
	Uprooting and rehabilitation/reconversion of about 6000 ha of overaged or affected by disease plantations, with full compensation paid to producers	International Cocoa organization and MINEF
	Dissemination of local climate information to local cocoa producers specifically for droughts, floods and humidity. The project will strengthen the network of agrometeorological stations with the installation of 18 automatic weather stations and 10 hydrological stations. The project will also leverage climate information for cropping calendars.	International Cocoa organization and MINEF
	Improvement on crop modelling and assessment of climate vulnerability	International Cocoa organization and MINEF
	Use of modern technologies with a particular focus on solar based pumping systems, solar based post-harvest processing equipment to attract more youth in agriculture	International Cocoa organization and MINEF
	Facilitating farmers' access to improved climate friendly cocoa and rice production technologies and farming systems	International Cocoa organization and Africa Rice
	Improving cocoa and rice research system through partnership with the cocoa board the international cocoa organization, relevant international centres and the private sector	MINEDD
	strengthening the overall production performance of rice and cocoa through sustainable monitoring and evaluation systems, including a Grievance Redress Mechanism (GRM) to monitor development and compliance with environmental and social safeguards	International Cocoa organization and Africa Rice
	Development of credible certification programs and promotion of cocoa and rice production for niche markets through the development of specific geographically-based production	International Cocoa organization and Africa Rice
	Establishment of cocoa and rice dedicated logistics platforms in the selected intervention areas	International Cocoa organization and Africa Rice
	Training programs to develop the technical and managerial skills necessary to support the promotion of competitive processing by small and medium-scale entrepreneurs (including cooperatives).	International Cocoa organization and Africa Rice
	Review of the traceability of cocoa production and marketing, from plantations to export points	International Cocoa organization and Africa Rice
	Strengthen of cocoa and rice cooperatives and support to establishing Cocoa Inter-profession, with a genuine public-private partnership that will ensure producers, private sector and civil society participation in the management of the sector	International Cocoa organization and Africa Rice

	Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)	Africa Rice
	Expanding the System of Rice Intensification (SRI)	Africa Rice
	Support to MOA to run Farmer Field Schools and provide other technical support.	Africa Rice and MPR
	Capacity building in modern composting techniques to reduce/prevent movement of farms to fallow land in secondary cropping years	Africa Rice and MPR
	Boreholes irrigation schemes, to cope with the consequences of drought and heat extreme events, boreholes will be rehabilitated and irrigation schemes will be deployed.	Africa Rice and MPR
	Development of new Inland Valley Swamps for rice production to increase the production of smallholder farmers and diversify and expand their revenue sources.	Africa Rice and MPR
	Wet-season valley bottom water control cascaded dykes	Africa Rice and MPR
	Micro-catchment water runoff control dykes	Africa Rice and MPR
	Construction or consolidation of structures for gravity irrigation serving 4,000 producers	Africa Rice and MPR
	Watershed rehabilitation, water efficiency and management,	Africa Rice and MPR
	Training and extension and infrastructure rehabilitation and construction including drainage systems	Africa Rice and MPR
	An assessment of the impact of cassava production on rural livelihoods as a climate change adaptation strategy	MINADER, Swiss Centre, SODEXAM and MINEDD
	Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)	CNRA, ANADER and MINADER
	Community mobilization and organizing to take up cassava as a climate smart cash crop and cooperative development as well and promotion of biogas technology using starch and waste,	Swiss Centre, ANADER and MINADER
	Support female farmers to engage in commercial cassava production (including training in sustainable cassava production, negotiating access to farmland, tractors)	Swiss Centre, ANADER and MINADER
	Conduct random control trails for rigorous testing and evaluation of the impact of cassava uptake on the resilience of female farmers and drought prone communities	Swiss Centre, ANADER, and MINADER
	Support cooperatives with processing units	ANADER and MINADER
	Support for the marketing of agricultural products and promotion of rural entrepreneurship	ANADER et CNRA
Output 2.2: Income-generating activities focusing on climate resilient fish farming on the	Construction of 20 earth dams less than 15m high for fish farming activities.	MH and MIRAH
	Establishment of fish farms, including the creation of value-chain services (fingerling, etc.).	MIRAH
	Training of farmers on Tilapia and Milkfish production	MIRAH
	Designing and construction of ponds/enclosures	MH and MIRAH
	Purchase and distribution of fingerlings to farmers	MIRAH

Bandana river basin, conservation, processing units, marketing) are promoted as livelihood diversification measures	Establishment and building capacity for fish farmers cooperative	MIRAH
Component 3: Institutional capacity building, policy engagement and knowledge management.		
Output 3.1: Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA,) in planning and better managing climate risk is strengthened	Strengthening of capacities of staff Ministry of Environment, Ministry of Agriculture, SODEXAM on climate change adaptation (Capacity building through technological enhancement, Training to enhance institutional capacity).	MINEDD and SODEXAM
	Strengthening of the Meteorological Department and local representation, including capacity building through technology enhancement and training to enhance institutional capacity.	MINEDD and SODEXAM
	Technical Assistance for improved policy frameworks to mainstream climate risks in into sectoral strategies and policies.	MINEDD and SODEXAM
Output 3.2: Activities are adequately coordinated, monitored and evaluated	Support to the development of Measurement Reporting and Verification system of climate response programmes.	MINEDD
	Support to the improved monitoring & evaluation and knowledge management activities, which will include; Additional baseline survey costs (related to climate change adaptation) and additional terminal survey costs (related to climate change adaptation).	MINEDD
	Project management and coordination, including the recruitment of Climate change adaptation specialist for the duration of the project and Staff training on adaptation-related issues.	MINEDD
	Production of knowledge management products like packages of practices, e-newsletters, interviews and success stories	MINEDD and SODEXAM
	Dissemination of Production of knowledge management products via online and offline channels.	MINEDD

B. RISK MANAGEMENT

Describe the measures for financial and project / programme risk management

Table 16: Project risk table

Risk	Initial risk assessment (H = high, M = moderate, L = low)	Proposed mitigation measure	Final risk assessment
Insufficient capacities to appropriately manage the day-to-day implementation of the project	M	<ul style="list-style-type: none"> - A National Country Programme Unit (NPCU) with administrative and financial management autonomy that assumes the fiduciary management functions of the project. - Recruitment of experts with specific experiences in development project management and financial management procedures of the lessors and mastery of an accounting software. - IFAD country office will participate as an observer in all stages of the recruitment process. - The staff of the NPCU will be linked to the project by renewable annual contracts based on a performance evaluation, - Start-up support takes into account training in financial management. 	L
The project budgeting process doesn't respect procedures and doesn't allow for a good implementation of project activities	M	<ul style="list-style-type: none"> - The budget preparation process will be carried out by the NPCU staff and the AWPB will then be submitted to the steering committee for approval. The AWPB will provide details of activities, their unit and overall costs, expected results and monitoring indicators, and their implementation modalities including procurement procedures. - The budgeting process will be defined in the project procedures manual, and should be harmonized with the budgeting process of other IFAD projects. - The approved AWPB must be entered into the accounting and financial management software to monitor its implementation. - Quarterly financial reports including information on budget monitoring should be submitted to the ministries of guardianship, steering committee and IFAD. 	L
Project financial flows and disbursement processes are not timely and jeopardize the implementation	M	<ul style="list-style-type: none"> - Availability of funds will be made through the standard circuit planned and already tested by other IFAD projects including replenishment of the designated account, direct payment and reimbursement. - The use of Certified Statement of Expenditures in support of expenses incurred by the Project is also planned. 	M

<p>of activities on the ground</p>		<p>- As regards the implementing partners and public services, the resources will be transferred in accordance with the signed agreements and service contracts, which will have to provide mechanisms for the provision of funds based on the work plan and budget of the convention/contract, and disbursements based on a quarterly / semi-annual report of the activities carried out by the beneficiary/provider/partner.</p>	
<p>Project implementation and financial management procedures do not guarantee sufficient transparency and accountability</p>	<p>H</p>	<p>- Three (3) levels of security ensure transparency and control of operations and also mitigate the risk of distortion and dysfunction related to management: (i) The fact that only one person cannot conduct an operation in its entirety (from beginning to end, from execution to final control); (ii) the implementation of accounting self-audits; (iii) Implementation of the IFAD Representation's proximity monitoring in Côte d'Ivoire and joint Government/IFAD support and supervision missions and an annual audit of the accounts.</p>	<p>L</p>
<p>The project accounting system and financial procedures are not sufficiently formalized</p>	<p>H</p>	<p>- The Project will be equipped with management software covering all financial aspects: accounting, commitment, financial statements, budget monitoring, contracts, etc. The staff will have to master the software in order to be able to correctly parameterize it to meet the needs of management. - The monitoring of financial commitments and financial achievements will be based on the use of accounting and financial management software as well as the production of financial dashboards for use by the NPCU, SC and IFAD. -The financial statements of the Project will be drafted according to the principles in force and by respecting the minimum information required by the lessor. -The annual financial statements of the Project for the year N will be established no later than the end of February of the year N + 1. The unaudited annual financial statements will be submitted to the SC and IFAD for review. -The Procedures Manual will provide a detailed phasing of all the stages leading to the closing of the accounts (monthly / quarterly / annual) and the preparation of the financial statements - The accounting system used in the framework of the Project should allow the registration of tax exemptions obtained from the government</p>	<p>L</p>

<p>The project financial procedures do not allow for proper and regular monitoring</p>	<p>M</p>	<p>Financial monitoring based on: a) regular preparation of withdrawal requests, based on rolling quarterly cash plans, and bank monitoring of the designated account and the account of operations; (b) budget monitoring; c) accounting monitoring; d) technical and economic monitoring provided by the administrative and financial officer b) The administrative and financial officer will prepare quarterly financial and accounting reports (interim financial reports) which he will submit to the Coordinator for signature and send for review to the Steering Committee and IFAD.</p>	<p>L</p>
<p>Current climate and seasonal variability and/or hazard events result in poor restoration results or agricultural yields.</p>	<p>H</p>	<p>Current climatic variability will be taken into account in the planning of activities along the value chains (rice, cassava and cocoa). Drought- and flood-resilient species will be used. Techniques to assist plant growth particularly in the seedling/sapling phases and to reduce risk of damage from climate change hazard impacts will be used. Species will be planted in appropriate seasons to reduce risk of hazard impact. Diversity in planted crops will reduce this risk, Diversification with farm fish and gardening</p>	<p>M to L</p>
<p>Loss of government support may result in lack of prioritisation of AF project activities</p>	<p>L</p>	<p>Regular stakeholder consultation and involvement will be undertaken to ensure that government maintains its commitment and considers the AF project as a support to its forestry and agriculture programmes.</p>	<p>L</p>
<p>Communities may not adopt activities during or after the AF project</p>	<p>M</p>	<p>The interventions will be institutionalised within The ministry to ensure sustainable delivery post project implementation. Capacity building and training of the communities will be undertaken to improve their awareness and understanding of the benefits of the activities.</p>	<p>L</p>
<p>Priority interventions implemented are not found to be cost-effective.</p>	<p>L</p>	<p>Cost-effectiveness is a core principle in the implementation of adaptation measures. Detailed information will be recorded regarding cost-effectiveness. This will be widely disseminated and will be of use to future adaptation initiative</p>	<p>L</p>

C. ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT

Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund

229. A preliminary environmental and social assessment was performed as part of the project design to ensure existing environment and social standards applicable to targeted community beneficiaries are taken into account in the context of the AF Principles. The assessment against the 15 principles and the identified mitigation measures are summarized below in Table :

Table 7: Detailed project screening overview with mitigation measures

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>	No appreciable risk	The project is in full compliance with the countries policies, standards and laws as the Environmental Protection Agency of Côte d'Ivoire has endorsed it. With an environmental risk category of "B", the project adheres to ensuring that all safeguards are in place to ensure that the activities of the investment do not exacerbate environmental degradation. During the implementation a monitoring of the adaptation intervention will be provided to continue to track alignment with national law.
<i>Access and Equity</i>	The beneficiaries of the proposed project are poor people in vulnerable communities who are often not integrated into decision-making processes. There is, therefore, a risk that certain community members may benefit more than others. This may result in both intra- and intercommunity conflicts.	While every household/ individual under the project area will have equal opportunity/access to project interventions, there is a very low risk that priority setting which will be done by the village institutions and interventions using the local and regional developmental plans and wealth ranking of households might not be done in an adequate manner hence preventing some households/individuals from benefiting from the project. IFAD targeting tools will be applied. This risk will be mitigated through the beneficiary selection approach, and the incorporation of community consultation for all interventions that do not achieve complete coverage of the target populations. Furthermore, both beneficiary and non-beneficiary communities will be sensitised towards the approach of prioritising the support from the proposed project to the most vulnerable communities. A grievance mechanism has also been developed to support any community members who feel they are experiencing discrimination.
<i>Marginalized and Vulnerable Groups</i>	There is a risk that vulnerable and marginalised groups will be excluded during the implementation of	The project target groups are poor smallholder farmers, fishermen women and rural youth (18 – 35 years) that are the most vulnerable to climate change living in Bandama basin and are considered a marginalized group. Through IFAD targeting approach and community

	project activities and have insufficient access to the associated benefits	consultation the most vulnerable groups, female and youth engaged in coco rice and cassava value chains will be included. Other mitigation measures for potential indirect beneficiaries are integrated through the value chain approach, capacity building and awareness raising
<i>Human Rights</i>	No activities are, or will be, included in the design of the proposed project that are not in line with established international human rights. Moreover, the proposed project will promote the fundamental human rights of access to food, water and information.	Côte d'Ivoire recognises fundamental human rights and freedom in its constitution that exist without discrimination by reason of race, national origin, colour, religion, opinion, belief, or sex. The project activities will not engage in any activity that may result in the infringement on the human rights of any person during implementation.
<i>Gender Equity and Women's Empowerment</i>	The proposed project is targeting communities where the gender gap is significant and men occupy the majority of the leadership positions. There is, therefore, a risk that women will not benefit equitably from the proposed project's climate change adaptation and capacity-building interventions	Although there are risks of social exclusion of women and youth due to limited access to land and low mobilization of women, the project has set some targets (45% women and youth). The activities are designed and implemented in such a way that both men and women have equal opportunities to participate in consultation, training and awareness activities; receive comparable social and economic benefits.
<i>Core Labour Rights</i>	No appreciable risk.	The project does not have any activity that poses a threat to the rights of the farmers. However, it will ensure that national working standards are observed on production sites and that appropriate wages are paid per assigned task; no child labour will be employed.
<i>Indigenous Peoples</i>	No appreciable risk.	According to the AF and IFAD definition of indigenous people no indigenous people have been listed in Côte d'Ivoire but the project will work to include minority groups in the project. At Inception Phase where various ethnic groups can be identified at project activity sites and their roles in the activity clearly identified.
<i>Involuntary Resettlement</i>	No appreciable risk.	During the project consultations the project confirmed that there is no risk in areas that conflict with the CIEWs infrastructure and other concrete agricultural production and land rehabilitation.
<i>Protection of Natural Habitats</i>	There is low risk that the project affects the Bandama basin/wetland with the removal of rice paddies and impact on natural	The project will not involve unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognised by the national government for their high conservation value, including as critical habitat; or (d) recognised as protected by traditional leaders and

	habitat during the rehabilitation of degraded land.	communities. All necessary assessments will be conducted before the rehabilitation of degraded land and the promotion of sustainable rice intensification will result to restoration and improved management and protection of natural habitat as well as ecosystem functions and services.
<i>Conservation of Biological Diversity</i>	There is a risk of biodiversity loss caused by bush fires and slash and burn agriculture which lead to biological diversity losses.	Clearing of lands and rehabilitation that lead to loss of biodiversity and deforestation through physically removing species will be avoided by this project. Intervention will happen at early in the planning process by prioritizing rehabilitation and use of abandoned lands, which will lead to the biodiversity restoration
<i>Climate Change</i>	There is a low to moderate risk of GHG emissions from rice paddies.	The project will not generate significant and / or unjustified increase in greenhouse gas emissions or any other cause of climate change. SRI will be promoted in the rice sector and Climate resilient cassava and cocoa value chain will contribute in avoiding and sequestering CO2. The climate and environment specialist engaged at inception and during the design and implementation of the programme, will monitor and manage clearing and burning (greenhouse gases) as an alternative and if required will be addressed early in the project.
<i>Pollution Prevention and Resource Efficiency</i>	No appreciable risk.	No mitigation measures necessary. However, the project will work to reduce waste generation and ensuring slash and burn, or release of pollutants into the environment is minimal. With the introduction of briquetting machines in the rice value chain, waste conversion will be demonstrated.
<i>Public Health</i>	There is risk under the COVID19 Context.	Promote social distancing and safe farming and sanitary measures in line with the national requirements to prevent the spread of COVID19.
<i>Physical and Cultural Heritage</i>	No appreciable risk.	No mitigation measures necessary.
<i>Lands and Soil Conservation</i>	Risk identified is related to land rehabilitation and use.	The project will ensure that all relevant environmental codes and standards will be followed during the implementation of the project. Deforestation and upland crop production might affect soil quality and conservation, as well as flooding, water logging, soil salinization and alkalization. Where land is to be modified for example farmlands that may cause soil erosion or deforestation, standards will be followed to maintain the land in its natural state or as close to its natural state as is possible; and, if land is to be converted, it must promote and protect its current function.

230. The environmental and social management plan (ESMP) developed as part of the project design includes more detailed information on identified potential environmental and social impacts, their significance, mitigation measures and responsible parties for ensuring the risks are monitored and mitigated as and if they materialize (see the Gender Assessment in a separate Annex that covers in more details mitigation measures to address social risks specifically These are:

Table 8: Environmental (incl. Climate Change) Management Plan and related Adaptation Fund's 15 Principles, including mitigation for environmental and social risks measures and responsible stakeholders

Environmental and social principles	Risks/Impacts identified	Possible measures to avoid, minimize, or mitigate environmental and social risks	Monitoring Indicators	Significance Rating (likelihood x consequence)	Period	Responsible for supervision	Cost
Compliance with the law	None	The project is in full compliance with the countries policies, standards and laws as the Environmental Protection Agency of Côte d'Ivoire has endorsed it. With an environmental risk category of "B", the project adheres to ensuring that all safeguards are in place to ensure that the activities of the investment do not exacerbate environmental degradation. During the implementation a monitoring of the adaptation intervention will be provided to continue to track alignment with national law.	Number of sites for which Environmental and social impact assessment document has been prepared according to the 15 principles of the Adaptation Funds ESP	No appreciable risk.	project life cycle	IFAD, Relevant government partners including UNDP and FAO, IFAD supervisions missions National Environmental Agency	Taken into account in the project see budget lines and related Outputs
Access and Equity	Elite capture and Biasness in allocating project benefits Lack of interest to participate in project activities	By design, the project has focused on the most vulnerable group of populations to climate change mainly youth, women. This in itself is a mitigation measure. Furthermore, beneficiaries have been disaggregated by gender during the design through IFAD targeting approach. The profile intends to produce socio, economic profile, which will assist in identifying the households towards which project activities support should be prioritized within the poor and vulnerable communities. Households and individuals will be sensitized towards the approach of prioritizing project	Level of application of fair criteria for the selection of participants in training sessions organized Percentage of women, and young people, who received training	Low to medium	During the final selection of sites and beneficiaries	PMU, Relevant government partners, IFAD supervisions missions	Taken into account in the project see budget lines and related Outputs

		support to most vulnerable households while ensuring benefits trickle down to all the village households through one of the project activities. This will mitigate any conflicts that might arise within the village due to focusing on the most vulnerable households particularly women and youth. The PMU will monitor closely the targeting mechanism.					
Marginalized and Vulnerable Groups	Exclusion of marginalized groups from project benefits	Exclusion of marginalized groups. Thus, the project's design in itself is a mitigation measure. To avoid social exclusion of marginalized communities, orientation /sensitization will be initiated in the project sites, at households and villages level to ensure equal participation and ensure no social impacts fall on the marginalized and vulnerable group.	Percentage of young people, women beneficiaries of the project	Low	Semi annual	PMU, Relevant government partners, IFAD supervisions missions	Taken into account in the project; see budget lines and related Outputs
Human Rights	No activities are, or will be, included in the design of the proposed project that are not in line with established international human rights. Moreover, the proposed project will	The project will respect and promote all fundamental human rights as per the constitution of Côte d'Ivoire , and in accordance to all conventions signed by the government of CIV .The project will work in line with the local and regional plans and PMU and Local Communities Organisations will ensure no human rights violation happens. The project anticipates no violation of human rights including child labour through	Level of improvement of the capacity for an efficient and equitable treatment of the cases. Number of complaints cases	No appreciable risk.	During the life cycle of the project	Competent Environmental Assessment Authority	Taken into account in the project see budget lines under M&E

	promote the fundamental human rights of access to food, water and information.	the project activities, and on the other hand will strive to empower the local community to be aware of and exercise their human rights so as to use it systemically for their benefit and wellbeing.					
--	--	---	--	--	--	--	--

Gender Equity and Women Empowerment	Inequitable representation of women in decision making process; identification, planning and implementation of activities Lack of confidence of women to participate in project activities	Gender focus activities will also include creating awareness in the community at large to acknowledge women for their contribution as an income generating individual in the household to create their value in the community and promote equitable. Fair and equitable selection of beneficiaries will be done for capacity building along the selected value chains. A list of all the participants will be maintained and gender ratio will be monitored by the PMU on a quarterly basis	Percentage of women in decision making process Number of complaints	Low Low	During the life cycle of the project	PMU, Relevant government partners, IFAD supervisions missions	Taken into account in the project see budget lines and related Outputs
Core Labour Rights	Delay in wage payments;	Compliance to labour rights will be ensured in all the project activities. vocational training programs to provide opportunities to cocoa producers children (focusing on women and youth) to develop skills for migrating toward other agricultural or non-agricultural activities The wages will be determined on task allotted and the wage rate will be calculated on the basis of prevailing minimum wage rate for the task. The record of work done for each labour engaged will have to be	Proportion of local labor used in installation work	Low Low	During labor intensive activities	PMU; Competent Environmental Assessment Authority	Taken into account in the project see budget lines and related Outputs

	<p>Non-adherence to minimum wage;</p> <p>Child labour;</p> <p>Labour hours, especially on community work</p>	<p>maintained and the wages paid accordingly. The hours of work and the timing of the working hours will be determined in consultation with the labour and the prevailing practices in the area. Compliance will be ensured by making advance payments for the physical work as per the village micro plan submitted by the local communities to the implementing partner. Positive discrimination in favour of women may be used to provide fair and equal opportunity to women who seek employment as labour and gain from the wages earned by her. All forms of negative discrimination in respect of employment and occupation would be eliminated.</p> <p>Project should not engage child labour in any of its activities and all forms of forced or compulsory labour may be eliminated.</p> <p>The project will maintain registers for labour payments and same would be verified with respect to payments as per the schedule of rates, work quantity by the EE.</p>					
Indigenous Peoples	There is no Indigenous people in CIV	There is no indigenous in CIV	Not applicable	No appreciable risk.	-	-	-

Protection of Natural Habitats	Beneficiaries may implement activities that cause negative impacts on the biophysical environment, including natural habitats, i.e. spread of diseases, overexploitation	The project will promote sustainable use of natural resources and the protection of natural habitats as part of the requirements for funding. This includes shifting from unsustainable practices including traditional slash-and-burn agriculture practices, and deforestation, and promotion of water-saving irrigation techniques to limit runoff and soil erosion in the project area. Through a risk screening system, the grant mechanism will ensure that selected activities with medium to high risks of deteriorating the integrity of semi- or all-natural habitats are avoided. For subprojects with identified low risk, proper advice and capacity building support will be provided on areas such as sustainable exploitation of forest and low land productions	Percentage of funded activities with risks of altering natural habitats	Low	At subproject appraisal stage and during the AF project lifecycle	PMU, Grant Mechanism contractor National Environmental Agency	Taken into account in the project see budget lines and related Outputs
Conservation of Biological Diversity	Fire, in areas of the project which are not under including virgin forest	Capacity building activities and the early warning systems to be put in place under components 2 and 3 will help minimize those risks The project will not involve unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognised by the national government for their high conservation value, including as critical habitat; or (d) recognised as protected by traditional leaders and communities. All necessary assessments will be conducted before the rehabilitation of degraded land and the promotion of sustainable rice intensification will	Occurrence of wildfire or induced fire Deforestation	Low	During the project lifecycle	National parks staff; Communities managing community forests; PMU National Environmental Agency	Taken into account in the project see budget lines and related Outputs

		result to restoration and improved management and protection of natural habitat as well as ecosystem functions and services.					
<i>Climate Change</i>	Emission of GHG emissions from rice paddies cultivation	The project will not generate significant and / or unjustified increase in greenhouse gas emissions or any other cause of climate change. SRI will be promoted in the rice sector and Climate resilient cassava and cocoa value chain will contribute in avoiding and sequestering CO2. The climate and environment specialist engaged at inception and during the design and implementation of the programme, will monitor and manage clearing and burning (greenhouse gases) as an alternative and if required will be addressed early in the project.	Number of ha of on rice paddy production	Low to medium	During the project lifecycle	PMU, Grant Mechanism contractor National Environmental Agency	Taken into account in the project see budget lines and related Outputs
Pollution Prevention and Resource Efficiency	Polluting of the cassava, cocoa and rice production	Capacity building and Community will be sensitized for disposal of pesticides and any pollutant used in the two value chains. The project will ensure slash and burn, or release of pollutants into the environment is minimal. With the introduction of briquetting machines in the rice value chain, waste conversion will be demonstrated.	Number of communities trained on non-biodegradables and coordinated and sustainable pest and pesticide management techniques	No appreciable risk.	During the project lifecycle	PMU, Relevant government partners, IFAD supervisions missions National Environmental Agency	Taken into account in the project see budget lines and related Outputs

<i>Public Health</i>	COVID -19 impact	In line with the national COVID-19 measures , promote social distancing and safe farming and sanitary measures in line with the national requirements to prevent the spread of COVID19.	Number of communities safeguarded against COVID-19	Low to medium	During the project lifecycle	PMU, Relevant government partners, IFAD supervisions missions National Environmental Agency COVID-19 team	Taken into account in the project see budget lines and related Outputs
Physical and Cultural Heritage	None	No mitigation measures necessary.	Not applicable	-	-	-	-
<i>Lands and Soil Conservation</i>	Risk identified is related to land rehabilitation and use.	The project will ensure that all relevant environmental codes and standards will be followed during the implementation of the project. Deforestation and upland crop production might affect soil quality and conservation, as well as flooding, water logging, soil salinization and alkalization. Where land is to be modified for example farmlands that may cause soil erosion or deforestation, standards will be followed to maintain the land in its natural state or as close to its natural state as is possible; and, if land is to be converted, it must promote and protect its current function.	Ha of land sustainably managed and conserved	Low	During the project lifecycle	PMU, Relevant government partners, IFAD supervisions missions National Environmental Agency	Taken into account in the project see budget lines and related Outputs

231. The Environmental Agency checklist will also be used to ensure that planning permissions and decisions comply with Government environmental and social approval processes. Updating of ESMP and a decision as to whether an EIA is required will be the final step. The initial actions during pre-inception will involve coordination of the roles and responsibilities of those involved in managing these risks with the ESS specialist taking the lead role with supporting role from the Gender and M&E specialists.

232. The potential environmental and social risks posed by the project are limited and constrained to feeder road rehabilitation, cassava production, rice production, small-scale irrigation and drainage, fertilizer usage and agricultural rehabilitation of cocoa. The project will not have any negative impacts such as the involuntary taking or restriction on the use of land resulting in physical or economic displacement or negatively affect indigenous peoples or sites of historic, religious or cultural significance. The project is rated as a 'category B' project according to IFAD's Social, Environmental and Climate Assessment Procedures (SECAP), which means that no formal Environmental and Social Impact Assessment (ESIA) will be required. Further analysis and an environmental management plan will however be mainstreamed throughout project design and implementation and be largely covered by the Adaptation Fund funded activities. The project will not invest in any sensitive areas like protected areas and if activities are around buffer zones, they must comply with the National Park management plans. No investment is expected to support more than 100 ha contiguous development and aquaculture ponds of more than 25 ha.

1.1. Grievance Mechanism

233. In order to reduce conflicts, a robust grievance/complaints mechanism that meets at least the following 'effectiveness' criteria should be instituted²⁹:

- a. *Legitimate*: enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes;
- b. *Accessible*: being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access;
- c. *Predictable*: providing a clear and known procedure with an indicative time frame for each stage, and clarity on the types of process and outcome available and means of monitoring implementation;
- d. *Equitable*: seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms;
- e. *Transparent*: keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake;
- f. *Rights-compatible*: ensuring that outcomes and remedies accord with internationally recognized human rights;
- g. A source of *continuous learning*: drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms;
- h. Based on *engagement and dialogue*: consulting the stakeholder groups for whose use they are intended on their design and performance, and focusing on dialogue as the means to address and resolve grievances.

234. IFAD has established a Complaints Procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures in the context of IFAD-supported projects. The procedure allows affected complainants to have their concerns resolved in a fair and timely manner through an

²⁹ Office of the High Commissioner on Human Rights (OHCHR) (2011), *UN Guiding Principles on Business and Human Rights* (OHCHR: Geneva), pp.33-34

independent process. Although IFAD normally addresses potential risks primarily throughout the design process and project, it remains committed to: (i) working proactively with countries and the affected parties to resolve complaints; (ii) ensuring that the complaints procedure is responsive and operates effectively; and (iii) maintaining records of all complaints and their resolutions³⁰.

235. To ensure that complaints and dissatisfactions from farmers are duly attended to and resolved, the apex groups of the farmer organizations will serve as the first level of grievance reporting mechanism. Issues that cannot be resolved at this stage will proceed to the community leadership. When the leadership is not able to resolve these issues, the matter will be escalated to the project implementation unit through the project liaison officer at the community level.
236. The AF Project will as much as possible utilize every available grievance redress mechanisms including: associations (including farmers' associations/organizations) traditional council (Paramount Chiefs and elders), village square engagement (consisting of representatives of men, women and social groups), village general assembly, the project NCPU, etc.

³⁰ IFAD (2016) *Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP)* (IFAD: Rome), p.12

D. MONITORING AND EVALUATION ARRANGEMENTS

Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan

237. Project Monitoring and Evaluation (M&E) and Knowledge management will be under the oversight of the National Project Coordinating Unit, and led by the M&E officer who will work closely with the implementing partners. The M&E system should: (i) produce, organize and disseminate the information needed for the strategic management of the Project, (ii) document the results and lessons learned for internal use and for public dissemination on the achievements and (iii) respond to the information needs of Adaptation Fund, IFAD and the Government on the activities, immediate outcomes and impact of the Project. A monitoring and evaluation manual that will describe a simple and effective system for collecting, processing, analyzing and disseminating data will be prepared in the first year of the Project.
238. A computerized database will be developed that will enable the generation of dashboards used in IFAD projects. The system will be regularly fed from data collected in the field by the implementing partners and the various studies carried out as part of the projects' implementation. The monitoring and evaluation system will be coupled with a geo-localized information system (GIS) that will allow mapping and spatial-temporal analyses. Trainings will be organized to strengthen the capacities of the various stakeholders involved in the monitoring and evaluation system.
239. Project M&E activities will be guided by the following key considerations:
- a) Data will be disaggregated by poverty, livelihood group and gender;
 - b) Each implementing or partner agency will have clear M&E responsibilities with specific reporting deadlines and a forum for presenting and discussing the findings of the monitoring exercise; and
 - c) M&E will be linked to the project rationale, log frame, and annual work plans and budgets. M&E findings will be used to take corrective or enhancing measures at the level of project management.

The project key M&E activities will include the following:

240. **Project Inception Workshop.** A Project Inception Workshop will be conducted within one month after the inception workshop has taken place with the full project team, relevant government counterparts and IFAD. The Inception Workshop, i.e. the start of the Project implementation, shall be held within 6 months from the date of the 1st disbursement from AF to IFAD
241. The Inception Workshop is crucial to building ownership for the project results and to plan the first-year annual work plan. A fundamental objective of the Inception Workshop will be to present the modalities of project implementation and execution, and assist the project team to understand and take ownership of the project's goals and objectives. An Inception Workshop Report will be prepared and shared with participants.
242. **Reporting.** In the first and sixth year of the Project, a MPAT/SYGRI+ survey that also incorporates the information needs of the project logical framework will be conducted. MPAT, a multidimensional poverty assessment tool, is a recently developed IFAD tool that assesses poverty in ten dimensions that are at the heart of rural livelihoods. The due date of the 1st annual Project Progress Report is 1 year after the Inception Workshop, with 2 months tolerance window. The same timeline will apply for subsequent PPRs
243. Semi-annual and Annual Project Reports will be prepared by the NPCU and verified by the PSC to monitor progress made since project start and in particular for the previous reporting period.

These reports include, but are not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative);
- Project outputs delivered per project outcome (annual);
- Lessons learned/good practices;
- Annual expenditure reports; and
- Reporting on project risk management.

244. Quarterly Progress Reports will also be prepared by project implementing partners in the field, and submitted to the NPCU to ensure continuous monitoring of project activities and identify challenges to adopt necessary corrective measures in due time.

245. Technical reports – such as a best practices and lessons learned report - will also be completed, as determined during the project inception report.

A Terminal project report will also be completed at least two months before project closure.

246. **Financial Reporting.** In terms of financial reporting (article 77 of the AF standard agreement), the project team will provide IFAD with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of funds according to the established procedures.

247. **External Evaluations.** The project will undergo an independent external Mid-Term Evaluation at the mid-point of project implementation, which will determine progress being made toward the achievement of outcomes and identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project term.

A Final Evaluation will be conducted 3 months before project closure.

248. **Field visits.** Government authorities, members of PSC and IFAD staff will conduct regular field visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress.

249. Knowledge management and KM culture and lack of country level M&E framework for measuring the results and contributions towards the Agenda 2030 will be promoted. Over the past year IFAD has moved towards a country programme approach in Liberia with dedicated M&E resources and has provided capacity building support in the areas of monitoring, analysing results and documenting lessons learned for greater knowledge management. The project will strengthen the existing structure of the M&E Unit in the National Project Coordination Unit (NPCU) to monitor outcomes in concert with the Project Monitoring and Evaluation and prepare a clear KM and implement it throughout the entire project cycle and beyond.

The proposed M&E budget is as follows (**Error! Reference source not found.**):

Breakdown of how IE fees that will be utilised for supervision and M&E function

IE Fees Breakdown of M&E Supervision	Responsibility	Budget (USD)	Timeframe
Supervision visits	IFAD, NPCU, Government	118507.6219	bi-annually
Training workshops of the NPCU and stakeholders	IFAD, NPCU	151538.461	2020
Baseline survey/MPAT/SYGRI+ survey review and validation	NPCU	60000	First Year (2020) Sixth Year (2026)
Mid-Term Evaluation	IFAD, External consultants	55000	2023
Annual Adaptation Fund PPR support	IFAD, External consultants	55000	2025
Corporate Knowledge Management Activities and Publications	IFAD, NPCU	30000	bi-annually
Total		470046.0829	5 years

Output 3.2 costs covers the other M&E function presented below

3.2.1. Support to the development of Measurement Reporting and Verification system of climate response programmes.	90000
3.2.2. Support to the improved monitoring & evaluation and knowledge management activities, which will include; Additional baseline survey costs (related to climate change adaptation) and additional terminal survey costs (related to climate change adaptation).	90000
3.2.3 Project management and coordination, including the recruitment of Climate change adaptation specialist for the duration of the project and Staff training on adaptation-related issues.	120000
3.2.4. Production of knowledge management products like packages of practices, e-newsletters, interviews and success stories	50000
3.2.5. Dissemination of Production of knowledge management products via online and offline channels.	43864

E. RESULTS FRAMEWORK

Include a results framework for the project proposal, including milestones, targets and indicators

Table15: Project Results Framework

Project Objective(s) ³¹	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
Overall objective: Enhancing smallholder farmers and rural population's resilience to climate change					
Enhancing smallholder farmers and rural population's resilience to climate change	AF Core indicator: Number of beneficiaries (direct and indirect)	0	15,600 direct beneficiaries, including 45 per cent women and youth 93,600 indirect beneficiaries	<ul style="list-style-type: none"> - Project M & E reports - Progress reports - Mid-term and final project evaluations 	Political and economic stability in Côte d'Ivoire
	AF Core indicator: Number of smallholder farmers reporting improvements in their living conditions	0	15,600	<ul style="list-style-type: none"> - Project M & E reports - Progress reports - Mid-term and final project evaluations 	
	Number of institutions and smallholder farmers with strengthened capacity to reduce risks associated with climate change	0	At least 50%	<ul style="list-style-type: none"> - Project M & E reports - Progress reports - Mid-term and final project evaluations 	
	Number of communities with access to adapted complex climate data	0	15,600	<ul style="list-style-type: none"> - Project M & E reports - Progress reports - Mid-term and final project evaluations 	
	Number of communities with increased adaptive capacity to climate change-driven hazards affecting	0	15,600	<ul style="list-style-type: none"> - Project M & E reports - Progress reports 	

³¹ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

	their specific locations			- Mid-term and final project evaluations	
	CC priorities are integrated into national development strategy.	0	At least 3	- Project M & E reports - Progress reports - Mid-term and final project evaluations	
	Number of farmers reporting better access to innovative adaptation practices, tools and technologies accelerated, and scaling -up and/or replicating	0	15,600	- Project M & E reports - Progress reports - Mid-term and final project evaluations	
Project Outcome(s)	Project Outcome Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
<ul style="list-style-type: none"> • Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations. 					
The cassava, cocoa and rice value-chains are resilient to future climate change impacts and smallholders' incomes are diversified	- Number of farmers with increased access to reliable climate information and services (45% women)	0	At least 90% of the targeted beneficiaries	<ul style="list-style-type: none"> - Project M & E reports - Progress reports - Mid-term and final project evaluations 	Political and economic stability in Côte d'Ivoire
	- Number of met stations in the 3 targeted regions	22	At least 30 stations		
	- Number of farmers with increased capacity and understanding of climate risks in agriculture	<u>0</u>	85 per cent of farming households (in project area)		
	- Number of government decision makers/ local authorities capacity and understanding	<u>0</u>	85 per cent of farming households (in project area)		

	of climate risks in agriculture (45% women with access to assets and property)				
Component 2: Climate-proofed agricultural production and post-harvest combined with livelihood diversification					
Strengthened climate weather information and services to support capacity building in adaptation and the implementation of the best farming model	- Number of farmers reporting more diverse income sources	<u>0</u>	60 per cent of farming households (in project area)	<ul style="list-style-type: none"> - Project M & E reports - Progress reports - Mid-term and final project evaluations 	Political and economic stability in Côte d'Ivoire
	- Number of farmers reporting an increase in cocoa productivity	<u>0</u>	85 per cent of farming households (in project area) -		
	- Number of farmers reporting an increase in rice productivity	<u>0</u>	85 per cent of farming households (in project area)		
	- Number of farmers reporting an increase in cassava productivity	0	85 per cent of farming households (in project area)		
	- Number of farmers adopting climateresilient farming practices	<u>0</u>	60 per cent of farming households (in project area)		
	- Number of earth dams constructed	<u>0</u>	At least 15% dams		
	- Number of fisherman adopting climate resilient fishing	<u>0</u>	At least 100		
Component 3: Institutional capacity development and policy engagement					
Institutional Environment for resilient rice and cocoa value chain	- Number of staff of the MINEDD, MINADER, ministry of Rice,	0	Two technicians trained by PY1. Two meteorologists trained by	<ul style="list-style-type: none"> - Project M & E reports - Progress reports 	Political and economic stability in Côte d'Ivoire

improved, policy and regulatory frameworks strengthened	SODEXAM and other sector trained.		PY3. 24 staff completed the training (12 by PY 1 and 12 by PY3)	- Mid-term and final project evaluations	
	- Number of sectoral policies integrating climate change risks (thanks to the training provided by the project)	0	At least one		

F. ALIGNMENT WITH RESULTS FRAMEWORK OF THE ADAPTAION FUND

Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

The table below (**Error! Reference source not found.**) demonstrates how the project aligns with the Results Framework of the

Adaptation Fund.

Project alignment with the result framework of the Adaptation Fund

Project Objective(s) ³²	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Overall objective: Enhancing smallholder farmers and rural population's resilience to climate change				
Enhancing smallholder farmers and rural population's resilience to climate change	<ul style="list-style-type: none"> - Number of smallholder farmers living below poverty line. - Number of smallholder farmers reporting improvements in their living conditions. 	Outcome 1: Reduced exposure to climate-related hazards and threats	1.1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis 1.2 No. of early warning systems (by scale) and no. of beneficiaries covered	<u>6,000,000</u>
	<ul style="list-style-type: none"> - Number of institutions and smallholder farmers with strengthened capacity to reduce risks associated with climate change 	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	
	<ul style="list-style-type: none"> - Number of communities with access to adapted complex climate data 	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction	3.2. Percentage of targeted population applying appropriate adaptation responses	

³² The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

		processes at local level	
		Outcome 4 Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress
	- Number of communities with increased adaptive capacity to climate change-driven hazards affecting their specific locations	.Outcome 5: Increased ecosystem resilience to CC and variability	5. Ecosystem services and natural assets maintained or improved under CC and variability
		Outcome 6 Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets 6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods
	- CC priorities are integrated into national development strategy.	Outcome 7: : Improved policies and regulations that promote and enforce resilience measures	7.Climate change priorities are integrated into national development strategy
	- Number of farmers reporting better access to innovative adaptation practices, tools and technologies accelerated, and scaling -up and/or replicating -	Outcome 8 Support the development and diffusion of innovative adaptation practices, tools and technologies	8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated

Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.				
1.1.Strengthened climate weather information and services to support capacity building in adaptation and the implementation of the best farming model	<ul style="list-style-type: none"> - Number of farmers with increased access to reliable climate information and services (disaggregated by gender) - Number of met stations in the 3 targeted regions - Number of farmers with increased capacity and understanding of climate risks in agriculture (disaggregated by gender) - Number of farmers of government decision makers/ local authorities with increased capacity and understanding of climate risks in agriculture (disaggregated by gender and with access to property rights and control over assets by women) 	Output 1.1. Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.	<p>No. of early warning systems (by scale) and no. of beneficiaries covered</p> <p>Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses</p> <p>No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)</p>	<u>496,500</u>
	<ul style="list-style-type: none"> - Number of farmers and national institutions with increased capacity and understanding of climate risks in agriculture (disaggregated by gender) 		Output 1.2. Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers	

		are strengthened to understand climate risks and adapt better to climate shocks,	Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	
Component 2: Climate-proofed agricultural production and post-harvest combined with livelihood diversification				
2.1. Established proven best practices on climate resilient rice and cocoa value chains, drawing from local and international research leading to a sustainable increase in rice and cocoa production	<ul style="list-style-type: none"> - Number of farmers reporting an increase in cocoa productivity (45% women) - Number of farmers reporting an increase in rice productivity (45% women) - Number of farmers reporting increase in cassava productivity (45% women) - Crop yield change in target areas No of target farmers adopting climate resilient farming practices - Number of cocoa and improved rice nurseries established - Number of cassava cuttings, cocoa and improved rice seeds distributed 	Output 2.1. Best available technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.	<p>Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress</p> <p>Nutrition and food security ensured during the dry season</p>	<u>3,196,651.35</u>
2.2. Adaptation strategy of smallholder farmers improved because of diversified livelihood strategy	<ul style="list-style-type: none"> - Number of farmers reporting more diverse income sources (disaggregated by gender) - Number of fish farms as alternatives source of financing (disaggregated by gender) 	Output 2.2: Income-generating activities focusing on climate resilient fish farming on the Bandama river basin, conservation, processing units, marketing) are promoted as livelihood	Percentage of targeted population with sustained climate-resilient alternative livelihoods	<u>432.000</u>

		diversification measures		
--	--	--------------------------	--	--

Component 3: Institutional capacity development and policy engagement

<p>3. Environment for resilient cassava, rice and cocoa value chain improved, policy and regulatory frameworks strengthened as SODEXAM and the government capacities enhancement on adaptation to climate change in these sectors.</p>	<ul style="list-style-type: none"> - Number of meteorological stations installed. - Number of staff of the SODEXAM and meteorological institute trained (disaggregated by gender) - Number of sectoral policies integrating climate change risks (thanks to the training provided by the project) – Under SODEXAM management - Number of knowledge management products disseminated 	<p>Output 3.1. . Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA,) in planning and better managing climate risk is strengthened</p> <p>Output 3.2: Activities are adequately coordinated, monitored and evaluated.</p>	<p>No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)</p> <p>No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)</p>	<p><u>390,008</u></p> <p><u>393,864</u></p>
--	---	--	--	---

G. DETAILED BUDGET

Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs

250. The table below () presents the detailed budget of the project per activity.

Detailed budget per project activity

Outputs	Activity	Totals (\$)
Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.		
Output 1.1: Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.		496500
ACTIVITIES	1.1.1 Acquiring 18 automatic weather stations and 150 rain gauges	390000
	1.1.2 Upgrading and rehabilitation of existing 10 hydrological stations (automatic stage recorders) and its specialized hydrological equipment (acoustic doppler current profiler, bathymetric instruments...) Bandama Rivers and small flood-prone watersheds.	50000
	1.1.3 Visiting and identification of areas installation of weather stations and rain gauges	5000
	1.1.4. installation of 18 automatic weather stations and 150 rain gauges by SODEXAM	10000
	1.1.5 Systematically collecting data and undertaking risk assessments Improvement on crop modelling and assessment of climate vulnerability and Production of Weather reports for producers	5000
	1.1.6. Identification of local radios for the dissemination of local climate information	1000
	1.1.7 Dissemination of local climate information to local cocoa, cassava, rice producers specifically for droughts, floods and humidity.	5000
	1.1.8. Develop hazard monitoring and early warning services including weather and hydrological monitoring equipment, improving forecast capabilities and the use of the CIEWS within agricultural advisories, drought and flood risks monitoring	13500
	1.1.9. Development of digital platforms for dissemination of local climate information	15000

	1.1.10 Facilitate the collaboration between SODEXAM and Telecom companies to disseminate weather climate information through digital platforms and sms to cooperatives and extension services for cropping calendar and planning	2000
Output 1.2. Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks.		512500
ACTIVITIES	1.2.1 Training of some local radios for the dissemination of local climate information	12500
	1.2.2. Training of 10,000 smallholder farmers on the timely dissemination of early warning products (including agro-climatic information)	150000
	1.2.3 Raising awareness among 15,600 smallholder farmers on the best climate adaptation/mitigation practices/technologies in agriculture	50000
	1.2.4 Training of 150 extension agents on climate resilient agriculture	150000
	1.2.5 Development of a capacity-building program for government authorities	50000
	1.2.6 Capacity-building programs for government authorities to support decision making and local contingency planning, regulatory bodies	50000
	1.2.7 Build national and rural communities response capabilities to effectively when warnings are received	50000
Component 2: Climate-proofed agricultural production and post-harvest combined with livelihood diversification		
Output 2.1. . Best available technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.		3196651
ACTIVITIES	2.1.1 Establishment of demo plots to demonstrate best reforestation and agro forestry techniques	45000
	2.1.2 Development of cocoa farms, which include resilient practices such as vulnerability-informed land use, tree shading and agroforestry.	200000
	2.1.3 Uprooting and rehabilitation/reconversion of about 6000 ha of overaged or affected by disease plantations, with full compensation paid to producers	196651
	2.1.4 Dissemination of local climate information to local cocoa producers specifically for droughts, floods and humidity. The project will strengthen the network of agrometeorological stations with the installation of 18 automatic weather stations and 10 hydrological stations. The project will also leverage climate information for cropping calendars.	95000
	2.1.5 Improvement on crop modelling and assessment of climate vulnerability	100000
	2.1.6 Use of modern technologies with a particular focus on solar based pumping systems, solar based post-harvest processing equipment to attract more youth in agriculture	100000

2.1.7 Facilitating farmers' access to improved climate friendly cocoa and rice production technologies and farming systems	100000
2.1.8 Improving cocoa and rice research system through partnership with the cocoa board the international cocoa organization, relevant international centers and the private sector	100000
2.1.9 strengthening the overall production performance of rice and cocoa through sustainable monitoring and evaluation systems, including a Grievance Redress Mechanism (GRM) to monitor development and compliance with environmental and social safeguards	100000
2.1.10 Development of credible certification programs and promotion of cocoa and rice production for niche markets through the development of specific geographically-based production	100000
2.1.11 Establishment of cocoa and rice dedicated logistics platforms in the selected intervention areas	100000
2.1.12 Training programs to develop the technical and managerial skills necessary to support the promotion of competitive processing by small and medium-scale entrepreneurs (including cooperatives).	100000
2.1.13 Review of the traceability of cocoa production and marketing, from plantations to export points	30000
2.1.14 Strengthen of cocoa and rice cooperatives and support to establishing Cocoa Inter-profession, with a genuine public-private partnership that will ensure producers, private sector and civil society participation in the management of the sector	100000
2.1.15 Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)	100000
2.1.16 Expanding the System of Rice Intensification (SRI)	100000
2.1.17 Support to MOA to run Farmer Field Schools and provide other technical support.	60000
2.1.18 Capacity building in modern composting techniques to reduce/prevent movement of farms to fallow land in secondary cropping years	40000
2.1.19 Boreholes irrigation schemes, to cope with the consequences of drought and heat extreme events, boreholes will be rehabilitated and irrigation schemes will be deployed.	300000
2.1.20 Development of new Inland Valley Swamps for rice production to increase the production of smallholder farmers and diversify and expand their revenue sources.	100000

	2.1.21 Wet-season valley bottom water control cascaded dykes	100000
	2.1.22 Micro-catchment water runoff control dykes	100000
	2.1.23 Construction or consolidation of structures for gravity irrigation serving 8,000 producers	100000
	2.1.24 Watershed rehabilitation, water efficiency and management,	100000
	2.1.25 Training and extension and infrastructure rehabilitation and construction including drainage systems	100000
	2.1.26 An assessment of the impact of cassava production on rural livelihoods as a climate change adaptation strategy	50000
	2.1.27 Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)	100000
	2.1.28 Community mobilization and organizing to take up cassava as a climate smart cash crop and cooperative development	50000
	2.1.29 Support female farmers to engage in commercial cassava production (including training in sustainable cassava production, negotiating access to farmland, tractors)	50000
	2.1.30 Conduct random control trails for rigorous testing and evaluation of the impact of cassava uptake on the resilience of female farmers and drought prone communities	50000
	2.1.31. Support cooperatives with processing units	230000
	Output 2.2 – Income-generating activities focusing on climate resilient fish farming on the Bandana river basin, conservation, processing units, marketing) are promoted as livelihood diversification measures	432000
	2.2.1 Construction of 20 earth dams less than 15m high for fish farming activities.	150000
	2.2.2 Establishment of fish farms, including the creation of value-chain services (fingerling, etc.).	100000
ACTIVITIES	2.2.3 Training of farmers on Tilapia and Milkfish production	20000
	2.2.4 Designing and construction of ponds/enclosures	100000
	2.2.5 Purchase and distribution of fingerlings to farmers	50000
	2.2.6 Establishment and building capacity for fish farmers cooperative	12000
Component 3: Institutional capacity building, policy engagement and knowledge management.		

Output 3.1: Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA,) in planning and better managing climate risk is strengthened		390008
ACTIVITIES	2.1.1. Strengthening of capacities of staff Ministry of Environment, SODEXAM on climate change adaptation (Capacity building through technological enhancement, Training to enhance institutional capacity)	165000
	2.1.2. Strengthening of the Meteorological Department and local representation, including capacity building through technology enhancement and training to enhance institutional capacity.	165000
	2.1.3. Technical Assistance for improved policy frameworks to mainstream climate risks in into sectoral strategies and policies.	60008
Output 3.2: Activities are adequately coordinated, monitored and evaluated		393864
ACTIVITIES	3.2.1. Support to the development of Measurement Reporting and Verification system of climate response programmes.	90000
	3.2.2. Support to the improved monitoring & evaluation and knowledge management activities, which will include; Additional baseline survey costs (related to climate change adaptation) and additional terminal survey costs (related to climate change adaptation).	90000
	3.2.3 Project management and coordination, including the recruitment of Climate change adaptation specialist for the duration of the project and Staff training on adaptation-related issues.	120000
	3.2.4. Production of knowledge management products like packages of practices, e-newsletters, interviews and success stories	50000
	3.2.5. Dissemination of Production of knowledge management products via online and offline channels.	43864
project activities Cost	project activities Cost	5421523
Project execution cost	(2%)	108430
Total Project costs		5529953
Implementing Entity fee (Project cycle management (8.5%))		470046
Amount of financing requesting		6,000,000

Table 7: Project disbursement matrix

Outputs	Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Totals
Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.							
Output 1.1: Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.	Output 1.1	265000	225500	2000	2000	2000	496500
	Acquiring 18 automatic weather stations and 150 rain gauges	180000	180000	0	0	0	390000
		15000	15000	0	0	0	
	Upgrading and rehabilitation of existing 10 hydrological stations (automatic stage recorders) and its specialized hydrological equipment (acoustic doppler current profiler, bathymetric instruments...) Bandama Rivers and small flood-prone watersheds.	25000	25000	0	0	0	50000
	Visiting and identification of areas installation of weather stations and rain gauges	5 000	0	0	0	0	5 000
	installation of 18 automatic weather stations and 150 rain gauges by SODEXAM	10000	0	0	0	0	10000
Systematically collecting data and undertaking risk assessments Improvement on crop modelling and assessment of climate vulnerability and Production of Weather reports for producers	1000	1000	1000	1000	1000	5000	

	Identification of local radios for the dissemination of local climate information	1000	0	0	0	0	1000
	Dissemination of local climate information to local cocoa, cassava, rice producers specifically for droughts, floods and humidity.	1000	1000	1000	1000	1000	5000
	Develop hazard monitoring and early warning services including weather and hydrological monitoring equipment, improving forecast capabilities and the use of the CIEWS within agricultural advisories, drought and flood risks monitoring	10000	3500	0	0	0	13500
	Development of digital platforms for dissemination of local climate information	15000	0	0	0	0	15000
	Facilitate the collaboration between SODEXAM and Telecom companies to disseminate weather climate information through digital platforms and sms to cooperatives and extension services for cropping calendar and planning	2000	0	0	0	0	2000
	Output 1.2.	118500	117500	102500	102500	71500	512500
Output 1.2. Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks	Training of some local radios for the dissemination of local climate information	3500	2500	2500	2500	1500	12500
	Training of 10,000 smallholder farmers on the timely dissemination of early warning products (including agro-climatic information)	40000	40000	25000	25000	20000	150000

	Raising awareness among 15,600 smallholder farmers on the best climate adaptation/mitigation practices/technologies in agriculture	10000	10000	10000	10000	10000	50000
	Training of 150 extension agents on climate resilient agriculture	35 000	35000	35 000	35000	10000	150 000
	Development of a capacity-building program for government authorities	10 000	10000	10 000	10000	10000	50 000
	Capacity-building programs for government authorities to support decision making and local contingency planning, regulatory bodies	10000	10000	10000	10000	10000	50000
	Build national and rural communities response capabilities to effectively when warnings are received	10000	10000	10000	10000	10000	50000
Component 2: Climate-proofed agricultural production and post-harvest combined with livelihood diversification							
	Output 2.1.	805000	1235000	551651.35	315000	290000	3196651
Output 2.1. Best available technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.	Establishment of demo plots to demonstrate best reforestation and agro forestry techniques	30000	15000	0	0	0	45000
	Development of cocoa farms, which include resilient practices such as vulnerability-informed land use, tree shading and agroforestry.	50000	100000	50000	0	0	200000
	Uprooting and rehabilitation/reconversion of about 6000 ha of overaged or affected by disease plantations, with full compensation paid to producers	100000	90000	6651.35	0	0	196651

	Dissemination of local climate information to local cocoa producers specifically for droughts, floods and humidity. The project will strengthen the network of agrometeorological stations with the installation of 18 automatic weather stations and 10 hydrological stations. The project will also leverage climate information for cropping calendars.	15000	30000	25000	15000	10000	95000
	Improvement on crop modelling and assessment of climate vulnerability	10000	30000	20000	20000	20000	100000
	Use of modern technologies with a particular focus on solar based pumping systems, solar based post-harvest processing equipment to attract more youth in agriculture	50000	50000	0	0	0	100000
	Facilitating farmers' access to improved climate friendly cocoa and rice production technologies and farming systems	10000	25000	25000	20000	20000	100000
	Improving cocoa and rice research system through partnership with the cocoa board the international cocoa organization, relevant international centers and the private sector	20000	25000	25000	20000	10000	100000
	strengthening the overall production performance of rice and cocoa through sustainable monitoring and evaluation systems, including a Grievance Redress Mechanism (GRM) to monitor development and compliance with environmental and social safeguards	10000	25000	25000	20000	20000	100000

Development of credible certification programs and promotion of cocoa and rice production for niche markets through the development of specific geographically-based production	50000	50000	0	0	0	100000
Establishment of cocoa and rice dedicated logistics platforms in the selected intervention areas	100000	0	0	0	0	100000
Training programs to develop the technical and managerial skills necessary to support the promotion of competitive processing by small and medium-scale entrepreneurs (including cooperatives).	100000	0	0	0	0	100000
Review of the traceability of cocoa production and marketing, from plantations to export points	10000	20000	0	0	0	30000
Strengthen of cocoa and rice cooperatives and support to establishing Cocoa Inter-profession, with a genuine public-private partnership that will ensure producers, private sector and civil society participation in the management of the sector	10000	50000	30000	10000	0	100000
Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)	10000	30000	20000	20000	20000	100000
Expanding the System of Rice Intensification (SRI)	10000	30000	20000	20000	20000	100000
Support to MOA to run Farmer Field Schools and provide other technical support.	10000	15000	15000	10000	10000	60000

Capacity building in modern composting techniques to reduce/prevent movement of farms to fallow land in secondary cropping years	10000	20000	10000	0	0	40000
Boreholes irrigation schemes, to cope with the consequences of drought and heat extreme events, boreholes will be rehabilitated and irrigation schemes will be deployed.	30000	110000	60000	50000	50000	300000
Development of new Inland Valley Swamps for rice production to increase the production of smallholder farmers and diversify and expand their revenue sources.	10000	25000	25000	20000	20000	100000
Wet-season valley bottom water control cascaded dykes	10000	30000	20000	20000	20000	100000
Micro-catchment water runoff control dykes	20000	50000	30000	0	0	100000
Construction or consolidation of structures for gravity irrigation serving 8,000 producers	20000	50000	30000	0	0	100000
Watershed rehabilitation, water efficiency and management,	20000	50000	30000	0	0	100000
Training and extension and infrastructure rehabilitation and construction including drainage systems	10000	35000	25000	20000	10000	100000
An assessment of the impact of cassava production on rural livelihoods as a climate change adaptation strategy	10000	0	20000	0	20000	50000

	Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)	10000	30000	20000	20000	20000	100000
	Community mobilization and organizing to take up cassava as a climate smart cash crop and cooperative development	10000	10000	10000	10000	10000	50000
	Support female farmers to engage in commercial cassava production (including training in sustainable cassava production, negotiating access to farmland, tractors)	10000	10000	10000	10000	10000	50000
	Conduct random control trails for rigorous testing and evaluation of the impact of cassava uptake on the resilience of female farmers and drought prone communities	10000	30000	0	10000	0	50000
	Support cooperatives with processing units	30000	200000	0	0	0	230000
	Output 2.2 –	287000	145000	0	0	0	432000
Output 2.2 – Income-generating activities focusing on climate resilient fish farming on the Bandana river basin, conservation, processing units, marketing) are promoted as livelihood diversification measures	Construction of 20 earth dams less than 15m high for fish farming activities.	50000	100000	0	0	0	150000
	Establishment of fish farms, including the creation of value-chain services (fingerling, etc.).	70000	30000	0	0	0	100000
	Training of farmers on Tilapia and Milkfish production	10000	10000	0	0	0	20000
	Designing and construction of ponds/enclosures	100000	0	0	0	0	100000
	Purchase and distribution of fingerlings to farmers	50000	0	0	0	0	50000

	Establishment and building capacity for fish farmers cooperative	7000	5000	0	0	0	12000
Component 3: Institutional capacity building, policy engagement and knowledge management.							
	Output 3.1:	160000	160000	70008.1	0	0	390008
Output 3.1: Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA,) in planning and better managing climate risk is strengthened	Strengthening of capacities of staff Ministry of Environment, SODEXAM on climate change adaptation (Capacity building through technological enhancement, Training to enhance institutional capacity)	70000	70000	25000	0	0	165000
	Strengthening of the Meteorological Department and local representation, including capacity building through technology enhancement and training to enhance institutional capacity.	70000	70000	25000	0	0	165000
	Technical Assistance for improved policy frameworks to mainstream climate risks in into sectoral strategies and policies.	20000	20000	20008.1	0	0	60008
	Output 3.2:	165000	55000	55000	55000	63864	393864
Output 3.2: Activities are adequately coordinated, monitored and evaluated	Support to the development of Measurement Reporting and Verification system of climate response programmes.	50000	10000	10000	10000	10000	90000
	Support to the improved monitoring & evaluation and knowledge management activities, which will include; Additional baseline survey costs (related to climate change adaptation) and additional terminal survey costs (related to climate change adaptation).	50000	10000	10000	10000	10000	90000

	Project management and coordination, including the recruitment of Climate change adaptation specialist for the duration of the project and Staff training on adaptation-related issues.	50000	20000	20000	20000	10000	120000
	Production of knowledge management products like packages of practices, e-newsletters, interviews and success stories	10000	10000	10000	10000	10000	50000
	Dissemination of Production of knowledge management products via online and offline channels.	5000	5000	5000	5000	23 864.00	43864
Project execution costs	Project costs	1800500	1938000	781159.45	474500	427364	5421523
	Recruitment of local staff (2%)		0	0	0	0	108430
Total Project costs		5529953					
Project cycle management (8.5%)		470046					
Amount of financing requesting		6,000,000					

H. DISBURSEMENT SCHEDULE

Include a disbursement schedule with time-bound milestones

Table 8: Project disbursement schedule

	Upon Agreement signature	One Year after Project Start	Year 2	Year 3	Year 4	Year 5	Total
Scheduled Date	May-20	Dec-20	Dec-21	Dec-22	Dec-23	Dec-23	
Project Funds (US\$)	1000000	1684000	959000	936000	446000	404864.	5429864.
Execution costs	18 099	18 100	18 099	18 100	18 099	18 100	108598.
Implementing Entity Fee (US\$)	76 923	76 923	76 923	76 923	76 923	76 923	461 538
Total (US\$)	1095023	1779023	1054022	1031023	541022	499887	6000000

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

Record of endorsement on behalf of the government³³ *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project / programme. Add more lines as necessary. The endorsement letters should be attached as an annex to the project/programme proposal. Please attach the endorsement letters with this template;*

<i>Mr. Oreste Santoni Akossi Deputy Director of Climate Change Ministry of Environment and Sustainable Development</i>	<i>Date: August, 11th, 2021</i>
--	--

⁶ Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

MINISTRY OF ENVIRONMENT AND
SUSTAINABLE DEVELOPMENT

GENERAL DIRECTION OF ENVIRONMENT

CLIMATE CHANGE DEPARTMENT



ADAPTATION FUND

REPUBLIC OF CÔTE D'IVOIRE
Union - Discipline - Work



Abidjan, le 11 AOUT 2021

N° 114 /MINEDD/CAB/DGE/DLCC/AND-FA/aos

Letter of Endorsement by Government of Côte d'Ivoire

To: **The Adaptation Fund Board**
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

SUBJECT : Endorsement for Project "*Increasing rural communities' adaptive capacity and resilience to climate change in Bandama basin in Côte d'Ivoire*"

In my capacity as designated authority for the Adaptation Fund in Republic of Côte d'Ivoire, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Côte d'Ivoire.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by International Fund for Agricultural Development (IFAD), in partnership with the United Nations Development Program (UNDP) and the Food and Agriculture Organization of the United Nations (FAO) in collaboration with the Ministry of Environment and Sustainable Development, and the Ministry of Agriculture and Rural Development of Côte d'Ivoire at a national level.

Sincerely,



AKOSSI Oreste Santoni

Adaptation Fund National Designated Authority, Côte d'Ivoire
Deputy Director, Climate Change Department

Téléphone : +225 08 45 43 03

Email : o.akossi@environnement.gouv.ci
akossisantoni@gmail.com

B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this Concept Note has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
<i>Jo Puri, Director Environment, Climate and Social Inclusion Division, IFAD</i>	
Date: <i>August 9, 2021</i>	Tel. and email: <i>j.puri@ifad.org</i>
Project Contact Person: Amath Pathe SENE, Lead Environment and Climate Specialist, West and Central Africa <u>amath.sene@ifad.org</u> <u>+22509190249</u>	

ANNEXES

Annexe 1 :



Investing in rural people

**Environmental and Social Management Framework
(ESMF)**

AF - Côte d'Ivoire

1.1. Introduction

251. In a context of COVID and post COVID, Climate change and climate variability is expected to affect rainfall patterns, temperatures and to decrease water availability and main crop yields. Informed concrete adaptation measures must address key challenges posed by climate change on key crops (cocoa, rice and cassava). The overall objective of the project is to address key climate vulnerabilities in agriculture and water resources management in the rice, cassava and cocoa hence increasing adaptive capacity and improving climate resilience of small-scale farmers in the Central Bandama watershed (regions of Belier, Gbeke and Marahoue) of Côte d'Ivoire
252. The resilience agricultural and water sectors can only be achieved through accurate, reliable and timely climate information and robust early warning systems (CIEWS) which inform the right and concrete adaptation measures for low-emissions, climate-resilient and diversified agriculture for enhanced livelihood. Project interventions will contribute to reducing vulnerability to the impacts of climate change and strengthening adaptive capacities of vulnerable communities and the ecosystems particularly water resources they depend on, by promoting food security, nutrition and use a gender sensitive approach.

1.2. Rationale and Objectives of the ESMF

253. During the design phase it was established that the Environment and Social Risk Category of the project is 'B' (i.e. 'some adverse impacts can be readily remedied by appropriate preventive actions and/or mitigation measures'), while the Climate Risk Category is high. As a result, the project requires the development of an environment and social management framework (ESMF), which unlike in the case of an environment and social management plan (ESMP), is developed when full information is not available. This also means that this report can only provide a somewhat general overview of likely environmental and social impacts for the targeted region. Nevertheless, where existing data was available or identified through stakeholder consultations, the report does provide a more detailed analysis of key characteristics and likely environmental and social impacts and mitigation measures per state.

The main objectives of the ESMF as per the terms of reference of this study are to:

- Identify potential impacts of the project and to prepare a generic Environmental and Social Management Plan for the direct and indirect impacts, as well as incremental impacts as they relate to land use changes, soil erosion, dust emissions, noise pollution, loss of trees, biodiversity, liquid and solid wastes from the activities, land acquisition leading to the physical movement of people, and / or loss of homes and / or loss of income sources, and / or loss of restrictions on access to economic resources as well as social relations, benefits sharing and settling of grievances among others;
- To formulate an Environmental and Social Management Framework (ESMF) including any standards and procedures, specifying how unidentified subprojects whose location are unknown will systematically address environmental and social issues in the screening for environmental and social impacts and categorization, site selection criteria, mitigation measures, design, implementation and operational phases as well as maintenance of the subproject lifecycle;

- For infrastructure related projects, to formulate Environmental and Social guidelines for construction firms to be recruited as contractors. These guidelines shall be recommended for incorporation in contractor's bids and contract documents.

1.3. Approach, Scope and Methodology Used for the ESMF

254. This ESMF report builds on the findings of the Social, Environmental and Climate Assessment Procedure (SECAP) review, which was part of the initial project design phase. These findings were complemented by a desk review of relevant documents on the environmental and social context of Côte d'Ivoire . In addition, the ESMF is the result of an assessment and determination of impacts, including impact identification, prediction, evaluation and interpretation, based on field studies and consultations in 2019 and 2020. As part of the ESMF, a general ESMP was developed for potential general project impacts, including mitigation measures, capacity and awareness building requirements to mitigate those measures, and monitoring.

255. In terms of the technical scope, the ESMF reviewed environmental, climate and social impacts, focusing on areas that have been impacted by oil operations, unsustainable agricultural practices and climate change. More specifically, the ESMF reviewed earlier reports and studies on ground and water contamination, CO2 emissions, aquatic pollution, potential impacts of oil pollutants on public health, soil degradation, impact of illegal refining operations, as well as the institutional and legal structures in the targeted areas.

256. The ESMF team held consultations with different stakeholders in all countries and targets regions see SECAP design PDR. This ESMF report was developed in accordance with IFAD's Social Environment and Climate Assessment Procedures (SECAP) as well as IFAD's Environment and Natural Resources Management Policy, the Gender Equality and Women's Empowerment, and Targeting policies. The report also considered relevant environmental and social laws, policies and guidelines of CIV.

1.4. Stakeholder Consultations

257. Consultations were held with the Ministry of Agriculture, the National Environmental Standards and Regulations Enforcement Agency, Ministry of Environment and agencies, Ministry of Women and social affairs and other sector ministries. At local level, a wide range of consultations were held with local communities and beneficiaries, CBOs, NGOs, private actors and religious chiefs. A detailed list of consultation is attached in annex and described under the section consultations in the Funding Proposal.

1.5. Disclosure of ESMF

258. IFAD's Policy on the Disclosure of Documents (2010) requires full disclosure to the public, and includes information notes on projects being developed for Board presentation, agreements for approved loans and grants, and project/program design documents. This ESMF will therefore be disclosed on IFAD's official website (<https://ifad.org>). In addition, the ESMF is be disclosed on ministries official website, IFAD website, so that all stakeholders are able to access the document.

1.6. Report Outline

259. This is complemented by a proposed screening approach (and relevant screening forms) for the eventual sub-projects. The report concludes with a plan for monitoring of environmental, climate and social impacts (chapter 9) as well as some suggestions for capacity-building and training (chapter 10).

A. Description of the Proposed Project

1.1. Project Area and Target Group

260. The project will cover the regions of Bagoue, Poro, Tchologo, Hambol and Gbêkê. These regions are characterized by a higher incidence of poverty ranging from 57 percent to 83 percent compared to a national average of 46.3 percent. These regions are located in the Sudanese dry savannah zone characterized by a tropical monomodal climate such as Sudano-Guinean marked by a single rainy season occurring from May to September-October. Precipitation ranges between 1,100 mm and 900 mm / year and humidity levels are around 40% to 50%. The rainy period favorable for crops spans five months. This zone constitutes the main cotton production and breeding basin. The production systems are diversified in this area which was traditionally pastoral, then cotton and which became increasingly producing cashews (cashew) and mango. Rice cultivation (rainfed and lowland) occupies 40 to 50% of the exploited land, followed by cotton, yam, peanut, corn and vegetable products. This region also has an important traditional mango orchard and of some modern type plantations.

261. This region has long been neglected since the colonial era because of the choice of development by “growth poles” based on the exploitation of agricultural products marketable adapted to the soil of the Center and the South well watered (coffee, cocoa, oil palms, etc.) and unsuitable for the northern savannah. We are gradually witnessing the development farming in the northern areas, with the development of cotton, cashew and mango as well as market gardening. This area was selected on the basis of several criteria, including understood: (i) good potential in cultivable, irrigable and rainfed land; (ii) areas of excellence for the development of pastoral and fish farming activities; (iii) high population density and job seekers; (iv) start to structure farmer organizations; (v) strong potential for the development of agricultural entrepreneurship; (vi) complementarity with others agricultural development initiatives and programs, and (vii) severe degradation of agricultural infrastructure production and marketing.

262. By promoting the value chain approach, the project will aim to reach all the actors involved in the different segments of the three-targeted sectors. These are: (i) small producers and their organizations; (ii) actors downstream of the sectors including processors, traders and consumers; (iii) actors carrying out related activities and trades including suppliers inputs, suppliers and repairers of agricultural materials and equipment, transporters; (iv) private sector actors who will foster profitable, inclusive and fair in terms of value chains. Rural women 11 and rural youth (15-35 years) who represent a significant ratio at the level of the three sectors, will constitute privileged sub-groups because of the difficulties they encounter in accessing factors of

production and the market, but also opportunities that the three sectors offer to increase their income and create jobs to the different segments of the value chain

Box1: Youth Targeting Criteria

- a. Expression of interest to be endorsed by a community institution: as an investment project, screening and selection of applicants, will be handled by a competent and credible service provider, with the involvement of community institution, youth in agriculture organization, women group, government representative and CSO
- b. Persons between the age of 18 and 35 years,
- c. Clarity in the enterprise of applicants choice/interest
- d. Comfort Letter from 2 credible guarantors in the community
- e. Undertaken to keep to the code of conduct of the incubation model, which include (i) no side-selling of produce – all sales to go through an out-growers model; (ii) no fighting on the job, and (iii)no stealing/pilfering
- f. Based on the level of social risk and opportunities available to them as appear in the Table 2, Beneficiaries selection will be in the proportion of 60 percent male youth and 40 percent female youth

Table 1 : Level of Risk, Challenges and Opportunities facing young males and females

Social Group	Women			Men		
	Risks	Challenges	Opportunities	Risks	Challenges	Opportunities
Individual	Victimization, Migration, Low level crime	Unemployment, Social Exclusion, Land access, Limited skills	Apprenticeship, Access to land and finance, Service jobs	Migration, Criminality, Militancy	Unemployment, Land access, Limited skills	Apprenticeship, Access to land and finance, Service jobs
Household Leader	Victimization	Underemployment, Limited skills, Limited free time	Service jobs, Access to finance	Migration, Criminality, Militancy	Underemployment, Limited skills	Service jobs, Access to finance
Graduate	Migration, Low level crime	Unemployment, Underemployment, Access to resources	Roles as incubators, Access to growth markets, land and finance	Migration, Criminality, Militancy	Unemployment, Underemployment, Access to resources	Roles as incubators, Access to growth markets, land and finance
Non-Graduate	Victimization, Migration, Low level crime	Unemployment, Social Exclusion, Limited skills, Access to resources	Apprenticeship, Access to land and finance, Service jobs	Migration, Criminality, Militancy	Unemployment, Limited skills, Access to resources	Apprenticeship, Access to land and finance, Service jobs

263. **Gender Strategy:** For effective women inclusion, this program targeting strategy will promote women favourable enterprises such as vegetable, fish, poultry, honey production, processing and marketing for income that also support household food security and nutrition as described in IFAD baseline investments. There will also be provision to expand the commodities supported in each state to include opportunity commodity/enterprises, which fall within the range

of women friendly enterprises. Strategies to realize this will include: (i) events appropriate to women's time and venue constraints; (ii) self-targeting of women's only groups; (iii) provision of 50 percent slot for women in benefiting community; (iv) ensuring that women hold at least 30 percent of leadership positions in commodity associations; (v) engagement of a minimum of 30 percent of women in the project management team, among others. The project will also adopt and promote the use of Gender Action Learning System (GALS) that has been successfully used by the RUFIN programme. Finally, nutrition activities on homestead vegetable production or related commodity will target women groups.

1.2. Goal, Objectives and Impact Indicators

264. The goal of the project is to reduce the projected direct effects of the negative impacts of climate change on 15,600 direct and indirectly 93,600 beneficiaries of which 45% will be women.

265. The **project development objective** is to *implement of a set of concrete adaptation options in three targeted and profitable agricultural sectors (rice, cassava and cocoa).*

266. The achievement of the project objective at the end of the project life will be measured by the following indicators, among others:

- At least 80 percent direct beneficiaries 15600 have increased their food security (reduction in length of lean/hungry season, increased number of meals a day, increased food diversity and quality) by at least 50 percent.
- At least 100% of beneficiaries have access to climate information systems and protection schemes
- Number of farmers reporting an increase in cocoa productivity (45% women)
- Number of farmers reporting an increase in rice productivity (45% women)
- Number of farmers reporting increase in cassava productivity (45% women)
- Crop yield change in target areas No of target farmers adopting climate resilient farming practices
- Number of cocoa and improved rice nurseries established
- Number of cassava cuttings, cocoa and improved rice seeds distributed
- Number of farmers reporting more diverse income sources (disaggregated by gender)
- Number of Fish farms as alternatives source of financing (disaggregated by gender)
- Number of earth dams constructed
- Number of fisherman adopting climate resilient fishing
- Number of meteorological stations installed.
- Number of staff of the SODEXAM and meteorological institute trained (disaggregated by gender)
- Number of sectoral policies integrating climate change risks (thanks to the training provided by the project) – Under SODEXAM management
- Number of knowledge management products disseminated

i. Project Implementation Structure

267. This program will be implemented through a national PMU under the ministry of Environment and Sustainable Development. The project will be coordinated by the Ministry of Environment in coordination with the Ministry of Agriculture, Ministry of Rice, Ministry of Forest and Water. IFAD is providing support to the implementation of baseline investments through PADFA. FAO and UNDP will act as Executing entities providing technical advisory support to the PMU and other local partners

1.3. Lessons on Social and Environmental Management

268. Experience from previous IFAD-supported projects in Côte d'Ivoire indicates that sound technical backstopping is critical for results in natural resource management and climate change adaptation. Most of IFAD supported projects were designed to address climate change and environmental issues because the region is highly prone to drought, flooding, high humidity induced pests and diseases, pollution and retardation of agricultural productivity. However, due to lack of technical depth in the management team to incorporate climate change resilience and environmental degradation mitigation measures and in a fragmented way, this project will mainstream climate change adaptation and environmental mitigation measures to promote climate change smart agribusiness for the beneficiaries.

1.4. Environmental and Social Category

269. Based on IFAD Social, Environmental and Climate Assessment Procedures (SECAP), the overall Environment and Social risk category for is 'B' and high for climate risks. The baseline investments are natural resources-based value chain enterprise development projects, which will mainly consist of small-holder agricultural production and may also include the development of market infrastructure (such as construction/rehabilitation of rural feeder roads, small scale agro-processing facilities, etc). The environmental impacts will be substantially place-based and commodity-specific across enterprise clusters and communities around the project and most of them can be readily remedied by appropriate preventive actions and/or mitigation measures. However, the exact locations for enterprise development are not yet unknown and full disclosure of the environmental and social risks and remediation actions through placed based and context-specific environmental and impact assessment (ESIA) are not possible at this time. Therefore, environmental and social screening will be conducted for each enterprise cluster location and, where required, a full ESMP will be required to guide project implementation.

1.5. Institutional Framework

270. The **2016-2020 National Development Plan (PND – Plan National de Développement)**, under revision by the Government, is the reference policy framework. The PND aims to achieve wealth and decent job creation by promoting the private sector and supporting inclusive development. It revolves around five strategic objectives: (i) strengthening the quality of institutions and governance; (ii) speeding up the development of human capital and social well-being; (iii) speeding up the structural transformation of the economy through industrialization; (iv) developing infrastructure and preserving the environment; and (v) strengthening regional integration and international cooperation. It is aligned with the continental Comprehensive Africa Agriculture Development Programme (CAADP) and the Sustainable Development Goals. The COSOP is aligned with the National Agricultural Investment Programme (PNIA) II (2018-2025), which aims to

enhance the value addition of agricultural commodities while protecting the environment and the well-being of the population. Specially, the COSOP will support the programme 1, 2, 3, 5 and 6 of the PNIA II. In addition, it is aligned with the National Communication on Climate Smart Agriculture (NCCSA), the National Strategy for Disaster Risk Management (SNGRC) and the National Programme on Climate Change (PNCC).

1.6. Intended Nationally Determined Contribution (2015)

271. The project will comply with Côte d'Ivoire's **Nationally Determined Contribution (NDC)** to the Paris Agreement that consists of plans for mitigating and adapting to climate change through the protection of water resources, cultivation of climate change-resistant crops, developing agroforestry, protecting soil fertility, and supporting sustainable fisheries and livestock practices.

IFAD Guidelines

1.7. IFAD Safeguard Policies

272. The IFAD'S ten Environmental and Social Values and Principles are relevant to the this project as well as the AF³⁴ These social values and principles are:

- Address the vulnerability and adaptation needs for the rural poor
- Promote the sustainable use of natural resources and protection of key ecosystems.
- Focus on partnership-oriented initiatives for improved social and environmental quality.
- Address environmental and social impact assessments of agricultural and non-agricultural activities in an integrated manner.
- Incorporate externalities and minimize social costs.
- Implement participatory approaches, with special emphasis on the role of women.
- Promote the development of Indigenous Peoples and other marginalized groups (pastoralists, hunters and gatherers).
- Promote environmentally sound agricultural and manufacturing processes.
- Ensure systematic environmental and social monitoring.
- Undertake Strategic Environmental Assessments

1.8. IFAD SECAP Procedure³⁵

273. The objectives of the Environment and Social Impact Assessment Study in the IFAD's SECAP procedure are to:

- identify key linkages between rural poverty and environmental management and assess the potential environmental and social impacts of the proposed project on the natural resource base and livelihoods of communities in the target areas;
- explore and identify key options for advancing environmental and social sustainability; and
- recommend key opportunities to influence IFAD support towards environmental sustainability and climate smart development.

This ESMF is intended to provide options that would inform and thus improve decision making of the project design. The key environmental, climate change and social issues to be addressed include: (i) challenges faced to meet its rural development and food security goals; (ii) the major environmental, climate change and social issues that have a bearing on IFAD operations in the country; (iii) the direct impact and multiplier effect the mentioned issues have on the resilience of ecosystems and productivity of land and crops, natural resource

³⁴ <https://www.ifad.org/documents/10180/a5e3ffcc-0ed7-4bc6-b523-39c25dc1edd8>

³⁵ <https://www.ifad.org/documents/10180/a36f992c-5e31-4fac-8771-404bea02796b>

management and rural livelihoods; (iv) the scale of volatility and risks resulting from climate variability and change; and (v) regulatory frameworks which are related to rural development and environmental issues.

274. The results of the ESMF and subprojects ESIA are: (i) an assessment of the environmental (and social/economic/institutional) issues particularly in the agricultural and rural development sector; (ii) the identification of links with relevant ongoing initiatives; (iii) the provision of specific measures, recommendations including opportunities to optimize adaptation, environmental management and resource use; in the project area. These results will shed light on the important opportunities available to build resilience and adaptive capacity in the program/project under development.

The Key Principles to guide the ESMF and the subproject ESIA are to:

- Look beyond the traditional 'do no harm' safeguards approach to mitigating environmental, climate change and social risks towards 'doing good' through greater focus on sustainability and management of environmental (rehabilitating degraded lands, seizing adaptation/mitigation opportunities and transforming the underlying inequalities that undermine inclusive development, etc.) and social impacts and risks;
- Begin the ESIA with a scoping exercise with the objectives of identifying as much as possible the relevant social, environmental, and climate change issues, so that baseline data collection and impact assessment can focus on them.
- Place strong emphasis on identifying opportunities and develop an appropriate management plan to enhance results and impact;
- Identify and compare alternative scenarios to recommend realistic proposals for design mission consideration;
- Identify capacity needs required to effectively implement the environmental and social management plan;
- Produce a realistic monitoring plan, including appropriate change management processes.
- Engage affected communities and other interested stakeholders throughout the ESIA process, from scoping to review and comment on the final draft report prior to decision-making.

2. The IFAD Climate Change Strategy (2010)³⁶

275. The IFAD's climate change strategy calls for the IFAD to more systematically respond to increasing demands from clients for technical support and innovation to better respond to climate change. This means analyzing and addressing climate change challenges during the early stages of program and project design to build resilience and adaptive capacity. The strategy goal and purpose are to:

To support innovative approaches to helping smallholder farmers build their resilience to climate change

To help smallholder farmers take advantage of available mitigation incentives and funding

To inform a more coherent dialogue on climate change, rural development agriculture and food security

The main strategy output is a more 'climate-smart' IFAD, where climate change – alongside other risks, opportunities and themes – is systematically integrated into core programmes, policies and activities:

- On operations, climate change can be – and in many cases already is – factored into IFAD's operating model. This means incorporating it into our toolkit for the early stages of country programme and project design and for implementation.
- On knowledge, innovation and advocacy- IFAD will explore new arrangements for sourcing climate-related expertise, share ground-level experiences to ensure their application throughout IFAD-

³⁶ https://www.ifad.org/topic/tags/climate_change/2154532

supported programmes, and continue our work to shape the global dialogue on climate change for smallholders.

- On resource mobilization, the focus is to make IFAD's expanding overall portfolio climate-smart. Increased supplementary climate funds will continue to be sought to deepen the integration of climate change into IFAD's core programmes and to cover the increased cost this implies.
- On internal organization, IFAD will make greater use of existing in-house skills and people, and will implement a new organizational structure that brings together and increases its staff capacity on climate and the environment. It will also continue to demonstrate the values of environmental awareness internally.

3. The IFAD Environment and Natural Resource Management (ENRM, 2011) Policy³⁷

276. Sustainable environment and natural resource management (ENRM) lies at the heart of delivering poverty reduction for rural people. Poor rural people face a series of interconnected natural resource management challenges. They are in the front line of climate change impacts; the ecosystems and biodiversity on which they rely are increasingly degraded; their access to suitable agricultural land is declining in both quantity and quality; their forest resources are increasingly restricted and degraded; they produce on typically marginal rain fed land, with increased water scarcity; energy and agricultural input prices are on a rising long-term trend; and declining fish and marine resources threaten essential sources of income and nutrition.

277. Environmentally damaging agricultural practices are a major driver of these challenges. There is growing concern over inappropriate approaches that drive excessive use of fertilizers and pesticides, pollution of waterways and aquifers, build-up of salt in the soil, water scarcity in major river basins, declining levels of groundwater and loss of crop biodiversity. Large parts of Sahel rely on rainfed agriculture with little or non-existent use of organic or inorganic fertilizers, soil erosion and poor access to seed varieties. Weak governance, damaging policies and changing consumption patterns lie at the heart of this environmental degradation: poor rural people, including smallholders, are often disempowered and thus unable to sustainably manage natural resources; a lack of clear land access and tenure rights removes incentives to maintain natural assets; distorting trade policies and fossil-fuel and other subsidies are key drivers. The response requires an 'evergreen revolution', powered by sustainable agriculture that balances crop/livestock, fisheries and agroforestry systems, so that surplus inputs are avoided and soil fertility and ecosystem services are not compromised, while production and income are increased. Building on a growing body of evidence of the success of sustainable agriculture investments, there is a huge opportunity to further scale up multiple-benefit.

278. IFAD's ENRM stresses that project designs present new opportunities to improve systematic integration and scaling up of ENRM of the portfolio. Such integration can help IFAD to engage in new and strengthened partnerships with specialized entities for enhanced and effective responses to issues associated with natural resources and, climate variability and change. ENRM is at the core of delivering IFAD's poverty reduction and sustainable agriculture mandate because its target groups rely directly on the environment and natural resources for their livelihoods, and client demand for support for ENRM is increasing.

4. Country strategic opportunities programme (COSOP),

³⁷ https://www.ifad.org/topic/resource/tags/climate_change/2096936

279. Taking into account the Government ambition of transforming the agricultural sector and the IFAD comparative advantage, the 2020-2025 COSOP revolves around the following strategic objectives:

- **Strategic objective 1 (SO1): Improve national policies and strengthen national institutions through effective partnerships.** SO1 aims to build the enabling environment for the development of agricultural (crop, livestock, forestry and fish) value chains.
- **Strategic objective 2 (SO2): Enhance the productivity and strengthen the resilience of smallholder farmers to climate change.** SO2 aims to increase productivity and production in a sustainable manner, taking into account climate change.
- **Strategic objective 3 (SO3): Enhance value addition and access to markets.** SO3 aims to foster value addition and improve access to markets in order to create opportunities for descent jobs and increase income, as well as provide high-quality services to smallholder farmers and micro, small and medium enterprises.

280. Focusing on the poorest regions of the country, the COSOP will target all stakeholders working along the value chains, particularly rural women and youth, and strengthen partnership with the private sector. The selection of the value chains will be based on diagnostic studies that will identify constraints and opportunities to creating descent employment opportunities and increasing income to induce greater food and nutrition security. IFAD will continue to focus its support to the resilience to climate change and the achievement of the relevant SDGs.

281. The COSOP was prepared in a participatory manner with the aim of working with all stakeholders along the value chains, as well as service providers and development partners, particularly the UN agencies including the Food and Agriculture Organization of the United Nations (FAO), the World Food Programme (WFP), the International Labour Organization (ILO), the United Nations Development Programme (UNDP) and UN Women.

Country Background

1.1. General economic situation.

282. Côte d'Ivoire has an area of 322,463 km². Its population was estimated in 2014 at 22.6 million inhabitants with 77.3% of young people under 35 years of age (RPGH, 2014). Since the end of the post-electoral crisis in 2011, the Ivorian economy has experienced strong average economic growth of 9.5% between 2012 and 2015. This economic recovery has been mainly supported by public and private investments and by efforts made in as part of the National Development Plan (PND) for business improvement. However, in 2016 and 2017, the Ivorian economy experienced a slight regression in its growth rate which fell from 8.8% to 7.8% respectively due in part to: (i) the prolonged fall in the price of cocoa on international markets; (ii) the rise in the price of oil and (iii) social unrest. The Ivorian Government will therefore have to put in place rigorous budgetary and monetary policies allowing better control of public finances and keeping inflation at a moderate level while ensuring more inclusive and better shared growth.

1.2. Situation of the agricultural sector and rural poverty

283. The agricultural sector (agriculture, animal husbandry and fishing) occupies a preponderant place in the economy of the country. It employs almost 70% of the working

population and represents 21% of the GDP and more than 60% of export earnings (MEF, 2015). The performance of the Agriculture sector has deteriorated in recent years, with a 2% drop in GDP in 2016, mainly due to bad weather conditions and the fall in prices of several export products. The country has enormous agricultural potential, with a cultivable area of around 23-25 million hectares (ha) and an irrigable potential of 200,000 ha.

284. Ivorian agriculture is mainly made up of perennial crops which occupy the majority of the land (72% compared to 27% for food and market gardeners). It is characterized, among other things, by: (i) a low level of productivity due to low use of agricultural inputs and low mechanization; (ii) small farms; (iii) a strong seasonality of food production and strong annual variations due to climatic vagaries; (iv) the aging of the agricultural workforce, as well as the disinterestedness of young people in the farming profession.
285. Livestock, providing employment for young people, represents only 4.5% of agricultural GDP and 2% of total GDP. The coverage rate of national needs for meat and offal was 26.69% in 2014. The constraints in terms of breeding are: (i) low productivity of local genetic material; (ii) the high cost of inputs; (iii) the absence of a coherent policy for the management of rural areas; and (iv) the lack of financing suitable for investments or the modernization of farms.
286. Fishing represents a low GDP (0.9% in 2014), directly generates 100,000 jobs and indirectly supports 700,000 people. The poor performance of national production is largely due to: (i) the inadequacy of its regulatory and legislative framework; (ii) the narrowness of the Ivorian continental shelf; (iii) the obsolescence of fishing gear and a poorly mechanized artisanal fishing practice; and (v) erosion and pollution of inland waters.
287. **Rural poverty.** In 2015, the national household survey revealed a reduction in poverty (46.3% compared to 48.9% in 2008). This decline is explained by the good economic performance recorded since the end of the socio-political crisis in April 2011. As in previous years, poverty is more pronounced in rural areas than in urban areas (56.8% against 35.9% , 2015). Rural poverty increased from 62.5% in 2008 to 56.8% in 2015 and affects farmers especially (5 out of 10 farmers are poor).
288. **Food and nutritional security.** Food insecurity affects 12.8% of households, with a higher incidence in rural areas (15%) than in urban areas (10.6%). Nationally, 30% of children under the age of 5 suffer from chronic malnutrition. This rate is at the limit of the "critical" threshold of 40% in the North and West regions (SMART, 2011). From a nutritional point of view, it should be noted that in 2014, 20.5% of the Ivorian population did not reach the minimum level of caloric intake (ENV, 2015).
289. The National Development Program (PND, 2016-2020) constitutes the single frame of reference for all of Côte d'Ivoire 's development strategies and interventions. It aims to create wealth and employment by promoting the private sector and inclusive development. In the agricultural sector, he intends to accelerate the structural transformation of the economy by establishing a strong link between agriculture, agribusiness and industry.

1.3. Environmental challenges and their effects on agricultural development and rural poverty

a. Imbalance of soil nutrients

290. Soil is the foundation of agricultural production. Its fertility can directly affect crop growth with changes in soil carbon (C), nitrogen (N) and microbial activities, which are likely to change with climate change, temperature and variations in precipitation. As the material basis for plant growth, the soil is also an important medium for the accumulation and decomposition of pollutants. The rapid increase in population has resulted in an increased demand for agricultural land. This, in turn, has led to a reduction in the size of farms per household. As a result, fallow periods are either shortened or nonexistent, resulting in an overwhelming tendency to deplete nutrients from the soil. In addition, the irrational application of chemical essences, herbicides and pesticides means that the soil environment is increasingly polluted and degraded.

b. Evolution of plant cover and forest resources

291. Between 1950 and 2000, the country lost 80% of its plant and forest cover, ranking Côte d'Ivoire at the top of tropical African countries in terms of deforestation. The dense humid forest decreased from 6.8 million hectares in 1955 to 1.5 million hectares in 1999. In the absence of a marked intensification of cultivation techniques, the potential for coffee and cocoa production depends mainly on the creation of new plantations.

c. Post-harvest activities

292. the risks identified are i) poor management of waste and wastewater from processing units; (ii) the use of conventional energies (wood, charcoal) for the operation of storage, processing or marketing units instead of green energies by entrepreneurs due to a cost to dissuasive investment or their unavailability on the market; (iii) poor implementation of infrastructure leading to watercourse pollution or weakening of the environment.

1.4. Characteristics of the Climate

293. The Program intervention area corresponds to the Sudanese dry savannah area characterized by a monomodal tropical climate of the Sudano-Guinean type (26 ° C to 27.5 ° C) marked by only one rainy season occurring from May to September-October. Precipitation fluctuates between 1,100 mm and 900 mm / year and the humidity levels are in the range of 40% to 50%. In a Northeast gradient south, the landscape consists of grasslands and shrubs, then thickets of trees and finally forests- galleries on the banks of rivers.

294. **Reduction in rainfall.** Over the past five decades, rainfall annual average has dropped significantly along an East-West and North-South gradient. Variation relative calculated between 1950-1960 and 1970-1990 shows a decrease in precipitation of about 28% in the northern part of the country. So in the Intervention area, the rains annuals remain less than 1000 mm

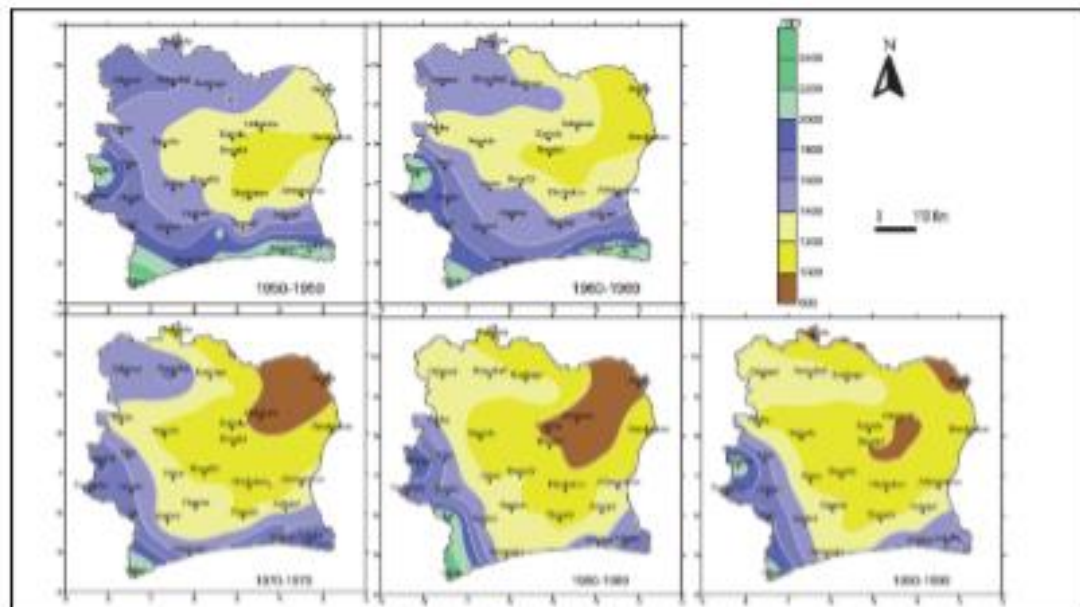
1.5. Climate change

295. The country is very susceptible to climate change shocks. Côte d'Ivoire's Climate Change Vulnerability Index is among the highest in the world, ranking the country 145 out of 181.38 The country's vulnerability is attributable to the over-exploitation of forests (which totalled 2 million ha

³⁸ <https://gain.nd.edu/our-work/country-index/rankings/>

in 2018 in contrast to 16 million ha at the beginning of the last century). This shrinking of forest land has contributed to the over-exploitation of soil that has resulted in fertility loss, erosion and an increase in greenhouse gas emission.

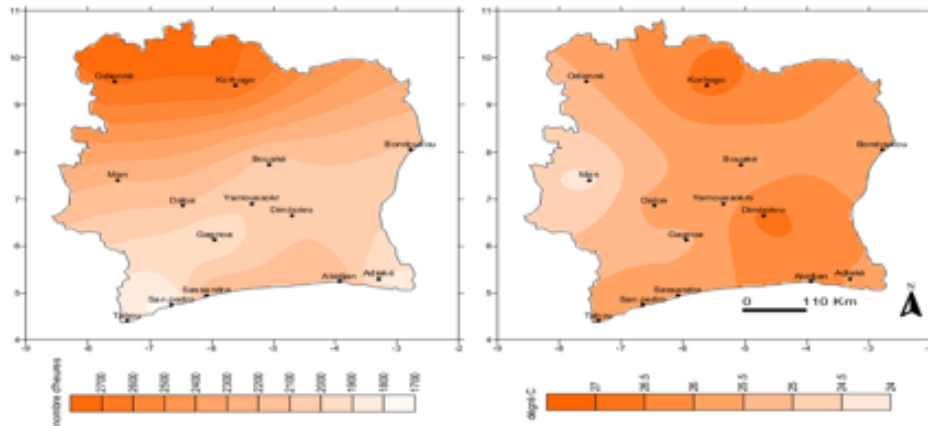
: Hauteurs pluviométriques, moyennes annuelles entre 1950 et 1999



Source : FIDA, PROPACOM, Document de travail n°3 Mesures d'adaptation au changement climatique

296. Increase in annual temperatures and insolation. Temperatures recorded follow a south-north progression with the lowest annual temperatures in the mountainous area in the West and the highest in the far North. The map of the average annual accumulations of the number of hours of sunshine shows a distribution according to a South-North climatic gradient close to that of temperatures. The increase in air temperature has notable consequences with increased evapotranspiration of soil and plants, by reducing the amount of water available for plant growth. Furthermore, the study of climate change on water resources in the case of the watersheds of the Bandama and Sassandra rivers showed that the average monthly temperatures in these two basins should increase between 2.3 ° C and 4.1 ° C over the next four decades. This increase, combined with declining rainfall and water resources, could affect agricultural production and the total production of electrical energy from dams built on these rivers

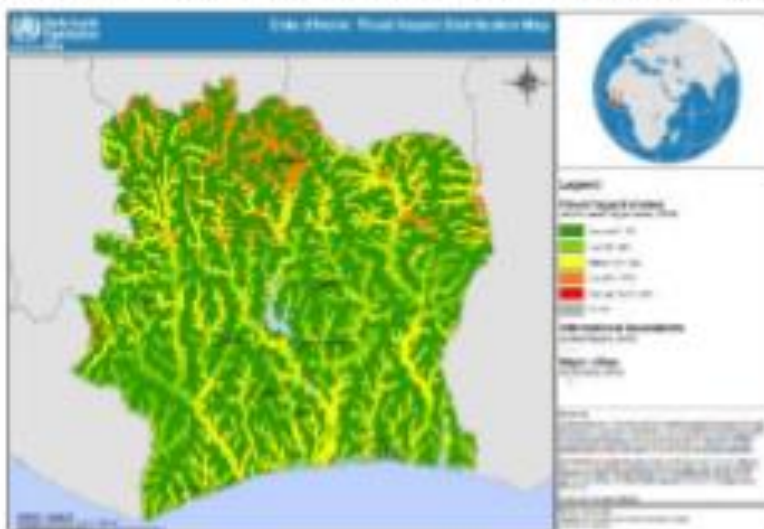
Figure 2: Nombre d'heure d'insolation (gauche) et température annuelle (droite) entre 1960 et 1997



297. The aridity index will increase but will remain below 2 indicating that the area will remain suddenly Guinean with low humidity forests and humid savannas. Bush fires will be more frequent and would destroy pastures and plantations. In Agroclimatic Zone 4 (Korhogo and Ferké): the current average temperature of 26-28 ° C will change to 29-31 ° C in a century in 2110. The current average annual rainfall of 900-1400 mm / year will decrease between 700 and 1200 mm / year. The aridity index will increase and go above 2 transforming the northern region of the Coast Côte d'Ivoire in a semi-arid zone and particularly at risk because soil erosion could be irreversible

298. **Climate projections.** The results of projections to 2030 and using the scenario AR5 show: i) an increase in average temperatures of around 1.2 ° C which is already relatively large; ii) the drier May-June months; iii) no strong variation in precipitation at Bouaké (Bandama valley) and Korhogo (Poro region); iv) an increase in heavy rains from April to September-October at the level of the entire intervention area.

Figure 5: Prévisions sur les risques d'inondation



Deviations (in days) from the length of the growing season

Impact, potential risks and mitigation measures of the Program on the plans, environmental and climate change

302. The key issues are: i) there are four specific main barriers the project intend to address in order to increase productivity of cocoa, rice and cassava value chains in the targeted areas. The number of barriers hinder better agricultural productivity are:
303. Inadequate climate information services, knowledge and understanding of climate change impact impacts to better plan response in cocoa, rice and cassava VCs: climate knowledge, reliable information to better understand the various forms of climate risks in agriculture. Accurate, reliable and timely climate information and robust early warning systems (CIEWS) are crucial for reducing losses and damages resulting from climate-related extreme weather events, increasing the resilience of vulnerable populations and enhancing the capacity of local rural communities to adapt to future changes in climate. The hydro-meteorological infrastructure capacity in Côte d'Ivoire is very low, with observation network density (number of stations per 10,000 km sq.) as low as 1.7 in the Côte d'Ivoire compared to 6.2 in Malawi and 45.2 in Rwanda. This prevents decision makers, farmers to inform and select the right adaptation measures in the targeted sectors (cocoa, rice, cassava). The first objective of the proposed project is to Strengthen climate weather information/ services to support adoption of the best concretes adaptation measures in cocoa, rice, cassava sectors
304. Weak and insufficient capacities of farmers to manage climate risks in cocoa, rice and cassava value chain. Rural Ivorian communities along cocoa, rice and cassava value chains to cope with the effects of climate change is expected to be significantly challenged, and potentially overwhelmed, by the magnitude, and rapidity of onset, of the impacts of future Climate change. This requires preparedness, readiness and specific skills to better manage climate risks. Currently they lack of capacities to identify climate risks and adopt the right adaptation measures. The second objective of the project is to increase production of climate resilient cocoa, rice and cassava VCs by building the farmers capacity to manage sustainability natural resources
305. Low adoption of the most appropriate adaptation/ mitigation practices / technologies, water infrastructures to address low agricultural productivity in the cocoa, rice and cassava VCs: Agricultural productivity is low due to many factors of which climate change. Recurrent droughts, crops diseases, floods affect crop yields, production and productivity There are proven adaptation technologies and practices that could be used to shift from business as usual toward higher adoption of concretes adaptation measures in cacao, rice and cassava value chains. The second objective of the project is to increase production of climate resilient cocoa and rice by promoting the adoption of the best climate resilient adaptation activities and rural infrastructures while providing alternative livelihoods such as agricultural production, fish and poultry farming for youth and women along the water basin.
306. Lack of enabling environment for institutional effectiveness and coordination mechanism. There is often limited coordination, information and data sharing between different government and non-governmental entities, each of which serve a key role in the CIEWS value chain and use in cocoa, cassava and rice value chains. Policies to remove barriers to uptake and investments in CIEWS are not in place within national and local governments. Uncoordinated interventions limit the effectiveness of existing adaptation measures in the selected value chains. The third objective is to strengthen the institutional capacities of these agencies to effectively carry out their respective mandates in coordination with other sector ministries particularly the ministry of agriculture, FIRCA, ministry of environment.

1.1. Potential impacts and risks

307. **At the social level.** To reduce these risks, the project will target small producers more vulnerable to markets and other different segments of the value chains. It will pay attention specific to women and young people because they have: a very low level of training, limited access to productive capital and technical or financial or market support services. The improvement their access to knowledge (information / knowledge) and productive assets will allow diversify and strengthen their livelihoods and enable them to increase their income. The women and young people are the majority players in the 3 targeted sectors, representing for example 90% for the vegetable and mango sector. The will minimize the constraints related to: the supply of inputs, the transformation and the routing of production on the markets (transport, energy, storage), the lack of knowledge of the issues and prices which sometimes results in distorted competition (illegal agreements by large producers), various legal and sometimes illegal punctures, which encumber the meager profits which can be realized
308. Particular attention will be paid to potential infrastructure conflicts such as developed lowlands, processing, storage and marketing, etc. These infrastructures, through the opportunities they can create, can make the object of capture by the elites, of intergenerational conflicts or between men and women or still be diverted from their primary use. Their management can cause problems related to the erosion of the provisions put in place during the launching of projects (creation of a management, setting up contributions for possible upkeep and maintenance costs) and including difficulties in collecting contributions and maintaining infrastructure regularly in the medium term. Through direct targeting actions, advisory support, information, education and communication, and dissemination of information through different media, ensuring that these constraints are minimized.
309. Positive aspects deserve to be highlighted: (i) the increase in agricultural production induced by market demand and the valuation of agricultural products, the introduction of varieties efficient and resilient to CC, (ii) improving farming techniques, better management of water, use of fertilizers, (iii) recovery of waste and by-products from supply chains. All these activities will improve income levels and living conditions for beneficiaries.
310. **At the environmental level** at the level of processing and marketing: (i) the use of conventional energy sources, in particular wood energy for operation processing units, which could accentuate deforestation in an area already strongly weakened; (ii) near the marketing infrastructure, pollution caused by waste organic, plastic bags and packaging; (iii) the rehabilitation of hydro-agricultural facilities and the construction of processing, storage and marketing infrastructures envisaged can generate negative effects on the environment both during the works and during the phase such as: (i) a high risk of degradation of water and soil quality if none measures are not taken for good management of waste and effluents from processing units; (ii) loss of biodiversity and soil degradation due to monoculture (only one variety in crop rotation) and habitat for some species during the works with clearing of sites, creation of possible access tracks, use of wood for the construction.
311. **At the production level:** (i) the intensification of market gardening is accompanied by greater use of plant protection products due to the sensitivity of these crops to diseases and parasites. Misuse could lead to serious water contamination and soils, and at the sanitary level, exposing producers and consumers to products toxic hazardous if strict protocols are not in place; (ii) distribution of inputs and including organic fertilizers. The risk lies in the fact that the availability of biofertilizers does not is not insured, it must be ensured that in accordance with the FAD, biofertilizers are used; (iii) for hydro-agricultural developments, risks of increase in

households conducive to development of disease vector organisms (bilharziasis, amoebiasis, malaria, etc.).

312. Against the baseline scenario; key obstacles mentioned above that lead to low cocoa, rice and cassava productivity, food and nutrition insecurity, exacerbated by climate change and climate variability; the main components, outputs and activities are proposed below :

313. The project proposes the implementation of a set of concrete adaptation options in tree targeted and profitable agricultural sector (rice, cassava and cocoa). A set of enabling actions designed to both strengthen national capacities and institutions as well as the CIEWS is interlinked to the concrete adaptation measures which will lead to building the resilience of the cocoa, cassava and rice value chains in the most vulnerable areas to climate change in Côte d'Ivoire. Concrete adaptation measures are direct application of integrated climate resilient production, post-harvest and marketing systems. New technologies and best knowledge aim at promoting the paradigm shift and behavioural change in the rice and cocoa production and linkages to markets.

314. Reflecting the key development challenges and adaptation needs while being fully aligned with the three components, the project will deliver the stated objective through three components:

- **Component 1:** Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.
- **Component 2:** Climate-proofed agricultural production and post-harvest combined with livelihood diversification.
- **Component 3:** Institutional capacity building, policy engagement and knowledge management.

315. The project features cross-cutting and achieves strong synergies among the components and enables local and national administrations to strengthen their capabilities to mainstream climate change considerations in agricultural value chain in agricultural activities. The project activities are expected to affect improve the livelihood of the vulnerable households in the Bandama watershed vulnerable to climate change induced hazards. The multi-disciplinary or synergy of interlinked intervention measures such as infrastructural capacity (early warning system, agricultural technologies, post-harvest equipment's), human capacity (local capacity building, government, cooperatives, etc...) and institutional capacity (M&E coordination, policy framework) are aimed to building climate resilient to avoid and/or minimize climate-induced risks.

316. As the result, the project is expected to (i) improve hydro met and warning systems for effective adaptation, (ii) strengthen rural community's capacity to understand climate risks, (iii) provide access to post-harvest technologies and climate resilient farming systems, (iv) diversify income generating activities through resilient fish farming and conservation, (v) strengthen national level climate information management system, and (vi) strengthen project coordination, monitoring and evaluation. These outputs are expected to enable rural communities to increase climate-smart agricultural investments that translates to higher yields, assets and incomes that improves food security and livelihoods throughout the seasons. It is important to note that the proposed components and activities are fully aligned with Côte d'Ivoire's strategic goals and expected results. Not only does it is aligned with national strategy, the components and activities also contribute to sustainable development goals (SDGs) especially goals 1, 2, 3, 5, 8, 9, 10, 13 and 15³⁹.

³⁹ <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

317. **Climate risks** .Climate risks are primarily drought periods which tend to be prolonged and the heavy rains which cause erosion phenomena and floods.
318. **Climate change and adaptation to change**. The Program will take into account climate change issues by proposing various adaptation measures in depending on the problem of the intervention sites. Implemented in an area where resources already degraded, and where the degradation process will continue, the The program will strengthen the management of natural resources which will form the basis of the sectors supported.
319. **Agricultural areas** . Some analyzes show that agricultural production remains before all very significantly correlated to the areas thus demonstrating that the variation in production is mainly due to that of the areas exploited..
320. **Water control** . The rehabilitation of dams and reservoirs associated with the use of Californian or drip style irrigation systems will maintain and / or increase food production to high levels. The perception of climate change by the farmers is illustrated by the difficulties of access to water a primordial element in the environment rural; lack of rain in agricultural area seen as part of change climatic. The establishment of an agro-weather information service and the control of tools weather forecast as initiated by PADFA and the Emergency Program will: (i) educate children producers on climate change and, (ii) involve leading farmers in the validation and the dissemination of information on new cultural calendars, and (iii) allow wide dissemination agro-meteorological messages through community radios.
321. crop production. The water resource necessary for production represents the point more climate sensitive. To limit the impact on water resources, measures water saving will be promoted by the project, such as typical water supply systems "Californian" and drip as well as solar pumping.
322. Access to resources . The north being a breeding area par excellence, the degradation of climatic conditions will negatively impact production through lack of fodder and water during long periods of drought. Farmers and herders conflicts will be more numerous and more frequent with certainly more dramatic consequences. The fires of bush will be more frequent and destroy pastures and plantations. The activities of protection, conservation of soil fertility, agroforestry and promotion of hedgerows will reduce these risks

Environmental, Climate and Social Management Plan

Introduction: Key Activities, Responsibilities and Outline

1.1. Key Activities

A number of activities have to be carried out during the various phases of the baseline project to ensure adequate environmental and social impact management. These include, but are not limited, to the following:

Negotiation Phase (September 2017 – end 2019):

- Agree on final (objective) criteria and community selection

- Develop a non-technical project information document (max 2 – 3 pages) with relevant contact information for each regions
- Agree on the proposed screening criteria and forms for the proposed sub-projects.

Start-up / Inception Phase (early 2018 – mid-2019):

- Develop a stakeholder engagement plan (or at least a detailed communication/outreach strategy);
- Sensitization of key stakeholders, particularly at community level, about project objectives, scope, target groups, beneficiary selection and grievance mechanism;
- Establish grievance mechanism and train relevant committee members and project staff;
- Conduct detailed studies (on environment, socio-economic/livelihood conditions) for each of the selected communities to establish a baseline for all key indicators;
- Conduct a small-scale land access survey among a sample of farmers and fishermen to find out if men will be willing to release land to women and who are the value chain actors;
- Develop template contracts that incorporate the environmental and social guidelines for contractors presented in Annex 3.

Implementation Phase (mid-2021 – 2025):

- Regular sensitization of key stakeholders, particularly at community level of the potential environmental and social impacts of the project and how to implement the recommended mitigation measures.

Management Responsibilities

In summary, coordination and management of the project in coordination with cofinancers definitions of role and responsibilities

1.1. Outline of the Management Plans

323. Tables below present the environmental, climate and social management plans. For each of the potential overall impacts described in chapter 5, the plans indicate a significance rating and (geographical) extent/prevalence of each impact, recommend mitigation measures, identify who is responsible for implementation of the mitigation measures, how implementation can be verified, and how frequently. The plans have been developed with input from a broad range of stakeholders consulted during the ESMF field mission). The recommended mitigation measures mostly apply to all countries ; where more information was available they also recommend context-specific measures for relevant states or areas within states. A copy of the environmental and management plans should be made available to all project staff, participating institutions and other key stakeholder representatives as well as used in community sensitization (i.e. awareness-raising and training) activities. This plan is complemented by the ESMPs in the SECAP notes . The project will not invest in any sensitive areas and will ensure alignment with the existing national parks management plans around Comoe national park and Nyellenpuo protected area) .

Environmental (incl. Climate Change) Management Plan of the IFAD baseline investment

Table 6.1: Environmental (incl. Climate Change) Management Plan

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
ENVIRONMENTAL MITIGATION PLAN						
Deforestation (from tree crops especially cocoa plantation expansion into natural forest area) and upland crop production	High	All districts	<ul style="list-style-type: none"> ▪ Strongly discourage cocoa plantation in and around virgin forest and forest regrowth areas ▪ Strong emphasis to be placed on rehabilitation of existing and abandoned cocoa plantations ▪ Limit approval for and cocoa plantations to already degraded land/degraded secondary bush areas or deforested areas ▪ Strengthen participation in the processing and marketing value chains to create more jobs especially for women ▪ Strengthen partnership with the forestry department to train farmers in sustainable agroforestry ▪ The project will not invest in any sensitive areas, buffer zones, protected areas in line with the National parks management plans 	NPCU and District MOA, Service Providers	<ul style="list-style-type: none"> ▪ Per cent decline in forest cover ▪ Number of people engaged in the processing and marketing value chains ▪ MOU with the forestry department ▪ Number of Training conducted with farmers on agroforestry techniques 	Reference/baseline, Mid-term, End-Term Mid-Term, End-Term Mid-Term, End-Term Annual
Biodiversity loss, Bush Fires/slash and burn agriculture	Medium	All districts	<ul style="list-style-type: none"> ▪ Limit cultivation of rice in the mangrove ecosystem to reduce mangrove forest loss 	NPCU and District MOA, Service Providers	<ul style="list-style-type: none"> ▪ Per cent decline in mangrove forest ▪ Number of farmers that 	Mid-Term, End-Term Quarterly

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			<ul style="list-style-type: none"> ▪ Discourage slash and burn and train farmers on sustainable land preparation and development options ▪ Avoidance of areas that infringe on known migration patterns of protected, endangered or rare species and maintain known wildlife migration corridor 		<ul style="list-style-type: none"> received training on sustainable land preparation and management <ul style="list-style-type: none"> ▪ Biodiversity surveys 	Annual
Land and soil degradation	Medium	All districts	<ul style="list-style-type: none"> ▪ Production of project-specific ESIA by contractors should be required for all feeder roads construction ▪ Train farmers and service providers on sustainable land development and preparation methods including zero or minimum tillage. ▪ Encourage crop intensification and discourage opening of virgin forest for cropping. ▪ As much as practicable, encourage mixed cropping of target crops with cover crops and anchor crops (especially for cocoa at early stage) ▪ Involve partners from the Ministry and research institutes in training farmers on soil conservation techniques 	NPCU and District MOA, Service Providers	<ul style="list-style-type: none"> ▪ Production of project-specific ESIA for feeder road construction <ul style="list-style-type: none"> ▪ Number of farmers that received training on sustainable land preparation and management ▪ Consummated MOUs with Research Institutes and agencies dealing with soil conservation techniques 	Annual Quarterly Mid-Term, End-Term
Water pollution	Medium	All districts	<ul style="list-style-type: none"> ▪ Minimize use of inorganic fertilizers and encourage use of biodegradable organic manures (especially in rice, maize and vegetable fields) and agrochemicals in cocoa plantations 	NPCU and District MOA, Service Providers	<ul style="list-style-type: none"> ▪ Number of farmers that use organic manure instead of inorganic fertilizer ▪ Number of youth engaged in 	Annual Annual

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			<ul style="list-style-type: none"> Consider training youth in sustainable agrochemical application as an enterprise to promote environmental-smart agricultural value chain 		integrated agrochemicals and pesticides application enterprise	
Wetland (especially mangrove) degradation and removal	Medium	All districts	<ul style="list-style-type: none"> Discourage removal and draining of mangroves for rice paddies and vegetable farming 	NPCU and District MOA, Service Providers	Per cent decline in wetland	Reference/baseline, Mid-term, End-Term Mid-term, End-Term
Erosion and landslide/mudslide	Medium	All districts	<ul style="list-style-type: none"> Encourage agronomic practices such as contour ploughing, terraces and bunds in erosion and landslide/mudslide prone hill-slope areas Encourage the planting of cover crops and anchor crops with the main crop Encourage buffers along river bank to prevent erosion Design and construction of roads, bridges and culverts to be properly monitored to prevent inappropriate termination that can lead to erosion 	NPCU and District MOA, Service Providers	No of farmers in erosion/landslide/mudslide prone areas adopting sound and sustainable agronomic practices	Mid-term, End-Term
Flooding (from rivers and possible over flow/collapse of the earthen dam), Water logging, soil salinization and alkalization			<ul style="list-style-type: none"> Improve on the design of earthen dams in IVS using hydrological long-term(50-100 years) flood return periods to improve dam resilience Sustaining and improving on the partnership with the Meteorological Agency to improve their capacity to generate forecast of extreme rainfall 	NPCU and District MOA, Service Providers	<ul style="list-style-type: none"> Number of rainy season with no dam overflow Improved capacity of the Met Office to generate forecast on extreme events 	Annual Quarterly Quarterly Annually

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			<p>events and disseminate climate information</p> <ul style="list-style-type: none"> ▪ Consider introducing no regret option including crop insurance as part of the farmers and Agri-entrepreneurs' package ▪ Production of project-specific ESIA by contractors should be required for all feeder roads construction to prevent obstructing drainage and causing waterlogging of rice fields ▪ Analyze soils and monitor changes that potential problems can be managed. Allow for access to channels from maintenance in design ▪ Provide water for leaching as a specific operation 		<ul style="list-style-type: none"> ▪ Number of agro-entrepreneurs receiving climate information ▪ Number of farmers that signed off onto agric insurance ▪ Result from soil analysis 	Biennial
Agrochemical Waste proliferation	Low	All districts	<ul style="list-style-type: none"> ▪ Consider creating a value chain/service provider in soil testing for fertilizer applications to improve place and context-based fertilizer and agrochemical application <p>Encourage development and use of improved and resilient local crop varieties to reduce pest resistance and use of agro-chemical</p> <ul style="list-style-type: none"> ▪ Training youth in sustainable application of agrochemicals enterprise as part of the value chain <p>Encourage use of organic manures</p> <ul style="list-style-type: none"> ▪ Service providers and agro-chemical input suppliers to follow high standard of security and safety 	NPCU and District MOA, Service Providers	<ul style="list-style-type: none"> ▪ Number of soil testing service providers ▪ Number of farmers using improved and resilient local crop varieties ▪ Number of youth trained and engaged in integrated pesticide and agrochemicals management as part of value chain 	Annual Annual Annual

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			precautions in storage and transport of agrochemicals		<ul style="list-style-type: none"> ▪ Number of trained and certified agrochemical suppliers 	
Dry spell and Increase storm and wind activity	Moderate	All districts	<ul style="list-style-type: none"> ▪ Sustaining and improve on partnership with the Meteorological Agency to improve their capacity to generate and disseminate agriculture specific forecasts to farmers in good time through additional weather stations and other appropriate weather data collection tools especially in the rural interiors ▪ Improve the capacity of the Meteorological Agency to collate and process climate data through appropriate Hardware, Software and mobility support ▪ In addition to agric extension officers, engage other means including farmers organization forum, community radios, text messages, transmitter broadcast (in remote areas) to disseminate weather and climate information to farmers (possibly in local languages) ▪ Integrate use of traditional forecasting knowledge through regular feedback from farmers ▪ Consider introducing no regret option including crop insurance as 	NPCU and District MOA, Service Providers	<ul style="list-style-type: none"> ▪ Number of additional weather station supported/established by the project ▪ Central data processing server and mobility support for the Met Office ▪ Regular issuance of agro-climatic forecasts issued by the Meteorological Agency ▪ Number of farmers receiving and using climate information ▪ Number of entrepreneurs that signed on to agricultural insurance ▪ Number of feedbacks from farmers/farmers organization on 	<p>Annual</p> <p>Once</p> <p>Quarterly</p> <p>Quarterly</p> <p>Annual</p> <p>Quarterly</p>

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			part of the farmers and Agri-entrepreneurs' package <ul style="list-style-type: none"> ▪ deliver training and agricultural inputs in good time to assist farmers to adjust and adapt their planting and harvesting methods and timing 		climate information	
GHG emissions from rice paddies	Moderate	All districts	<ul style="list-style-type: none"> • Discourage opening of new virgin forests and coastal mangrove wetlands • Train farmers on how to drain rice paddies in mid-season to reduce CH4 emission and improvement in nutrient management including the retention of rice residues • Encourage use of clean energy in processing activities 	NPCU and District MOA, Service Providers	<ul style="list-style-type: none"> ▪ Per cent decline in forest and wetland areas ▪ Number of farmers trained in sustainable rice paddies management ▪ Number of processing units using sustainable energy 	Reference/baseline, Mid-term, End-Term Annual Reference/baseline, Mid-term, End-Term

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
SOCIAL MITIGATION PLAN						
Land tenure issues – role of paramount chiefs	High	All districts	<ul style="list-style-type: none"> ▪ Advocate for the implementation of the new land policy to guarantee land tenure security for beneficiary farmers ▪ Massive sensitization across the districts and chiefdoms on land tenure and access to land for the intended beneficiaries ▪ Engage with Paramount Chiefs to secure land for intending beneficiaries with no access to land ▪ Make access to land by women and youth one of the preconditions for a community to participate in the project ▪ The project (through the NPCU and District MOA) to sign land guarantee and documented lease agreements with land owners for 10-25 years for intending beneficiaries without access to land 	NPCU and District MOA, Service Providers	Number of women and youth participating in THE PROJECT (from the project register)	Quarterly
					Number of people without access to land participating in THE PROJECT	Quarterly
					Secure land access and number of land lease agreement signed with land owners	Every six months
					Attendance register of sensitization meetings with Paramount chiefs and other stakeholders	At every project activity
Gender inequality and targeting	High	All districts	<ul style="list-style-type: none"> ▪ Spend enough time (at least 2-3 months) for mobilization on targeting to reach everybody at community meetings (Do not leave selection of beneficiaries to the paramount Chiefs). Use the local media as well as local trusted NGOs ▪ Encourage active participation of women in the project up to 40 per cent ▪ Engage women organizations and advocacy and right groups to mobilize women to participate ▪ Give some concessions/incentives to women farmers to enable them participate ▪ Encourage men through advocacy to support women participation 	NPCU and District MOA, Service Providers	Minutes and Attendance register at community meetings	At targeting mobilization meetings
					Number of women and youth participating in THE PROJECT (from the project register)	Quarterly
					Number of women advocacy groups working with AVPD	Annually

			through guarantee of land and other resources required			
Social exclusion of women and youth due to limited access to land	High	All districts	<ul style="list-style-type: none"> ▪ Actively involve women and youth in all components and levels of decision-making within the project; <ul style="list-style-type: none"> ▪ Strive to maintain Project beneficiaries ratio of 40 per cent women and 20 per cent youth (men and women under 35 years old) ▪ Encourage the submission of business proposals from women-only groups (incl. cooperatives); ▪ Ensure women hold at least 30-40 per cent of leadership posts in the farmer apex organizations and project management team; ▪ When organizing meetings or events, ensure they are appropriate to women's time and venue constraints; ▪ Access to land for women and youth should be a precondition for community selection/participation <ul style="list-style-type: none"> ▪ To avoid obstructionism ('blocking behaviour'), ensure men are included ('carried along') in sensitization activities. Work with locally-trusted CSOs in community sensitization (working towards 'attitudinal change') ▪ Make road and dam construction contractors to hire labour from the local communities to increase sense of belonging and participation 	NPCU and District MOA, Service Providers	Attendance lists Lists of approved projects and their beneficiaries Membership and staff lists Attendance lists at sensitization workshops and beneficiary / community feedback during site visits Community agreement on land access for women and youth Number of community youth engaged as labour in road and dam construction and farm tracks rehabilitation	At every project activity At business plan approval and every six months thereafter Every six months At every project activity Annual

			<ul style="list-style-type: none"> ▪ Consider using local labour for farm tracks construction and rehabilitation instead of machines to increase number of indirect project beneficiaries 			
Managing expectations	High	All districts	<ul style="list-style-type: none"> ▪ The project targeting and up scaling mechanism should be explicitly and transparently explained in the project implement manual (PIM) ▪ Selection criteria, what the project offers and expectations from intended beneficiaries should be explicit and unambiguous (and translated into the local languages so that everybody will be carried along) ▪ Carry the community and agro-entrepreneurs representatives along in the project implementation (and possibly the Paramount Chiefs or their representatives) in every stage of project implementation <ul style="list-style-type: none"> ▪ Maintain robust knowledge management and information dissemination to keep everybody abreast of happenings 	NPCU and District MOA, Service Providers	<p>Project implementation manual</p> <p>Project selection criteria in local languages</p> <p>Knowledge management and communication material</p>	<p>Before project commencement</p> <p>6months into project</p> <p>Quarterly</p>
Unsafe and non-healthy working conditions	Medium	All districts	<ul style="list-style-type: none"> ▪ Incorporate environmental and social guidelines in contracts with service providers and ensure compliance; ▪ Sensitize project beneficiaries and their wider communities on health & safety standards, incl. safe use of production, processing and transport machinery, agro-chemicals (pesticides and fertilizer), electrical installations and wiring (in particular in wet areas / during rains; ▪ Sensitization of selected 	NPCU and District MOA, Service Providers	<p>Contractor Guidelines</p> <p>Health & Safety flyer or poster</p> <p>Community meeting</p> <p>Community meeting</p>	<p><input type="checkbox"/> Within 6 months of project start and half-yearly review thereafter</p> <p><input type="checkbox"/> Within 6 months of project start, half- yearly thereafter</p>

			communities on child rights and ensure that there is no child labour on selected agri-enterprise projects.			<input type="checkbox"/> Within 6 months of project start and half-yearly review thereafter <input type="checkbox"/> Within 6 months of project start, half-yearly thereafter
Elite capture	Medium	All districts	<ul style="list-style-type: none"> ▪ Detailed screening of business plan proposals on commercial viability, conflicts of interest and corruption. Exclude (use of) service providers owned by/tied to politicians or political parties; ▪ Ensure compliance with pre-approved, objective selection criteria and transparent information-sharing and decision-making ▪ Sensitize communities on project objectives, target groups, beneficiary selection criteria, and risk of elite capture ('hijack'); <ul style="list-style-type: none"> ▪ Agreement with traditional rulers and council of elders on community and beneficiary selection, and adherence to representative and transparent decision-making related to the project (via letter of understanding, MoU or another appropriate format). Involve locally-trusted CSOs. 	NPCU and District MOA, Service Providers	Completed proposal screening forms Review missions Item on steering committee agenda Community meeting Agreement document	<ul style="list-style-type: none"> ▪ During half-yearly review missions ▪ During half yearly committee meetings ▪ Monthly during first months, quarterly thereafter ▪ Within 6 months of start of project

Loss and Disturbance of Cultural Resources such as sacred forests and archeological sites	Low	All district	<ul style="list-style-type: none"> ▪ Do not approve projects to located in or around sacred forests and community groves and archaeological sites 	NPCU and District MOA, Service Providers	Inventory of cultural resources	<ul style="list-style-type: none"> ▪ Annual
Conflict resurgence	Medium	All districts	<ul style="list-style-type: none"> ▪ Maintain robust knowledge management, information dissemination and community engagements to keep everybody informed ▪ Develop a clear complaints, grievances redress and dispute resolution framework and make this known to all stakeholders ▪ Develop a clear and simple stakeholder engagement plan (SEP) (incl. communication/outreach strategy), particularly on project objectives and staffing (incl. who's responsible for what), criteria for community and beneficiary selection, community – project communication structure / methods, and grievance/conflict management; ▪ Keep relevant stakeholders informed about project progress on a regular basis; ▪ Involve youth and women leaders as well as respected elders in key project decisions and sensitization activities; ▪ Publicly disclose relevant information on contracts and payments; ▪ Encourage contractors / service providers to give employment 	NPCU and District MOA, Service Providers	<p>Stakeholder engagement plan (SEP)</p> <p>Stakeholder meeting reports, project flyers</p> <p>Complaints register</p> <p>Meeting records, observation</p> <p>Service provision contract and employment lists</p> <p>Code of conduct</p> <p>Community meeting</p> <p>Knowledge management materials</p> <p>Number of local CSOs in partner with THE PROJECT</p>	<p>Within 2 months of start of project</p> <p>Quarterly</p> <p>Quarterly</p> <p>At every project activity</p> <p>Upon award of contracts and after payments</p> <p>Within 6 months of project start</p> <p>At every project activity during first 6 months, quarterly thereafter</p> <p>Quarterly</p>

			<p>preference to local community members</p> <ul style="list-style-type: none"> ▪ Develop a code of conduct for all stakeholders ▪ Sensitize women and particularly youth on what it is like to be an agri-entrepreneur (give a realistic picture of economic, social and environmental benefits but also challenges and responsibilities). ▪ Involve locally-trusted CSOs in community sensitization 			Annually
Health						
Water borne diseases	Medium	All districts, especially in the Inland Valley Swamp	<ul style="list-style-type: none"> ▪ Efforts to focus on inland valley swamp to protect farmers from schistosomiasis, a water-borne disease in flooded rice fields, with rice boots and medication 	NPCU and District MOA, Service Providers	Sensitization materials Number of farmers using rice boots	▪ Annual
Dust from road construction	Medium	All districts	<ul style="list-style-type: none"> ▪ Road contractors to present an Environments and Social Impact Assessment with Management Plan for managing externalities as part of the bidding processing ▪ Consider using the Autoseal technology (a polymer based technology which hardens and can last for 5 years or more) to help tackle the dust inhalation problem 	NPCU and District MOA, Rural Infrastructure Engineer, contractors / Service Providers	Number of ESIA for road rural feeder road projects	Quarterly

1.1.1.1 Table 6.2: Social Management Plan

Stakeholder Engagement, Community Sensitization and Expectation Management

Experience with previous IFAD and other economic and social investment projects indicate that stakeholder engagement and sensitization are of critical importance to project success. In the absence of clear communication with relevant stakeholders and appropriate sensitization of local communities, rumors, misinformation and speculation thrive, and accusations and tensions easily boil over into (violent) conflict within and between communities. Therefore, for many of the potential environmental and social impacts, the management plans recommend the development of a stakeholder engagement plan with a clear communication strategy and the organization of community sensitization activities on a regular basis.

A stakeholder engagement plan (SEP) should include at least the following components⁴⁰:

- a) Principles, objectives and scope of engagement
- b) Regulations and (institutional) requirements
- c) Summary of previous stakeholder engagement activities
- d) Stakeholder mapping and analysis
- e) Strategies of engagement
- f) Key messages and communication channels
- g) Grievance mechanism (see also section 9.6 below)
- h) Resources and responsibilities
- i) Monitoring and evaluation

Community sensitization (i.e. awareness-raising and training) activities need to be clear, timely and culturally appropriate; this means that key messages need to be communicated in a format and language that is easy to understand, preferably by someone who speaks the local language and is familiar with local customs and sensitivities, and during a time that is convenient and sufficient for all key community groups, particularly women and youth. To ensure appropriate community entry and reach target groups most effectively and efficiently, it is advisable to also involve those civil society organizations that are already active in and trusted by the selected communities.

6.5 Grievance Management

The project will establish a community engagement process and provide access to information on a regular basis. In order to reduce conflicts, the project will use the grievance mechanism established by IFAD which includes a [Complaints Procedure](#)⁴¹ to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance with AF or IFAD's environmental and social policies as well as the mandatory aspects of the Social, Environmental and Climate Assessment Procedures in the context of IFAD-supported projects. The procedure allows affected complainants to have their concerns resolved in a fair and timely manner through an independent process. Although IFAD normally addresses potential risks primarily through its enhanced QE/QA process and by means of project implementation support, it remains committed to: (i) working proactively with the affected parties to resolve complaints; (ii) ensuring that the complaints procedure is responsive and operates effectively; and (iii) maintaining records of all complaints and their resolutions⁴². Moreover, IFAD's Strategic Framework calls for ensuring that projects and programmes promote the sustainable use of natural resources, build resilience to climate change and are based upon ownership by rural women and men themselves in order to achieve sustainability

324. IFAD-supported projects and programmes including supplementary funds like this Adaptation Fund are designed in a participatory manner, taking into account the concerns of all stakeholders. IFAD requires that projects are carried out in compliance with its policies, standards and safeguards.. It will be the responsibility of the PMU of the project, under the control of IFAD, to ensure that all relevant

⁴⁰ Adapted from IFC (2007) *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets* (IFC: Washington, D.C.), pp.164-168

⁴¹ <https://www.ifad.org/en/accountability-and-complaints-procedures>

⁴² IFAD (2016) *Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP)* (IFAD: Rome), p.12

stakeholders are adequately informed of the grievance mechanism. This mechanism will be made available at the Governorate of the region and Administrators of the provinces (sectors). Copies of the manual of grievance mechanism will be made available at the villages' level. It will also be posted on the project website and the implementing entity (IFAD) website. The procedures on how to submit the complaint are available on the IFAD

325. The objective of the IFAD Complaints Procedure is to ensure that appropriate mechanisms are in place to allow individuals and communities to contact IFAD directly and file a complaint if they believe they are or might be adversely affected by an IFAD-funded project/programme not complying with IFAD's Social and Environmental Policies and mandatory aspects of SECAP. Complaints must concern environmental, social and climate issues only and should not be accusations of fraudulent or corrupt activities in relation to project implementation – these are dealt with by IFAD's Office of Audit and Oversight.

326. Eligibility criteria according to IFAD's grievance mechanism

To file a complaint for alleged non-compliance with IFAD's social and environmental policies and mandatory aspects of its SECAP, IFAD will consider only complaints meeting the following criteria:

- The complainants claim that IFAD has failed to apply its social and environmental policies and/or the mandatory provisions set out in SECAP and Safeguards of the Adaptation Fund project.
- The complainants claim that they have been or will be adversely affected by IFAD's failure to apply these policies.
- Complaints must be put forward by at least two people who are both nationals of the country concerned and/or living in the project area. Complaints from foreign locations or anonymous complaints will not be taken into account.
- Complaints must concern projects/programmes currently under design or implementation. Complaints concerning closed projects, or those that are more than 95 per cent disbursed, will not be considered.

327. The process according to IFAD's grievance mechanism:

The complainants should first bring the matter to the attention of the government or non-governmental organisation responsible for planning or executing the project or programme (Ministry of Agriculture implementing agency and the Ministry of Economy and finance and The Environmental Protection Agency that have with the responsibility for overseeing the work on the field. If the Implementing Agency does not adequately respond, then the matter may be brought to the attention of IFAD. The issue may be brought straight to IFAD if the complainants feel they might be subject to retaliation if they went to the Lead Agency directly.

328. The Regional Division of IFAD will examine the complaint and, if necessary, will contact the Ministry of agriculture and Ministry of Economy and Finance, The Environmental Protection Agency under the ministry of environment to decide if the complaints are justified. If the complainants request that their identities be protected, IFAD will not disclose this information to the Ministry of Agriculture or anyone else in government. If the complaint is not justified, the Regional Division will inform the complainants in writing. If the Regional Division finds the complaint is justified and there is proof of actual or likely harm through IFAD's failure to follow its policies and procedures, IFAD will take action. This may consist of making changes to the project/programme, or requiring that the government observes its obligations under the Financing Agreement. IFAD's response will focus bringing the project/programme into compliance and no monetary damages will be available or paid in response to such complaints. The complainants will be informed of the outcome of the issue by the Regional Division.

329. In all cases, if the complainants disagree with IFAD's response, they may submit a request to SECAPcomplaints@ifad.org and request that an impartial review be carried out by the Office of the Vice-President. The Office of the Vice-President will decide on the steps to be taken to examine such complaints, including, if necessary, contracting external experts to review the matter. The complainants will be informed of the results of the review. IFAD will include in its Annual Report a list of received complaints and a summary of actions taken to address them.

How to submit a complaint:

A complaint relating to non-compliance with IFAD's Social and Environmental Policies and mandatory aspects of its SECAP can be submitted in any of the following ways:

- **Download the complaints form (Word)** through IFAD website :
<https://www.ifad.org/en/accountability-and-complaints-procedures>
 - **Send an email to SECAPcomplaints@ifad.org**
330. In addition, the AF Project will as much as possible utilize every available grievances redress mechanisms including: associations (including farmers' associations/organizations) traditional council (Paramount Chiefs and elders), village square engagement (consisting of representatives of men, women and social groups), village general assembly, the project NCPU, etc.

Environmental and Social Management Framework (ESMF) for Agricultural Value Chain Stages- PADFA IFAD funded project

Part in value chain	Key issue affecting the Environment	Potential impact (negative and positive)			Standard mitigation measures	Monitoring & indicators
		Environmental	Social & Institutional	Economic		
<i>Production</i>	<ul style="list-style-type: none"> ▪ Land preparation – land clearing, cultivation and other issues ▪ Use of earth-moving machines, e.g. tractors for clearing ▪ Use of agro-chemicals ▪ Use of pesticides 	<ul style="list-style-type: none"> ▪ Forest and wetland removal ▪ Land & soil degradation ▪ Water and soil pollution ▪ Flooding ▪ Erosion ▪ Bush and pipeline fire ▪ Biodiversity loss ▪ Waste management ▪ GHG emission 	<ul style="list-style-type: none"> ▪ Increased youth employment with possible decrease in youth restiveness ▪ Increased youth interaction and cooperation and ability to solve problems and resolve conflicts ▪ Increased sense of pride and responsibility by participating youth ▪ Inter- and intra-community conflict on land ownership ▪ Possible agitation from youth not presently included in the programme ▪ Social exclusion, especially lack of access to land by women and youth 	<ul style="list-style-type: none"> ▪ Increased sales and household income ▪ Increased youth employment and social well-being ▪ Improved nutrition and food security ▪ Increased ability of youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development ▪ Increased import substitution ▪ But increasing associated environmental and social costs 	<ul style="list-style-type: none"> ▪ As much as possible, discourage the opening of virgin forest and wetlands ▪ Train farmers in sustainable land management practices to reduce environmental impacts ▪ Deliver training and agricultural inputs to farmers on-time to enable them to adjust and adapt their planting and harvesting methods and timing ▪ Adopt and enforce health, safety and environment rules at production sites to ensure clean, sustainable and environmentally friendly as well as climate-smart production processes ▪ Encourage full exploration of the value chain, e.g. convert poultry and other livestock waste into farm manure ▪ Develop a clear and simple Stakeholder Engagement Plan (SEP), incl. grievance mechanism, to manage expectations ▪ Actively involve women and youth 	<ul style="list-style-type: none"> ▪ Number of farmers that received training on sustainable land preparation ▪ Changes in forest and wetland ▪ Results from periodic soil analysis ▪ Health, safety and environment manual ▪ Number of value chain enterprises around waste management and valorization, pesticide and agrochemical management ▪ Stakeholder Engagement Plan ▪ Conflict resolution committee meetings ▪ Lists of approved projects and their beneficiaries

					in all components and levels of decision-making within the project	<ul style="list-style-type: none"> ▪ Community agreement on land access for women and youth
<i>Processing</i>	<ul style="list-style-type: none"> ▪ Use of processing machines 	<ul style="list-style-type: none"> ▪ Waste generation ▪ Air, water and land pollution ▪ GHG emission from machines 	<ul style="list-style-type: none"> ▪ Unsafe and non-healthy working conditions ▪ Use of child labourers 	<ul style="list-style-type: none"> ▪ Increased sales and household income ▪ Increased youth employment and social well-being ▪ Improved processing capacity, value additions and value chain development ▪ Improved nutrition and food security ▪ Increased ability of youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development ▪ Increased import substitution ▪ But increasing associated environmental and social costs 	<ul style="list-style-type: none"> ▪ Encourage the use of renewable and low-carbon energy sources during processing operations ▪ Adopt health, safety and environment rules at processing sites ▪ Train farmers in sustainable agro-processing practices to reduce environmental impacts ▪ Step up knowledge management and information dissemination to showcase the achievement of the project 	<ul style="list-style-type: none"> ▪ Number of operators adopting renewable low carbon technologies ▪ Number of enterprises established focusing on waste conversion and valorization ▪ Number of entrepreneurs adopting sustainable processing operations ▪ Knowledge management /communication plans, stakeholder meeting reports, communication project flyers/leaflets

<i>Marketing</i>	<ul style="list-style-type: none"> ▪ <i>Construction of market infrastructure</i> 	<ul style="list-style-type: none"> ▪ Dust, smoke, noise, ground movement / vibration ▪ Deforestation ▪ Water pollution ▪ Flooding and erosion from poorly constructed culverts, roads, etc. 	<ul style="list-style-type: none"> ▪ Better access to market ▪ Better access to production and processing sites by supervisory agencies ▪ Improved access to rural communities ▪ Conflict over land and demand for compensation where infrastructure is to be constructed 	<ul style="list-style-type: none"> ▪ Improved market penetration ▪ Access to market information and market linkage and support services ▪ Strengthened market value chain, with more profitable enterprises ▪ Improved storage and reduced waste 	<ul style="list-style-type: none"> ▪ Use construction equipment with moderate decibel during construction ▪ Develop/adopt and enforce health, safety and environment rules at construction sites ▪ Lawful and willing consent of community/or individuals on land site for market infrastructure 	<ul style="list-style-type: none"> ▪ Observation of construction equipment for dust, noise, smoke, vibration, etc. ▪ Work inspection report on the environmental quality of market infrastructure ▪ Health, safety and environment plans ▪ Copy of consent of community /individuals on market infrastructure land site
<i>Transport (and supply)⁴³</i>	<ul style="list-style-type: none"> • Use of motorized and heavy transportation machines 	<ul style="list-style-type: none"> ▪ GHG emission from transportation 	<ul style="list-style-type: none"> ▪ Influx of rural migrants to agri-enterprise sites and processing areas ▪ Increased number of service providers, which boost the economy 	<ul style="list-style-type: none"> ▪ Increased ownership of motorized and other transport system ▪ Increased number of service providers ▪ Increased GDP ▪ But increasing associated environmental and social costs 	<ul style="list-style-type: none"> ▪ Organize transport entrepreneurs into an association for easy management ▪ Develop a code of conduct, and health, safety and environment regulation for transport operators 	<ul style="list-style-type: none"> ▪ Code of conduct for transport operators ▪ Minutes of meetings of transport operators' association

⁴³ There are certain activities, such as the supply of materials that are not associated directly with production, processing, marketing or transport, which could have different environmental and socio-economic impacts.

Financial services	<p>Adopt agricultural insurance</p> <p>Green lending products</p>	Un-sustainable production and loss of assets and production	Destocking and migration	<ul style="list-style-type: none"> ▪ Increased financial products ▪ Set up the agricultural insurance industry 	<ul style="list-style-type: none"> ▪ Support private and public actor to develop a mature insurance sector 	<ul style="list-style-type: none"> ▪ Public and private partnership
--------------------	---	---	--------------------------	--	---	--

Analysis of Alternatives

331. The following alternatives will be considered before the commencement of any activity:

- Site: the location of a proposed agri-enterprise will be evaluated to ensure it is not sited on a walking path or in a flood-prone area, and maintains the necessary distance from highways;
- Route: the enterprise will not be sited near powerlines, flow stations, and/or oil and gas pipelines or right of way;
- Commodity: only those crop types and varieties which are drought tolerant, pest resistant and of high yield will be selected;
- Input (e.g. power source, agrochemicals), scale (e.g. small-scale growers, large commercial farms); and design (e.g. building height, screens, colour) of each enterprise will be analyzed before any activity is carried out.

7.1 Commodity Analysis of Alternatives

Table below provides a more detailed analysis of alternatives for the different commodity types:

COMMODITY	PREDOMINANT CULTURAL PRACTICES	CLIMATE SMART AGRICULTURE PRACTICES
Cassava and equivalent	<ul style="list-style-type: none"> ▪ Use of spent stems ▪ Wrong application of soil amendments ▪ Use of low-yield varieties ▪ Fertilizer spreading ▪ Tillage operations ▪ Use of inorganic crop protection chemicals 	<ul style="list-style-type: none"> ▪ Encourage outgrower schemes ▪ Encourage soil sample analysis ▪ Encourage the adoption of improved varieties ▪ Encourage ring application at 6cm-10cm depth ▪ Encourage minimum or zero tillage ▪ Encourage the use of organic crop protection solutions like neem oil ▪ Encourage carbon sequestration activities
Rice	<ul style="list-style-type: none"> ▪ Recycling of paddy ▪ wrong application of soil amendments ▪ Use of low yield varieties ▪ Fertilizer spreading ▪ Tillage operations ▪ Use of inorganic crop protection chemicals 	<ul style="list-style-type: none"> ▪ Encourage paddy transplanting ▪ Encourage soil sample analysis ▪ Encourage the adoption of improved varieties ▪ Encourage deep application of urea at 6cm-10cm depth ▪ Encourage minimum or zero tillage ▪ Encourage the use of organic crop protection solutions like Neem oil ▪ Encourage carbon sequestration activities
Tree crops	<ul style="list-style-type: none"> ▪ Recycling of seedlings ▪ wrong application of soil amendments ▪ Use of low yield varieties ▪ Fertilizer spreading ▪ Tillage operations ▪ Use of inorganic crop protection chemicals 	<ul style="list-style-type: none"> ▪ Adopt outgrower schemes ▪ Encourage soil sample analysis ▪ Encourage the adoption of improved varieties ▪ Encourage minimum or zero tillage ▪ Encourage the use of organic crop protection solutions like Neem oil ▪ Encourage carbon sequestration activities

Environmental and Social Screening of Sub-Projects

Introduction: Screening and Review

332. This screening is meant to check for potential environmental and social safeguard issues by assessing potential impacts and, through a new project-specific ESMP, identifying appropriate design mitigation measures. The outcome of the screening process is a review of the final sub-project proposal that will include:

- Compliance with the above-described ESMP and ESMF as well as IFAD's SECAP guidance statements;
- Potential for the project to cause adverse environmental impacts;
- Potential for the project to cause adverse climate impacts;
- Potential for the project to cause adverse social impacts;
- Adequacy and feasibility of the proposed safeguard mitigation measures and monitoring plans, including any local communities plan or process framework for restrictions of inclusion.

333. In the event of sub-projects with medium (and therefore manageable) environmental and social impacts, an environmental and/or social review should be undertaken, based on the IFAD SECAP and the ESMP and ESMF outlined in chapters 6 and 7. Such a review will examine the sub-project's potential negative and positive environmental and social impacts as well as define any measures needed to prevent, minimize or mitigate adverse impacts and improve environmental and social performance. In most cases, this will be a simple review by reference to existing reports and studies (if available), and through discussions with local communities and other stakeholders, if needed.

334. Sub-project proposals with medium (manageable) environmental and social impacts should include the following basic elements in the application and contain in the project-specific ESMP:

- A summary and description of the possible adverse effects that specific sub-project activities may occur;
- A description of any planned measures to avoid or mitigate adverse impacts, and how and when they will be implemented;
- A system for monitoring the environmental and social effects of the project;
- A description of who will be responsible for implementing and monitoring the mitigation measures; and
- A cost estimate of the mitigation measures, which should be included in the sub-project proposal.

The scope of any environmental and/or social review and related mitigation measures will be determined by the relevant (environmental/climate change) SPCO staff in consultation with technical experts where needed, via the sub-project screening and approval process.

Sub-project proposals with only minor or no adverse impacts do not need a separate review (or ESMP). The following sections describe the contents of the screening forms.

Screening for Eligibility

335. The Project Design Report (PDR) of each project provides a detailed description of the eligibility criteria. For more information on the eligibility criteria and selection process, see the relevant paragraphs in the section on 'Components and Outcomes' in the chapter 'Project Description' of the PDR of each baseline investment. Annex 1 provides the proposed format for the letter of interest / application form, which should be completed by each intended beneficiary (i.e. incubator or applicant) and will be used as the primary tool for screening of eligibility by the service provider.

The remainder of this chapter will focus on the environmental, climate and social impact screening of likely agri-enterprise and market infrastructure sub-projects.

Screening for Environmental and Social Impacts

336. Based on relevant SECAP guidelines as well as technical experience, two separate environmental and social screening forms have been developed: for agri-enterprise and related (market) infrastructure subprojects.⁴⁴ The screening forms are presented in Annex 2. To be clear: the screening forms presented in Annex 2 should be completed by the environmental/climate SPCO officer, where needed assisted by external technical specialists. The intended beneficiaries (i.e. incubators and apprentices) are only required to complete the intention/application form (see annex 1).

Screening for Climate Impacts

A separate climate screening form is also presented in Annex 2.

Impact Significance Rating

337. In order to determine the significance of impacts, the likelihood of an impact occurring is considered against the consequence or magnitude of the impact if it was to occur. Likelihood is defined as the frequency of an impact occurring.

Definitions of Consequence

Consequence	Definition
No Impact / No change	<ul style="list-style-type: none"> • No impacts on biophysical and social environments / livelihood / health / gender • No public concerns • No legal issues
Negligible	<ul style="list-style-type: none"> • Low/minor impact on environment / livelihood / health / gender • Minor social impacts • No legal issues
Intermediate	<ul style="list-style-type: none"> • Some level of impact on environment / livelihood / health / gender • Social issues apparent • May have legal implications
Severe	<ul style="list-style-type: none"> • High level impacts on environment / livelihood / health / gender • High public concerns or perceptions • Legal non-compliance
Unknown	<ul style="list-style-type: none"> • Extent of the impact cannot be determined at this point • Apply precautionary principle

The chart below can assist to make a quick visual assessment of the significance of particular impacts, as well as the intervention as a whole.

⁴⁴ SECAP (2016), pp.71-194.

Likelihood	Consequence			
	No Impact / No change	Negligible	Intermediate / Moderate	Severe
Unlikely				
Possible / less than annually				
Occasional / at least annually				
Frequent / at least monthly				
Continuous, inevitable, daily irreversible				

Legend:

Low significance

Medium significance

High significance

338. Regardless of significance, in all cases where an adverse impact may occur, mitigation measures should be proposed. In most cases, it is possible to incorporate mitigation measures into the design, so designs may have to be changed/alterd to allow for this. Projects that only have impacts of low significance will probably not need a new ESMP; in that case the standard ESMP and ESMF in this report will suffice. In the case of project with impacts of medium significance, the development of appropriate plans, in addition to the standard ESMP and ESMF may suffice to manage the severity of the impacts. In the case of projects with impacts of high significance, a separate ESIA is almost always required.

Monitoring of Environmental, Climate and Social Impacts

Introduction

339. Monitoring is a long-term process, which should begin right from the start and continue throughout the life of the project. Its purpose is to establish benchmarks so that the nature and magnitude of anticipated environmental and social impacts can be continually assessed. Monitoring involves the continuous or periodic review of community and beneficiary sensitization and infrastructure construction/maintenance activities to determine the effectiveness of recommended mitigation measures. Consequently, trends in social management as well as environmental degradation or improvement can be established, and previously unforeseen impacts can be identified or pre-empted and averted. The overall objective of environmental and social monitoring is to ensure that recommended mitigation measures are incorporated, and that activities carried out during sensitization (i.e. training and awareness-raising) and infrastructure construction/maintenance are environmentally and socially acceptable, and therefore sustainable.

Key Performance Indicators

340. In identifying performance indicators, it is important to select indicators that are simple to monitor, and which will not necessitate the use of highly technical equipment or require specialized training. Performance targets have to be established before performance indicators are identified. For this project, six overall performance targets (focusing mainly on the key beneficiaries) have been put forward:

- Improved food security (addressing length of hungry season, number of meals, food diversity and quality);
- Increase in assets (owned by beneficiaries);
- Job creation (through agri-enterprise establishment, growth and strengthening);
- Enhanced income stability (for enhanced food security and sustainable livelihood);
- Improved production volume and marketing (by beneficiary agri-entrepreneurs);
- Enhanced support and capacity of rural institutions (promoting youth-based agri-enterprises)
- Insurance products and number of farmers insured

See section 2.4 for more detail, including agreed performance targets for each indicator.

Considering the strong focus on youth and women empowerment in conflict-prone areas, we suggest to include one additional performance indicator focusing on social inclusion: increased participation of women and youth in community decision-making.

341. Various project impacts and aspects relate to these overall performance targets. When the activities and indicators are established, the first activity is to collect baseline data which will serve as a benchmark and against which changes in the identified indicators can be measured. The types of parameters that can be monitored may include mitigation measures or design features, or actual impacts. In some cases, such as drainage structures and soil conservation interventions, monitoring is fairly straightforward and can be done as part of routine or periodic maintenance. However, other parameters, particularly those related to social, ecological and climate change issues can only be effectively assessed over a period of 2 to 5 years.

The monitoring plan in Table 10.3 below lists the indicators that should be monitored during the course of this project. It describes parameters that can be monitored, and suggests how monitoring should be done, how frequently, and who should be responsible for monitoring and action.

Baseline Study

Environmental and Social Monitoring Costs

Monitoring Costs (Estimate)

Monitoring parameter	Unit Cost (in USD)	Total	Y1	Y2-Y6
Site ESIA per project/country				
Environmental baseline study				
Environmental monitoring				
Social/ livelihood baseline study				
Livelihood monitoring				
Other social monitoring				
Total monitoring costs				

Capacity Building and Training for Environmental and Social Management

Strengthening Capacity and Improving Resilience

342. A successful implementation of the project requires the strengthening of institutional capacities, in particular on insurance, cooperatives and other relevant farmer organizations. Moreover, there is a strong need for context-specific, in-situ training sessions for farmers, other beneficiaries, for example on climate-smart agriculture and climate change adaptation, to improve their resilience to deal more effectively with climate-related weather events such as flooding, drought and heat waves.

Existing Capacity

343. Stakeholder consultations in revealed that one of the key challenges was the limited technical expertise, practical experience and lack of clear responsibilities of the state environmental officers. As a result, their capacity to practically implement or monitor environmental, social and climate related management was limited. To ensure that environmental, social and climate safeguards are upheld and wholly integrated into the project, there is a need for practical training on a broad range of topics and at different levels.

Training Topics

344. Proposed training topics include, at the very least:

- Community sensitization;
- Requirements of IFAD's SECAP and ERNM as well as the Climate, Land and Disclosure policies;
- ESMF processes, procedures and institutional arrangements to develop and implement required management plans;
- Data gathering and use of tools for data analysis;
- Screening and rating as prescribed in the ESMF;
- Environmental, social and climate impact assessment, and requirements;
- Preparation, implementation and monitoring of ESMPs and ESIAs;
- Reporting and monitoring implementation of ESMPs;
- Commodity-specific training on climate smart agriculture, environmental and social best practices, such as effective use of organic and chemical fertilizers, pest and disease management, water-saving agronomic practices, soil fertility management, low-impact farming methods as well as labour-saving techniques;
- Conflict resolution and grievance management mechanisms;
- Environmental (EMS 14001) and social audit, and report writing

Target Audience

The target groups for training should include, at least:

- Project Steering and Technical Committees;
- Regional and state environment/climate officers
- IFAD project staff
- Service providers
- Beneficiaries (i.e. incubators and apprentices)
- Agricultural insurance companies

Training Approach

The above-mentioned training topics will be delivered based on the needs of each training target group. Training will in the first instance be provided to the project staff as well as Steering and Technical Committees. The regional environment/climate specialists will then be trained to deliver a training of trainers (ToT) to the state environment/climate specialists and other stakeholders at the local government and community level. This ToT will particularly focus on ESMF process, screening requirements and approvals, including preparation of impact management plans and their implementation. Country project staff will be trained to support the private service providers with on-the-ground implementation of climate smart agriculture, improvement of resilience, implementation of mitigation and management measures, with special attention on water management and agrochemical application, handling, storage and disposal. Independent consultants will be contracted to carry out specific technical trainings. In most trainings, other resource persons from IFAD, academia, civil society and other development agencies will be invited to participate.

Capacity Building Costs (Estimate)

Activity	Year							Budget (USD)	Remarks
	1	2	3	4	5	6	7		
1. Stakeholder and community sensitization (7 countries states)									
2. Community sensitization (9 states)									
3. ToT training for regional and state environment/climate specialists, project staff and other relevant stakeholders on; a. Requirements of IFAD's SECAP and ERNM, Climate, Land and Disclosure Policies; b. ESMF processes, procedures and institutional arrangements to develop and implement required management plans; c. Screening and rating as prescribed in the ESMF; d. Environmental, social and climate impact assessment and mitigation; e. Preparation, implementation, monitoring and reporting of ESMPs and ESIA's.									
4. Soil testing, and soil analysis for value chains									
5. Data gathering and use of tools for data analysis									
6. Commodity-specific trainings on climate-smart agriculture, environmental and social best practices, including effective use of organic and chemical fertilizer, pest and disease management, water-saving agronomic practices, soil fertility management, low-impact farming methods and labour-saving techniques.									
7. Conflict resolution and grievance management									
8. Environmental (EMS 14001) and social audit and report writing									
Grand Total									

Annex 2– Eligibility Screening Form

Letter of Interest (Eligibility Screening Form)
Please complete all the required spaces in this form

1. Name: Surname -----Other Names:-----
Maiden name (for married women):-----
2. Sex: (a) Male { } (b) Female { }
3. Date of birth: -----
4. Highest Education Level: (a) No formal education { } (b) Primary School { } (c) Secondary School { } (d) Vocational school (e) Tertiary Education { }
5. Which community do you belong to: -----
6. How long have you lived in this community: -----
7. How do you belong to this community: (a) by birth { } (b) by marriage { } (c) other (specify):-----

8. Local Government Area (LGA): ----- State: -----
9. What enterprise are you interested in (see list of selected enterprises for the LGA): -----

10. Do you have any experience in this enterprise: (a) Yes { } (b) No { }. If yes, how many years: ----

11. Do you belong to any youth or women organization: (a) Yes { } (b) No { }. If yes, what is the name: -----

12. Do you belong to any cooperative society: (a) Yes { } (b) No { }. If yes, what is the name: -----

13. Do you have access to any land for the enterprise: (a) Yes { } (b) No { }.
14. If yes to question 13, where is the land located-----; and what is the area size of the land? -----
15. What kind of title do you have to the land: (a) Government paper { } (b) Inheritance from parent { } (c) husband or wife's consent { } (d) family allocation { } (e) community's allocation { } (f) Others (specify):-----

Endorsements:

Applicant: I certify that the information provided here is correct

Name: -----

Signature: -----

Date: -----

Community/traditional leader:

Name: -----

Sign: -----

Date: -----

Verifications:

Comments by the Local Government Liaison Office:-----

Name of Officer: -----

Designation: -----

Sign and date: -----

Comments by the State Project Coordination Office:-----

Name of Officer: -----

Designation: -----

Sign and date: -----

Screening:

Comments by service providers:-----

Categorical comments (a) Applicant Eligible { } (b) Applicant Ineligible { }

Annex 3 - Environmental and Social Screening Forms

A: Screening Form for Agri-Enterprise Projects

General Information

Project Name:	
Name of incubator / applicant:	
Name of Cooperative: Contact person's details:	
Name of Apex Group: Contact person's details:	
Project Location:	
Project sector (e.g rice farming, cassava processing, etc.)	
Estimated Cost:	
Proposed Date of Commencement:	
Expected Project duration:	
Site (estimated area in ha):	
Any equity/contribution brought into the project:	
Any plan for new construction:	

Screening for Environmental and Social Issues

Question	Yes	No	Additional explanation of 'Yes' response
1. Will the sub-project develop any wetlands?			
2. Would the sub-project result in economic displacement ⁴⁵ (loss of assets or access to resources) or physical resettlement			
3. Would the sub-project result in conversion and/or loss of physical cultural resources?			
4. Will the sub-project have significant social adverse impacts (affecting access to and/use rights to land, access to potable water and water for other uses) on local communities or other project-affected parties?			
5. Will the project trigger unsustainable natural resource management practices (fisheries, forestry, livestock, significant increase in use of agrochemicals) that exceed the carrying capacity?			
6. Does the sub-project include conversion of significant areas (above 50 ha) of natural forests/other wild lands?			
7. Would the project potentially cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. habitat loss, erosion/ other form of land degradation, fragmentation, hydrological changes)?			
8. Does the proposed project target area include ecologically sensitive areas ⁴⁶ ; areas of global significance for biodiversity			

⁴⁵ Economic displacement implies the loss of land, assets, access to assets, income sources or means of livelihoods (see SECAP Procedure Guidance Statement 13)

⁴⁶ 'Sensitive areas' include: protected areas (national parks, wildlife/nature reserves, biosphere reserves); areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical

Question	Yes	No	Additional explanation of 'Yes' response
conservation and/or biodiversity-rich area; habitats depended on by endangered species?			
9. Does the project involve fisheries development in situations where little information exists on sustainable yield?			
10. Could the project pose a risk of introducing invasive alien species?			
11. Does the project involve the transfer, handling or use of genetically modified organisms/living modified organisms that may have an adverse effect on threatened biodiversity?			
12. Is the project site close to any oil and gas installation such as flow stations, oil terminal, oil or gas pipeline right of way?			
13. Has oil spill/ or pipeline fire ever been recorded around project site?			
14. Does the project involve land use changes (agricultural intensification and/or expansion of the cropping area) and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods?			
15. Will the project result in increased use of agrochemicals which may affect the natural environment/human health?			
16. Does the project include small-scale irrigation and drainage projects, and water impoundment including small dams (except in wetlands)?			
17. Does the project involve agricultural intensification and/or expansion of cropping area in non-sensitive areas?			
18. Do the project activities include rangeland and livestock development?			
19. Does the project involve artisanal fisheries where there is information on sustainable yield?			
20. Do the project activities include aquaculture and/or mariculture?			
21. Do the project activities include watershed management or rehabilitation?			
22. Does the project include large-scale soil and water conservation measures?			
23. Does the project include small and micro enterprise development sub-projects?			
24. Does the project involve credit operations through financial service providers, including credit for pesticide/other agrochemicals, livestock purchasing, irrigation, etc.?			
25. Do the project activities include natural resources-based value chain development?			
26. Would any of the project activities have minor adverse impacts on physical cultural resources?			
27. Would the project have low probability to have physical resettlement or economic displacement?			
28. Does the project include development of agro-processing facilities?			
29. Will the project require a migrant workforce during construction?			
30. Will the project require seasonal workers to plant and/or harvest produce?			

cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability due to poverty, disease, ethnicity and race.

Question	Yes	No	Additional explanation of 'Yes' response
31. Will the construction or operation of the project cause an increase in traffic on rural roads?			

Guidance for sub-project categorization:

"Yes" response to any of questions 1-13	Sub-project Environmental and social category is A	ESIA is required for subproject
"Yes" response to questions 14-31	Sub-project Environmental and social category is B	Sub-project to adopt the ESMP in the general ESMF
"No" response to almost all questions	Subproject Environmental and social category is C	No further analysis is required

B: Screening Form for (Market) Infrastructure Sub-Projects

Name of market infrastructure:	
Infrastructure type:	
Location:	
Proposed Date of Commencement:	
Expected Project duration:	
Estimated cost:	
Estimate number of communities to be served:	
Estimated number of entrepreneur to be served:	

Screening for (Market) Infrastructure Sub-projects

Question	Yes	No
1. Will the project activities include construction/rehabilitation of rural roads or other rural infrastructure in protected/sensitive areas ⁴⁷ ?		
2. Does the project include construction of roads or other infrastructure that entail the total area being cleared of 50 ha or above?		
3. Does the project include construction of dam (s)/reservoir (between 5-15 m high with a reservoir exceeding 2 million m ³)?		
4. Does the project involve large-scale irrigation schemes rehabilitation/ development (above 100 ha)?		
5. Does the project involve significant extraction of ground water (significantly above recharge capacity)?		
6. Does the project include water-based (ground or surface) development where it is believed that significant depletion due to climate change or overutilization has occurred?		
7. Does the project involve significant extraction, diversion or containment of surface water?		
8. Does the project include drainage or correction of natural water bodies (e.g. river draining)?		
9. Will the project include construction/rehabilitation of rural roads that pass through oil infrastructure locations such as flow stations, tank farms or oil and gas pipelines?		
10. Would any of the project activities have minor adverse impacts on physical cultural resources?		
11. Does the project include development of agro-processing facilities?		
12. Will the project require a migrant workforce during construction?		
13. Will the construction or operation of the project cause an increase in traffic on rural roads?		
14. Has the government or community guaranteed the lease of the land for the (market) infrastructure?		
15. Is there any plan in place for sustainability of the infrastructure during the project life time?		
16. Does the project include specific measures to protect against dust (such as dust masks and water spraying)?		

⁴⁷ 'Sensitive areas' include: protected areas (national parks, wildlife/nature reserves, biosphere reserves); areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability due to poverty, disease, ethnicity and race.

17. Has arrangement been made to pay adequate compensation for private property that may be affected by the construction of the project?		
18. Will construction equipment with moderate decibels be used and the timing of use be so that people will experience less discomfort?		
19. Will tree and vegetation replanting be carried out to stabilize slopes and re-green road sides?		

Guidance for categorization:

"Yes" response to any of questions 1-9	Environmental and social category is A	ESIA is required
"Yes" response to questions 10-13	Environmental and social category is B	Sub-project to adopt the general ESMP in the ESMF
"No" response to almost all questions 1-13 and 'Yes' to questions 14-19	Environmental and social category is C	No further analysis is required

C: Climate Screening Form for Sub-Projects

To be used with the environmental and social screening forms.

Screening for Climate Issues

Question	Yes	No	Additional Explanation of 'Yes' response*
1. Is the project area subject to extreme climatic events such as flooding, drought, tropical storms, or heat waves?			
2. Do climate scenarios for the project area foresee changes in temperature, rainfall or extreme weather that will adversely affect the project impact, sustainability or cost over its lifetime?			
3. Will the project make investments in low-lying coastal areas/ zones exposed to river flooding and coastal storm surge?			
4. Will the project promote agricultural activity in marginal and/or highly degraded areas that have increased sensitivity to climatic events (such as on hillsides, deforested slopes or floodplains)?			
5. Is the project located in areas where rural development projects have experienced significant weather- related losses and damages in the past?			
6. Will the project develop/ install infrastructure in areas with a track record of extreme weather events?			
7. Is the project target group entirely dependent on natural resources (such as seasonal crops, rain-fed agricultural plots, migratory fish stocks) that have been affected by in the last decade by climate trends or specific climatic events?			
8. Will climate variability likely affect agricultural productivity (crops/ livestock/fisheries) or the associated incidence of pests and diseases for the project target groups?			
9. Would weather-related risks or climatic extremes likely adversely impact upon key stages of identified value chains in the project (from production to markets)?			
10. Is the project investing in climate-sensitive livelihoods that are diversified?			
11. Is the project investing in infrastructure that is exposed to infrequent extreme weather events?			

12. Is the project investing in institutional development and capacity building for rural institutions (such as farmer groups, cooperatives) in climatically heterogeneous areas?			
13. Does the project have the potential to become more resilient through the adoption green technologies at a reasonable cost?			
14. Does the project intervention have opportunities to strengthen indigenous climate risk management capabilities?			
15. Does the project have opportunities to integrate climate resilience aspects through policy dialogue to improve agricultural sector strategies/policies?			
16. Does the project have potential to integrate climate resilience measures without extensive additional costs (e.g. improved crop variety, capacity building; or including climate risk issues in policy processes)			
17. Based on the information available would the project benefit from a more thorough climate risk and vulnerability analysis to identify additional complementary investment actions to manage climate risks?			

Guidance for categorization:

"Yes" response to any of questions 1-9	Sub-project Climate risk is High	Climate risk Analysis is required for sub-project
"No" response to almost all questions	Sub-project climate risk is moderate	Sub-project to adopt the ESMP in the general ESMF

Annex 4 - Environmental and Social Guidelines for contractors⁴⁸

(for reference in contractor agreements/contracts)

Sound environmental and social management of construction projects can be achieved only with adequate site selection and project design. As such, the ESMP for projects involving any new construction, or any rehabilitation or reconstruction for existing projects, should provide information as to screening criteria for site selection and design including the following:

Site Selection

Sites should be chosen based on community needs for additional projects, with specific lots chosen based on geographic and topographic characteristics. The site selection process involves site visits and studies to analyze: (i) the site's, sub-urban, or rural characteristics; (ii) national, regional, or municipal regulations affecting the proposed sites; (iii) accessibility and distance from inhabited areas; (iv) land ownership, including verification of absence of squatters and/or other potential legal problems with land acquisition; (v) determination of site vulnerability to natural hazards, (i.e. intensity and frequency of floods, landslides, etc.); (vi) suitability of soils and sub-soils for construction; (vii) site contamination; (viii) flora and fauna characteristics; (ix) presence or absence of natural habitats and/or ecologically important habitats on site or in vicinity (e.g. forests, wetlands, rare or endangered species); and (ix) historic and community characteristics.

The rules (including specific prohibitions and construction management measures) should be incorporated into all relevant bidding documents, contracts, and work orders.

Prohibitions

The following activities are prohibited on or near the project site:

- Cutting of trees for any reason outside the approved construction area;
- Hunting, fishing, wildlife capture, or plant collection;
- Use of unapproved toxic materials, including lead-based paints, asbestos, etc.
- Disturbance to anything with architectural or historical value;
- Building of fires;
- Use of firearms (except by authorized security guards);
- Use of alcohol by workers.

Construction Management Measures

Solid, sanitation, and hazardous wastes must be properly controlled, through the implementation of the following measures:

Waste Management:

- Minimize the production of waste that must be treated or eliminated;
- Identify and classify the type of waste generated. If hazardous wastes (including health care wastes) are generated, proper procedures must be taken regarding their storage, collection, transportation and disposal;
- Identify and demarcate disposal areas clearly indicating the specific materials that can be deposited in each;
- Control placement of all construction waste (including earth cuts) to approved disposal sites (>300 m from rivers, streams, lakes, or wetlands). All garbage, metals, used oils, and excess material generated during construction should only be disposed in authorized areas, incorporating recycling systems and the separation of materials.

Maintenance:

- Identify and demarcate equipment maintenance areas (>15m from rivers, streams, lakes or wetlands);

⁴⁸ Adapted from Ministry of Agriculture, Irrigation and Water Development, Republic of Malawi (2015) *Environmental and Social Management Framework for Programme for Rural Irrigation Development in Malawi*, pp.76-80.

- Ensure that all equipment maintenance activities, including oil changes, are conducted within demarcated maintenance areas; never dispose spent oils on the ground, in water courses, drainage canals or in sewer systems;
- Identify, demarcate and enforce the use of within-site access routes to limit impact on site vegetation;
- Install and maintain an adequate drainage system to prevent erosion on the site during and after construction.

Erosion Control

- Erect erosion control barriers around perimeter of cuts, disposal pits, and roadways;
- Spray water on dirt roads, cuts, fill material and stockpiled soil to reduce wind-induced erosion, as needed;
- Maintain vehicle speeds at or below 10mph within the work area, 15mph or below within 200m of the site, and abide by the relevant speed limits at all times to / from the work area.

Stockpiles and Borrow Pits

- Identify and demarcate locations for stockpiles and borrow pits, ensuring that they are 15 meters away from critical areas such as steep slopes, erosion-prone soils, and areas that drain directly into sensitive water bodies;
- Limit extraction of material to approved and demarcated borrow pits.

Site Cleanup

- Establish and enforce daily site clean-up procedures, including maintenance of adequate disposal facilities for construction debris.

Safety During Construction

The Contractor's responsibilities include the protection of every person and nearby property from construction accidents. The Contractor shall be responsible for complying with all national and local safety requirements and any other measures necessary to avoid accidents, including the following:

- Carefully and clearly mark pedestrian-safe access routes;
- If school children are in the vicinity, include traffic safety personnel to direct traffic;
- Maintain supply of supplies for traffic signs (including paint, easel, sign material, etc.), road marking, and guard rails to maintain pedestrian safety during construction;
- Conduct safety training for construction workers prior to beginning work;
- Provide personal protective equipment (PPE) and clothing (such as goggles, gloves, respirators, dust masks, hard hats, steel-toed and –shanked boots, etc.) for construction workers and enforce their use;
- Post Material Safety Data Sheets for each chemical present on the worksite;
- Require that all workers read, or have read, all Material Safety Data Sheets. Clearly explain the risks to them and their partners, especially when pregnant or planning to start a family. Encourage workers to share the information with their physicians, when relevant;
- Ensure that the removal of asbestos-containing materials or other toxic substances be performed and disposed of by specially trained workers;
- During heavy rains or emergencies of any kind, apply construction safeguards guidelines;
- Brace electrical and mechanical equipment to withstand unexpected events during construction.

Nuisance and Dust Control

To control nuisance and dust the Contractor should:

- Maintain all construction-related traffic at or below 15 mph on streets within 200 m of the site;
- Maintain all on-site vehicle speeds at or below 10 mph;
- To the extent possible, maintain noise levels associated with all machinery and equipment at or below 90db;
- In sensitive areas (including residential neighborhoods, health centers, schools, etc.) more strict measures may need to be implemented to prevent undesirable noise levels;
- Minimize production of dust and particulate materials at all times, to avoid impacts on surrounding families and businesses, and especially to vulnerable people (children, elderly);
- Phase removal of vegetation to prevent large areas from becoming exposed to wind;

- Place dust screens around construction areas, paying particular attention to areas close to housing, commercial areas, and recreational areas;
- Spray water as needed on dirt roads, cut areas and soil stockpiles or fill material;
- Apply proper measures to minimize disruptions from vibration or noise coming from construction activities.

Community Relations

To maintain cordial community relations the Contractor should:

- Following the country and ESMP requirements, inform the population about construction and work schedules, interruption of services, traffic detour routes, as appropriate;
- Limit construction activities at night. When necessary ensure that night work is carefully scheduled and the community is properly informed so they can take necessary measures;
- At least five days in advance of any service interruption (including water, electricity) the community must be advised through clearly visible posters at the project site and at central community locations;
- Where possible, particularly for tasks that can also be performed through low-skilled manual labor (such as digging of shallow trenches, etc), make use of labor from the local community.

Chance Find Procedures for Culturally Significant Artifacts

In case culturally valuable materials (incl. shrines, graves, etc.) are uncovered during excavation:

- Stop work immediately following the discovery of any materials with possible archeological, historical, paleontological, or other cultural value, announce findings to project manager and notify relevant authorities;
- Protect artifacts as well as possible using plastic covers, and implement measures to stabilize the area, if necessary, to properly protect artifacts;
- Prevent and penalize any unauthorized access to the artifacts;
- Restart construction works only upon the authorization of the relevant authorities.

Environmental Supervision during Construction

The bidding documents should indicate how compliance with environmental rules and design specifications would be supervised, along with the penalties for non-compliance by contractors or workers. Construction supervision requires oversight of compliance with the manual and environmental specifications by the contractor or his designated environmental supervisor. Contractors are also required to comply with national and state regulations governing the environment, public health and safety.

Annex 5 - Checklist of Environmental and Social Impacts from Construction Works (Apply national construction standard and regulation)

Annex 6 - Social Inclusion Strategy will be developed and used as leverage for other projects and agricultural initiatives

Annex 7 – Outline of FPIC Implementation Plan⁴⁹

If adequate details on the project are not available at the Concept Note stage, the first design mission should identify the requirement for FPIC, and project components and activities that require FPIC by the rural communities. The mission should then develop the FPIC implementation plan indicating the process and time schedule for soliciting FPIC from concerned communities before the project design is completed.

An outline for the FPIC plan would include the following steps in the process and include timeline:

- **Conduct a sociocultural and land tenure assessment**
Provide information on the socio-cultural assessment, what has been done during design and what needs to be done during implementation. Provide information on when the sociocultural assessment will be ready
- **Identify decision-making institutions and representatives**
Describe consultations held during the project design (including name of communities, organizations contacts) phase and its outcomes. Describe how decision making institutions will be identified, representations formalized in order to agree upon the consultation process leading to FPIC of concerned communities. Indicate by when this process will be conducted.
- **Conduct consultation leading to FPIC on the proposed project/specific component/activities**
Describe consultations held during the project design (including name of communities, organizations contacts) phase and its outcomes. Describe the process of consultations to be conducted during implementation phase that will lead to the FPIC by the concerned communities. Indicate aspects of the proposed project that require FPIC. Indicate who will conduct the consultations. Indicate by when this process will be conducted. As part of the consultation process, specify whether participatory mapping will be used as an instrument for the consultation process leading to FPIC.
- **Formalize the consent agreement**
Specify that the consent agreement will be formalized in a written form or in other forms as agreed upon by the communities. Indicate by when the consent agreement will be formalized.
- **Assess FPIC implementation**
Describe how FPIC implementation will be assessed during joint supervision missions
- **Loan Agreement**
Indicate appropriate actions the borrower commits to undertake
- **Disclosure of documentation related to the FPIC process**
Indicate when documentation will be disclosed.
- **Document FPIC process**
Describe how the FPIC process will be documented

⁴⁹ IFAD.

Table 6 HTDN ON FPIC: Seeking FPIC at implementation stage

Conduct sociocultural and land tenure assessment	Identify decision-making institutions and representatives	Conduct consultation leading to FPIC	Formalize consent agreement
<p>From Concept Note through first design mission</p> <p>Identify:</p> <ul style="list-style-type: none"> • Customary laws, informal rules and organizing practices on land ownership • Institutions and governance systems • Types of livelihoods • Mutual support and solidarity mechanisms • Community stakeholders, land users and assess who has the right to give or withhold the consent <p>Assess:</p> <ul style="list-style-type: none"> • Consequences from the proposed project that may result in the change of the status of the lands, territories and resources 	<p>During first design mission</p> <ul style="list-style-type: none"> • Conduct preliminary consultations with the community and explain the nature of the proposed project • Allow time for communities to discuss and decide on their representatives for the consultation process leading to FPIC • Clarify responsibilities of representatives • Agree on the process leading to FPIC • Identify signatory parties for the consent agreement 	<p>From first design mission through appraisal</p> <ul style="list-style-type: none"> • Share objective and scope of the project with the representatives identified by the communities and identify project component(s) requiring FPIC • Inform them on the actors financing and implementing the project and their respective responsibilities • Provide clear and transparent information on the benefits and risks of the project • Share the findings of the sociocultural, land tenure and environmental assessment • Formalize consent agreement 	<p>Before QA (to be annexed to the PDR)</p> <p>Include:</p> <ul style="list-style-type: none"> • Respective expectations • Proposed project duration, expected results and activities • Participatory monitoring and verification plan and procedures • Identification of grievances procedures and mechanisms • Terms of withdrawal of consent • Record of process through means and languages accessible to all stakeholders and parties involved

WHAT?

WHEN?

HOW?

Annex 8 – Abbreviated Process for a Resettlement Action Plan (RAP)⁵⁰

In order to simplify the preparation of a RAP where 10 or less households will be economically or physically affected by the project, the following steps can be followed:

1. Carry out a census survey to identify the potentially affected people, giving the number of people and households affected.
2. Identify any vulnerable persons within this group in order to be able to accord them special consideration.
3. Set a well-defined cut-off date after which claims for eligibility to be included in the resettlement process will not be entertained.
4. Verify, through the relevant local government department, that the identified affected people are eligible to be included in the resettlement process.
5. Document the socio-economic status of the affected people including the value / assessment of their assets and other sources of livelihood that will be affected or lost.
6. Describe the various compensation options to be offered to each person/household to be resettled ('entitlement options'), and document preferred options for each person/household, providing the cost of that option. Involve the whole community and households in the decisions of such agreed upon compensation.
7. Document other resettlement assistance to be provided as requested by the affected persons, including their preferred choices.
8. Displaced people must be resettled within their own communities or villages, so that upheavals caused by resettlement are minimized. If this is not the case, then consult with the host communities for the provision of land and social services for the resettled persons, and provide support to them accordingly.
9. Describe the institutional roles and responsibilities for implementation of the resettlement plan including involvement of local government and NGOs in monitoring the plan.
10. Provide a clear timetable for the resettlement activities and a timeframe for the entire process. The timetable must ensure timely compensation/resettlement.
11. Provide the resettlement/compensation budget

ANNEX 9

⁵⁰ IFAD.

Table 9: Responsibilities of project implementing partners per project output/ Activities

Outputs	Activités	Responsibility
Component 1: Climate Information and early Warning Systems (CIEWS) for adaptive capacity building, planning and programming in agriculture coupled with a knowledge base on innovative climate smart agriculture practices/innovations.		
Output 1.1: Expanding and upgrading existing early warning systems and hydro met observation networks to enhance data collection, interpretation and understanding for adaptation actions by farmers.	Acquiring 18 automatic weather stations and 150 rain gauges	MINEDD
	Capacity building of SODEXAM in 18 automatic weather stations and 150 rain gauges	MINEDD
	Visiting and identification of areas installation of weather stations and rain gauges	MINEDD & SODEXAM
	Installation of 18 automatic weather stations; 150 rain gauges	Firm recruited and SODEXAM
	Upgrading and rehabilitation of existing 10 hydrological stations (automatic stage recorders) and its specialized hydrological equipment (acoustic doppler current profiler, bathymetric instruments...) Bandama Rivers and small flood-prone watersheds.	SODEXAM
	Systematically collecting data and undertaking risk assessments Improvement on crop modelling and assessment of climate vulnerability	SODEXAM
	Production of Weather reports for producers	SODEXAM
	Identification of local radios for the dissemination of local climate information	MINEDD and SODEXAM
	Dissemination of local climate information to local cocoa, cassava, rice producers specifically for droughts, floods and humidity.	SODEXAM and Local radios
	Develop hazard monitoring and early warning services including weather and hydrological monitoring equipment, improving forecast capabilities and the use of the CIEWS within agricultural advisories, drought and flood risks monitoring	SODEXAM
	Development of digital platforms for dissemination of local climate information	MINEDD
	Facilitate the collaboration between SODEXAM and Telecom companies to disseminate weather climate information through digital platforms and sms to cooperatives and extension services for cropping calendar and planning	MINEDD
Output 1.2: Capacity and knowledge of rural communities, cooperatives, farmers organizations extension agents, decision makers are strengthened to understand climate risks and adapt better to climate shocks.	Training of some local radios for the dissemination of local climate information	
	Training of 10,000 smallholder farmers on the timely dissemination of early warning products (including agro-climatic information)	MINEDD and SODEXAM
	Raising awareness among 15,600 smallholder farmers on the best climate adaptation/mitigation practices/technologies in agriculture	MINEDD, SODEXAM, ANADER and MINADER
	Training of 100 extension agents on climate resilient agriculture	MINEDD, SODEXAM, ANADER and MINADER
	Development of a capacity-building program for government authorities	MINEDD

	Capacity-building programs for government authorities to support decision making and local contingency planning, regulatory bodies	MINEDD
	Build national and rural communities response capabilities to effectively when warnings are received, access to property rights and control over assets	MINEDD/ Ministry of Gender
Component 2: Climate-proofed agricultural production and post-harvest combined with livelihood diversification		
Output 2.1: Best available technologies and Integrated Climate Smart Agriculture practices are deployed in rice, cocoa and cassava production systems.	Establishment of demo plots to demonstrate best reforestation and agro forestry techniques	MINEF
	Development of cocoa farms, which include resilient practices such as vulnerability-informed land use, tree shading and agroforestry.	International Cocoa organization and MINEF
	Uprooting and rehabilitation/reconversion of about 6000 ha of overaged or affected by disease plantations, with full compensation paid to producers	International Cocoa organization and MINEF
	Dissemination of local climate information to local cocoa producers specifically for droughts, floods and humidity. The project will strengthen the network of agrometeorological stations with the installation of 18 automatic weather stations and 10 hydrological stations. The project will also leverage climate information for cropping calendars.	International Cocoa organization and MINEF
	Improvement on crop modelling and assessment of climate vulnerability	International Cocoa organization and MINEF
	Use of modern technologies with a particular focus on solar based pumping systems, solar based post-harvest processing equipment to attract more youth in agriculture	International Cocoa organization and MINEF
	Facilitating farmers' access to improved climate friendly cocoa and rice production technologies and farming systems	International Cocoa organization and Africa Rice
	Improving cocoa and rice research system through partnership with the cocoa board the international cocoa organization, relevant international centers and the private sector	MINEDD
	strengthening the overall production performance of rice and cocoa through sustainable monitoring and evaluation systems, including a Grievance Redress Mechanism (GRM) to monitor development and compliance with environmental and social safeguards	International Cocoa organization and Africa Rice
	Development of credible certification programs and promotion of cocoa and rice production for niche markets through the development of specific geographically-based production	International Cocoa organization and Africa Rice
	Establishment of cocoa and rice dedicated logistics platforms in the selected intervention areas	International Cocoa organization and Africa Rice
	Training programs to develop the technical and managerial skills necessary to support the promotion of competitive	International Cocoa

processing by small and medium-scale entrepreneurs (including cooperatives).	organization and Africa Rice
Review of the traceability of cocoa production and marketing, from plantations to export points	International Cocoa organization and Africa Rice
Strengthen of cocoa and rice cooperatives and support to establishing Cocoa Inter-profession, with a genuine public-private partnership that will ensure producers, private sector and civil society participation in the management of the sector	International Cocoa organization and Africa Rice
Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)	Africa Rice
Expanding the System of Rice Intensification (SRI)	Africa Rice
Support to MOA to run Farmer Field Schools and provide other technical support.	Africa Rice and MPR
Capacity building in modern composting techniques to reduce/prevent movement of farms to fallow land in secondary cropping years	Africa Rice and MPR
Boreholes irrigation schemes, to cope with the consequences of drought and heat extreme events, boreholes will be rehabilitated and irrigation schemes will be deployed.	Africa Rice and MPR
Development of new Inland Valley Swamps for rice production to increase the production of smallholder farmers and diversify and expand their revenue sources.	Africa Rice and MPR
Wet-season valley bottom water control cascaded dykes	Africa Rice and MPR
Micro-catchment water runoff control dykes	Africa Rice and MPR
Construction or consolidation of structures for gravity irrigation serving 8,000 producers	Africa Rice and MPR
Watershed rehabilitation, water efficiency and management,	Africa Rice and MPR
Training and extension and infrastructure rehabilitation and construction including drainage systems	Africa Rice and MPR
An assessment of the impact of cassava production on rural livelihoods as a climate change adaptation strategy	MINADER, Swiss Centre, SODEXAM and MINEDD
Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding)	CNRA, ANADER and MINADER
Community mobilization and organizing to take up cassava as a climate smart cash crop and cooperative development as well and promotion of biogas technology using starch and waste,	Swiss Centre, ANADER and MINADER
Support female farmers to engage in commercial cassava production (including training in sustainable cassava production, negotiating access to farmland, tractors)	Swiss Centre, ANADER and MINADER
Conduct random control trails for rigorous testing and evaluation of the impact of cassava uptake on the resilience of female farmers and drought prone communities	Swiss Centre, ANADER, and MINADER
Support cooperatives with processing units	ANADER and MINADER

	Support for the marketing of agricultural products and promotion of rural entrepreneurship	ANADER et CNRA
Output 2.2: Income-generating activities focusing on climate resilient fish farming on the Bandama river basin, conservation, processing units, marketing) are promoted as livelihood diversification measures.	Construction of 20 earth dams less than 15m high for fish farming activities.	MH and MIRAH
	Establishment of fish farms, including the creation of value-chain services (fingerling, etc.).	MIRAH
	Training of farmers on Tilapia and Milkfish production	MIRAH
	Designing and construction of ponds/enclosures	MH and MIRAH
	Purchase and distribution of fingerlings to farmers	MIRAH
	Establishment and building capacity for fish farmers cooperative	MIRAH
Component 3: Institutional capacity building, policy engagement and knowledge management.		
Output 3.1: Capacity of the government (esp. Ministry of Environment, Ministry of Agriculture, Ministry of Water and forest, Ministry of Rice, local councils, SODEXAM, FIRCA,) in planning and better managing climate risk is strengthened	Strengthening of capacities of staff Ministry of Environment, Ministry of Agriculture, SODEXAM on climate change adaptation (Capacity building through technological enhancement, Training to enhance institutional capacity).	MINEDD and SODEXAM
	Strengthening of the Meteorological Department and local representation, including capacity building through technology enhancement and training to enhance institutional capacity.	MINEDD and SODEXAM
	Technical Assistance for improved policy frameworks to mainstream climate risks in into sectoral strategies and policies.	MINEDD and SODEXAM
Output 3.2: Activities are adequately coordinated, monitored and evaluated	Support to the development of Measurement Reporting and Verification system of climate response programmes.	MINEDD
	Support to the improved monitoring & evaluation and knowledge management activities, which will include; Additional baseline survey costs (related to climate change adaptation) and additional terminal survey costs (related to climate change adaptation).	MINEDD
	Project management and coordination, including the recruitment of Climate change adaptation specialist for the duration of the project and Staff training on adaptation-related issues.	MINEDD
	Production of knowledge management products like packages of practices, e-newsletters, interviews and success stories	MINEDD and SODEXAM
	Dissemination of Production of knowledge management products via online and offline channels.	MINEDD

Annex 10 – List of Organizations met during the national consultations

Organisation / Institution	Nombre
Assemblée Nationale de Côte d'Ivoire	1
Primature de la République de Côte d'Ivoire	1
Ministère de l'Économie et des Finances	1
Ministère du Budget et du Portefeuille de l'État	1
Ministère du Plan et du Développement	1
Ministère de l'Intérieur et de la Sécurité	1
Ministère du Pétrole, de l'Énergie et des Énergies Renouvelables	1
Ministère de l'Assainissement et de la Salubrité	1
Ministère de l'Agriculture et du Développement Rural	1
Ministère des Eaux et Forêts	1
Ministère de la Santé et de l'Hygiène Publique	1
Ministère des Ressources Animales et Halieutiques	1
MINEDD – Direction de la Lutte contre les Changements Climatiques (DLCC)	1
Agence Nationale de l'Environnement (ANDE)	2
Centre Ivoirien Anti-Pollution (CIAPOL)	2
Agence Nationale de Gestion des Déchets (ANAGED)	2
Office Ivoirien des Parcs et Réserves (OIPR)	2
Société pour le Développement des Forêts (SODEFOR)	2
Agence Nationale d'Appui au Développement Rural (ANADER)	2
Société d'Exploitation et de Développement Aéroportuaire, Aéronautique et Météorologique (SODEXAM)	2
Comité National de télédétection et d'Information Géographique (CNTIG)	2
Office National de l'Assainissement et du Drainage (ONAD)	2
Fonds National de l'Environnement (FNDE)	2
Fonds Interprofessionnel pour la Recherche et le Conseil Agricoles (FIRCA)	2
Centre National de Recherche Agronomique (CNRA)	2
Office National de l'Eau Potable (ONEP)	2
Groupe SIFCA	2
Assemblée des Régions et Districts de Côte d'Ivoire (ARDCI)	1
Union des Villes et Communes de Côte d'Ivoire (UVICOCI)	1
Conseil Régional de la Marahoué	1
Conseil Régional du Poro	1
Conseil Régional du Gbêkê	1
Conseil Régional de la Nawa	1
Conseil Régional du Sud-comoé	1
Conseil Régional du Béliér	1
Association des Producteurs de Vivrier de la Région du Béliér	1
ONG sauvegarder l'Environnement pour se développer de Korhogo	1
ONG Femme en action-CI pour l'Écologie et une Agriculture Durable - Bouaké	1
ONG page verte	1
GIE des femmes producteurs de Manioc de la region du Belier	1
Associations des Jeunes region de Korogho, region du belier	
Centre Universitaire de Recherche et d'Application en Télédétection (CURAT)	1
Centre Ouest Africain de Service Scientifique sur le Changement Climatique et l'Utilisation Adaptée des Terres (WASCAL)	1

Chambre de Commerce et d'Industrie de Côte d'Ivoire (CCI CI)	1
Confédération Générale des Entreprises de Côte d'Ivoire (CGECI)	1
Fédération des Réseaux et Associations de l'Énergie, de l'Environnement et du Développement Durable (FEREADD)	1
Point Focal Fonds Vert pour le Climat	1
Point Focal Fonds d'adaptation	1
United Nations Development Programme (UNDP)	1
Food and Agricultural Organization of the United Nations	1
Total	64

Annex 10 – sample of of the List of Stakeholder Consultation Participants and Pictures.

LISTE DE PRESENCE

DATE : DATE : 05/04/2019

LIEU: Direction du Reboisement et du Cadastre Forestier Tour C 8ème étage
 OBJET : séance de travail

N° d'ordre	Nom et prénoms	Fonction	structure	Contact téléphonique	E-mail	VISA
01	Col. AKE Kanga Jérôme	Directeur	BRP/01/05EF	0757 31 31	akanga2@gmail.fr	
02	Joachim ASSO	AD	Clina Capital Poussier CORPORATION	+1 202 758 7113	Joachim.asso@capitalinvestor.com	
3	CARLOS LUDENA	SPECIALIST ADAPTATION	BRP/01/05EF	+66 166 7231 17	CARLOS.LUDENA@gmail.com	
4	ASWERMEN STELVA	Team Leader	Episilon	+1 240 476 374	aswermen@episiloninnovation.com	
5	HAUY SIALABO	ADAPTATION	CPB/BP	+201 221 1597	loays.hauby@gmail.com	
6	MARJORIE MÉRARD	Consultante Atténuation	Perspectives Durable	+34 637 620 695	marajet.perechuk@gmail.com	
7	N'gui Fouweh Am You	Responsable Région: Fouta	MINEM/Grand	49175 80 1	Fouweh.n@gmail.com	
8	NTCOL ABASSA YAVO Nicolod	Chef de Projet Unité Ecologie	MINEM/Grand	79 30 35 52	nicolas.abassa@gmail.com	
9	Le SOLO Mamadou	Directeur	MINTE/DRGF	0783 4249	lesolemam@gmail.com	
10	Gre BON soun soun	Spécialiste	MINTE/DRGF	09 23 10 33	bon.soun@gmail.com	
11	Ou KONATE K. Jean-Luc	CE	01/05EF/BRP	0742 18 58	luc.konate@gmail.com	

MINISTÈRE DE L'AGRICULTURE
ET DU DÉVELOPPEMENT RURAL

DIRECTION GÉNÉRALE
DU DÉVELOPPEMENT RURAL
ET DE LA MAÎTRISE DE L'EAU
DANS LE DOMAINE AGRICOLE

DIRECTION DE LA MAÎTRISE DE L'EAU ET DE
LA MODERNISATION DES EXPLOITATIONS

REPUBLIQUE DE CÔTE D'IVOIRE
Union-Discipline-Travail

LISTE DE PRESENCE

Objet :

Date : 03 Avril 2019

Lieu : DMEME / MINADER

No	NOM ET PRENOMS	STRUCTURE/FONCTION	TELEPHONE	CONTACT		SIGNATURE
				E-MAIL		
01	N'Guerran Koffi Kodjigbe	DI ENNE / Directeur	20 22 32 35			KS
02	KOUAME SEBASTIEN	DMEME / S-D	06 75 07 46	sebastienkouame@gmail.com		KS
03	Bati Richard	DMEME	06 05 85 54	batirichard@sigmevi.com		SMH
04	SEMAMA ASSO	France Capital/ Directeur ADAPTATION	+1202 758 4458	semama@capitalgratiers.com		CS
05	CARLOS LUDENA	Consultante Respectiveves Climatologie	+34 631 62 655	menard@perspectiveves.com		CS
06	MARJORIE MÉNARD					
07	André Jean - Yves	PNCC / MINADER	07 13 55 74	andryves.roy@sigmail.com		

Annex 11 – Pictures of Field Survey and Consulation Participants



Key local representatives and farmers in the study area of Bandama Basin (Top to bottom Toumbokro, N'Vlankro, Golykpangbassou and N'Guessan Pokoukro (February 4 – 8, 2020).

Annex12 : National validation Workshop : 4-5 August 2020 -



**ATELIER DE VALIDATION DE LA PROPOSITION COMPLETE DE PROJET A
SOUMETTRE AU FONDS D'ADAPTATION (FA).**

Liste de Présence Générale

Date : Mardi 04 Août 2020

Lieu : Hôtel La Rose Blanche

Heure : 08h00-17h

N°	NOM ET PRENOMS	GENRE (F/M)	STRUCTURE	FONCTION	PROVENANCE	CONTACTS	EMARGEMENT
1	François Kouablan	M	MINEDD	Directeur de Cabinet	Abidjan	Cel: E.mail:	
2	Domador Fofana	M	Présidente	Conseiller	Abidjan	Cel: 05 05 84 11 E.mail: domador.fofana@premiere-ministerie.gouv.ci	
3	Philippe KOFFI	M	Président	CT	Abidjan	Cel: 08-61-76-64 E.mail: philippe_koffi@yahoo.fr	

MINISTRE DE L'ENVIRONNEMENT ET DU DEVELOPPEMENT DURABLE

4	KAHIBA Lambert	M	ANCI	Député	Abidjan	Cel: 08 56 72 74 E.mail: lambert.kahiba@yahoo.fr	
5	ASSIE Richemond	M	PNCC	Coordinateur NDC SP	Abidjan	Cel: 08 39 20 65 E.mail: richemond.assie@undp.org	
6	SANOGO Mohamed	M	PNCC	Coordinateur -mateur	Abidjan	Cel: 08 80 81 46 E.mail: mSanogo24@gmail.com	
7	AKOMI Oreste Sankoh	M	MINEDD DLCC	SD. PF-FA	Abidjan	Cel: 08 45 43 03 E.mail: o.akomi@environnement.gouv.ci	
8	Kouan André Jean-Yves	M	MINEDD PNCC/NGO	Coordinateur	Abidjan	Cel: 07 13 55 71 E.mail: andyveskadyo@gmail.com	
9	N'BI Frouck Anvou	M	MINEDD PNCC	Expert Régional	Abidjan	Cel: 49 67 52 01 E.mail: frouckanvou@gmail.com	
10	MELEDJE Aya Risca Alexandra	F	MINEDD PRC/FC	Assistante Administrative Financière	Abidjan	Cel: 49 33 54 93 E.mail: alexandra.meledje@gmail.com	
11	LIADÉ Dissahonon Marie Sylvie	F	MINEDD PNCC	Assistante Technique	Abidjan	Cel: 57 39 35 15 E.mail: dissahononliade@gmail.com	
12	TA BI ZANIA APPELI	M	Ministère PNCC	Assistante Technique	Abidjan	Cel: 47 29 48 57 E.mail: zaniapappeli@gmail.com	
13	BOUYI N'DA GRACE	F	MINEDD	Assistante Admin	Abidjan	Cel: 08 49 52 97 E.mail: divinebouyi@gmail.com	

MINISTRE DE L'ENVIRONNEMENT ET DU DEVELOPPEMENT DURABLE

N°	NOM ET PRENOMS	GENRE (F/M)	STRUCTURE	FONCTION	PROVENANCE	CONTACTS	EMARGEMENT
14	Touah T. Firmin	M	DAP	chef Service	ABIDJAN	Cel: 57 78 57 47 E-mail: tahafo@yahoo.fr	
15	N'DRI Norbert	M	DG-DL	ET	Abidjan	Cel: 57 55 57 02 E-mail: ndr.norbert03@yahoo.com	
16	BAHIRE epse KONE Saromato	F	HH	Directeur	Abidjan	Cel: 01 96 54 48 E-mail: obahire@hotmail.com	
17	DJOUSSA Denise Mariette Chinan	F	PNCC	Assistante Adm & Fin.	Abidjan	Cel: 47 21 51 54 E-mail: denisedjoussba@gmail.com	
18	N'DRI K. d'ime'	M	PNCC	A.T	Abidjan	Cel: 08 00 51 10 E-mail: nkaimet@gmail.com	
19	EZA ECRAN TIATHEU	M	ANADER	CHEF cellule chgt climatique	Abidjan	Cel: 02 05 08 62 E-mail: ezamatien@yahoo.com	
20	Douhal Gouli	M	Abidjan et Kourakiste			Cel: 65 63 38 03 E-mail: goulihalou@yahoo.com	
21	Brice DELAGNEAU	M	ANISTAD	Pdt	Abidjan	Cel: 01 26 24 88 E-mail: bricedelagneau@amistad.ci	
22	ASSAMOIS Eric Michel	M	MINES DLCC	Directeur	Abidjan	Cel: 88 36 03 00 E-mail: eric_michel_assamoi@yahoo.fr	

24	KOUAKOU Mireille	F	SO DEFOR	chef Service Projets	Abidjan	Cel: 51 24 88 82 E-mail: kouakoumireille@yahoo.fr	
25	KOUAKOU KOUASSI SALOMINA	M	PNCC	Assistant Technique	Abidjan	Cel: 71 63 52 25 E-mail: kouakoukouassi@gmail.com	
26	KEIZA Christian	F	ministère Budget	chef de Service	Abidjan	Cel: 07 26 78 17 E-mail: christaebiza@yahoo.fr	
27	Dr. NI GUESSENI RE VANI HERZOU	M	UNEP/ L'AFR	Coordinateur Urbanisme	Abidjan	Cel: 43 21 63 35 E-mail: vani2outlook.com	
28	Dr ADIKO Adiko Franck	M	CIRCS	chercheur	Abidjan	Cel: 08 02 89 25 E-mail: adiko.franck2@gmail.com	
29	Mimo FOFANA Yelli Mariam	F	ONEP	chargée d'études	Abidjan	Cel: 01 37 66 53 E-mail: yellimariamf@gmail.com	
30	MARO ROECK	M	ARDCI	chargé de opérations de projets	Abidjan	Cel: 08 15 84 18 E-mail: maroeroeck@yahoo.fr	
31	BOUTOU GISENE	F	IDV	S.E	Abidjan	Cel: 07 09 63 95 E-mail: boutougise@gmail.com	
32	Jeanne Irene Koumo	F	IDV Page verte	Présidente Fondation	Abidjan	Cel: 77 30 85 73 E-mail: jeanneirenelkomo@gmail.com	
33	DADIE Guy Patrice	M	MINES/ DLCC	Président PP GCF	Abidjan	Cel: 58 48 47 37 E-mail: patrickdadie@gmail.com	

14	Tamoh T. Firmin	M	DAP	chef Service	ABIDJAN	Cel: 57 78 57 47 E.mail: tahafo@yahoo.fr	
15	N'DRI Kouassi Nord	M	DGDDL	CE	Abidjan	Cel: 57-515762 E.mail: ndr.norbert03@yahoo.com	
16	BAHIRE epse KONE Saromato	F	MH	Directeur	Abidjan	Cel: 01965468 E.mail: sbahire@hotmail.com	
17	DOUGBA Denise Mariette Chinan	F	PNCC	Assistante Adm & fin.	Abidjan	Cel: 47 21 51 54 E.mail: denisedougba@gmail.com	
18	N'DRI K. Aime'	M	PNCC	A.T	Abidjan	Cel: 08 00 51 10 E.mail: nkaimex@gmail.com	
19	EZA ECRAH TIATREU	M	ANADER	CHIEF cellule chgt climatique	Abidjan	Cel: 02050862 E.mail: ezamatien(e)gmail.com	
20	Donahé Gouli	M	Abidjan	et Roukoko		Cel: 65 65 37 05 E.mail: gouli.donahel@yahoo.com	
21	Brice DELAGNEAU N.	M	ANISTAD	Pdt	Abidjan	Cel: 01 26 24 88 E.mail: bricedelagneau@univ-sted.ci	
22	ASSAMOI Eric Michel	M	MINED DLCC	Directeur	Abidjan	Cel: 88 36 03 00 E.mail: eric_michel_assamoi@yahoo.fr	
23	Bamba ASANA	M	WASCAL	Enseignant Chercheur	Abidjan	Cel: 07 70 03 59 E.mail: adambamba_2000@yahoo.com	

34	Kouakou Kouadio Eugene	M	MINED PNCC	chef de Cellule	Abidjan	Cel: +22307252309 E.mail: kougoukou20@gmail.com	
35	ESSECOFFY Guillaume	M	ADERIZ	CS Envir F	Abidjan	Cel: 58 99 77 82 E.mail: guillaouguil@essecoffy.com	
36	LICOL APATA Y. Nicolas	M	MINED	chef de service unite de Etude	Abidjan	Cel: 79 30 35 52 E.mail: nicolasapata@gmail.com	
37	EHUI Tiémélé Raphaël	M	ONEG	charge d'Etudes	Abidjan	Cel: 07702825 E.mail: ehui.raphael@gmail.com	
38	KINDIA BONI NARCISSE	M	SEDOTAT	chef de Bureau chargement clavier	Abidjan	Cel: 07274821 E.mail: narcisse.kindia@sedotat.ci	
39	AYEMOU EDONDO	M	FIRCA	chef service Financiers et personnels	Abidjan	Cel: 0780580 E.mail: ayemou@firca.ci	
40	AKA SEPTIEME	M	DGDDL MATED	Conseiller Technique	Abidjan	Cel: 57 91 01 36 E.mail: akaxptine@yahoo.fr	
41	FAPU LIONEL LEROY	M	PNCC	A.T	Abidjan	Cel: 09 14 77 00 E.mail: fapulero@gmail.com	
42	GNOKO FLORE	F			Abidjan	Cel: 08329209 E.mail: flore.gnoko2102@gmail.com	
43	Amal Rith SENE	M	FIBA	chef FIBA	Abidjan	Cel: 09 13 02 43 E.mail: amal_sene@ifad.org	