Investing in rural people

Nigeria

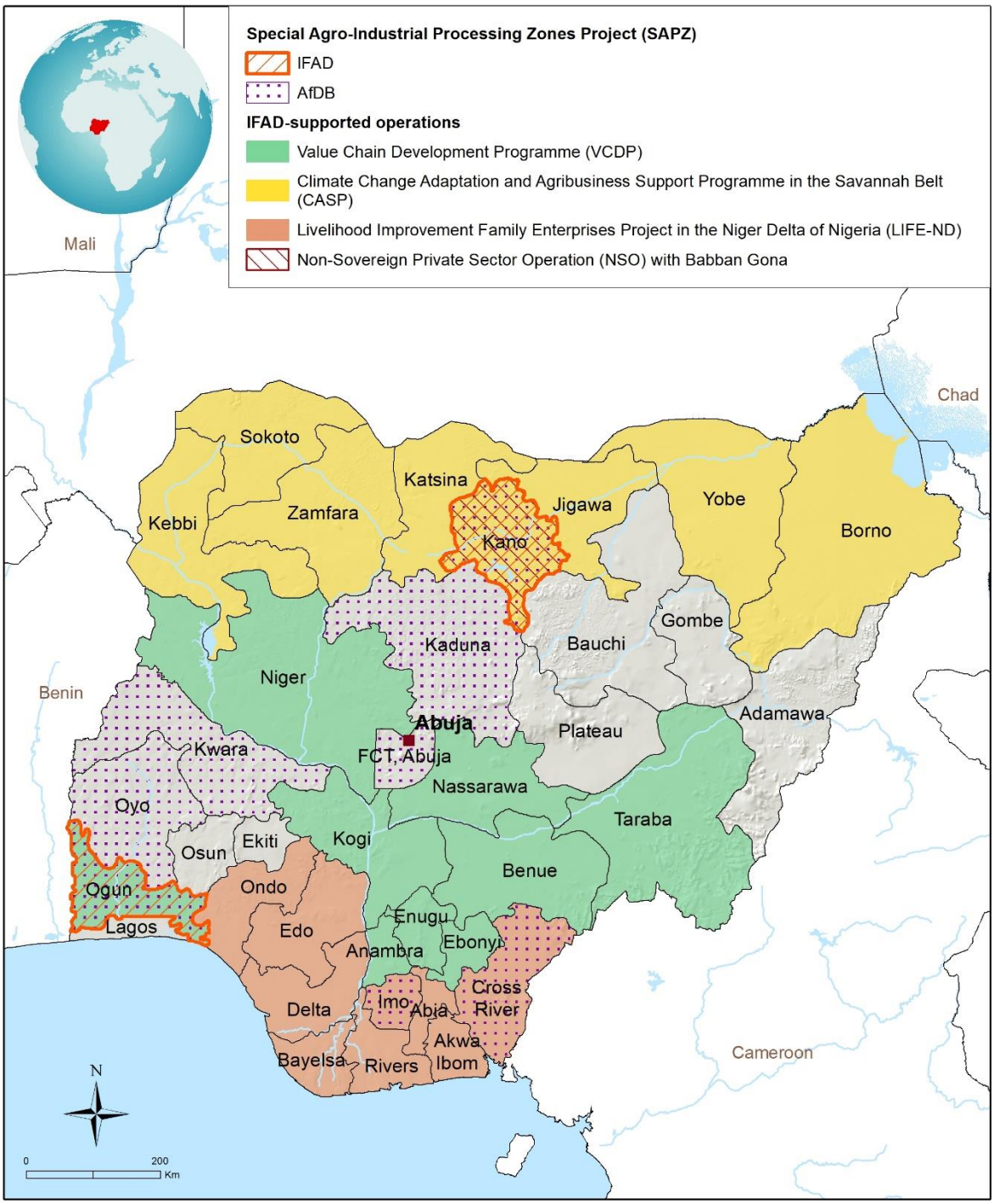
Special Agro-Industrial Processing Zones (SAPZ)
Environmental and Social Management Framework

September 2021

Contents

Abbreviations and acronyms

AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
AWPB	Annual Work Plan and Budget
CAF	Commodity Alliance Forum
CASP	Climate Change Adaptation and Agribusiness Support Programme
COSOP	Country Strategic Opportunities Programme
ERGP	Economic Recovery and Growth Plan
EIRR	Economic Internal Rate of Return
ESMF	Environmental and Social Management Framework
FGN	Federal Government of Nigeria
FIRR	Financial Internal Rate of Return
FMARD	Federal Ministry of Agriculture and Rural Development
FO	Farmers' Organization
GHG	Greenhouse Gas
HH	Household
IFAD	International Fund for Agricultural Development
IITA	International Institute of Tropical Agriculture
KM	Knowledge Management
KMC	Knowledge Management And Communication
LGA	Local Government Area
M&E	Monitoring And Evaluation
MT	Metric Ton
MTR	Midterm Review
NAIC	Nigerian Agricultural Insurance Corporation
NGN	Nigerian Naira
NIMET	Nigerian Meteorological Agency
NPC	National Programme Coordinator
NPMU	National Programme Management Unit
NRCRI	National Root Crops Research Institute
PBAS	Performance Based Allocation System
PCU	Programmes Coordinating Unit
PME	Planning, Monitoring and Evaluation
SAPZ	Special Agro-Industrial Processing Zones
SECAP	Social, Environmental and Climate Assessment Procedures
SPMU	State Programme Management Unit
VC	Value Chain
VCDP	Value Chain Development Programme



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

Map compiled by IFAD | 23-08-2021

Executive Summary

Introduction: Nigeria has since 2015 record modest growth in the agriculture sector aimed at addressing self-sufficiency in food production and position agriculture as a business. The agriculture sector accounts for about 21% of GDP and contributed the most to growth in 2017, expanding by 3.5% in 2017. The Federal Government of Nigeria (FGN) strategic vision is to move away from years of neglect of the agricultural sector and increase domestic food production, reduce the over US$ 6 billion annual agricultural imports, and turn the country's huge food deficit into a market and employment opportunity for smallholders and small operators. At the core of this strategy is the development of Special Agro-Industrial Processing Zones to establish a modern in-country agro-processing capacity to supply the domestic market, promoting green investments, and providing profitable market outlets to rural households.
In addition to creating the right investment and policy frameworks for SAPZs, the FGN's challenge is to capacitate the millions of Nigerian rural smallholders and operators, youth and women living below the poverty line to take advantage of the SAPZ market outlets. The FGN has therefore requested the joint support of AfDB and IFAD in the materialization of this agricultural transformation agenda.

Development objective: The overall development objective of the SAPZ programme is twofold: (1) Support the development of SAPZ in high food production areas to supply the domestic food market and create exportable surpluses; and (2) Capacitate smallholder farmers, small agro-processors and traders, and community-based service providers, including women and youth to take advantage of the market demand created by the SAPZ to sustainably enhance their income and household food security. In line with IFAD's and AfDB mainstreaming commitments, the promotion of gender equality and women's empowerment, youth empowerment, nutrition and environmental sustainability and climate change will be mainstreamed across programme activities.

Targeting and Implementation: The Special Agro-Industrial Processing Zones (SAPZ) Program is to be implemented in the Federal Capital Territory (FCT) and seven (7) states (Kano, Kaduna, Oyo, Kwara, Ogun, Imo, and Cross River) in Phase I. Within this target area, ***IFAD will focus its investments in two states : Kano and Ogun States***, which are the target of this ESMF, to leverage ongoing investments and implementation structures in IFAD- supported programmes in these states. The program in KANO build on and expand the experience in Ogun states with the VCDP program. SAPZ primary target groups through AfDB's investments are agroindustry investors, large aggregators and support service providers operating in the AIH and ATCs. SAPZ Phase I will directly benefit at least 1.5 million households (a large proportion of whom are directly engaged in agriculture, with 50% women) along the entire agricultural value chain including private sector agribusinesses and agro-processors, smallholder farmers, agri-preneurs and agro-dealers. IFAD investments will target 55,000 direct beneficiaries comprising 90% farmers/producers and 10% processors, traders and community-based service providers. The programme is gender transformative, nutrition and youth sensitive, with women accounting for 50% of the direct beneficiaries and youth (aged 18-29) for 40%. The programme will also support persons with disabilities, and internally displaced persons to gainfully engage in commercial agriculture.

Project implementation: The Federal Ministry of Agriculture and Rural Development (FMARD), through the National Programme for Agriculture and Food Security (NPAFS), will have the overall responsibility for programme implementation. The programme will receive oversight and guidance from the Programme Steering Committee (PSC). At the State level, there will be a State Steering Committee (SSC). The National Programme Management Unit (NPMU) will manage the implementation of activities and provide technical support to and undertake coordination of programme activities undertaken in each State. The day-to-day implementation of the programme at the state level will be the responsibility of the State Programme Management Unit (SPMU).

Environmental and social Risk categorization and key environmental issues: For the SAPZ project, the safeguards to be applied is the AfDB Safeguards. As exact locations are unknown, ESMF for each states have been developed. Because the programme may likely to cause significant E&S impacts particularly the heavy AfDB led activities around Agro-industrial hubs and Agricultural transformation Centers, the project is classified **Category 1** under AfDB equivalent to '**Category A**' under IFAD safeguards.
AfDB has developed and disclosed the general ESMF and for each states, which this additional ESMF complements on more IFAD funded activities. The subproject-specific ESIA developed by the states have also been disclosed by AfDB to guide the joint project implementation. IFAD will support activities that will provide light, off-site market infrastructure including land development, rehabilitation of market-connected farm roads, construction/rehabilitation of earthen dams, provision of small irrigation facilities including tube wells, boreholes with solar pumping and provision of water facilities for animal and human consumption. This additional document provides more granularity on IFAD key funded activities, risks and mitigation measures.

Climate categorization: The project is categorized climate **high** due to the vulnerability of the selected states to climate change. The Kano region and southwest Nigeria where the IFAD-SAPZ states are located are fast becoming hotspots of environmental, climate and social risks and vulnerabilities. The target group of the sub-project is substantially dependent on climate-sensitive rain-fed agricultural plots, and a large part of the area subject to annual flash-flooding. Climate variability including unexpected dry spell occasioned by unpredictable rainfall and temperature can affect the sub-project impact, sustainability and return on investment.However, SAPZ has substantial potential to integrate climate resilience measures without extensive additional costs through capacity building programmes in climate smart agricultural strategies and strong collaboration with extension and weather and climate monitoring agencies to receive regular agro-climatic information and use of the right/appropriate cultivars. In addition, the Green Climate Fund (GCF) through the Inclusive Green Financing Initiative (IGREENFIN)will support Mitigation activities in to reduce/mitigate GHG emissions and Adaptation activities to strengthen climate resilience in production and processing and improve adaptive capacity of women and youth in SAPZ.

In the past few years, the states have also become theatre of conflicts and struggle for agricultural and grazing lands and water orchestrated by climate change and poor land management. These have severely heightened the human insecurity, food insecurity, and displacement with attendant loss of investment on agriculture. Other environmental, climate and social risks that also need to be addressed include: incident of dry spell and drought, erosion and landslide, agrochemical and waste proliferation, deforestation and forest degradation, pest infestation and biodiversity loss, methane emissions from rice paddies, grievance redress, gender inequality, social exclusion and unsafe and non-healthy working conditions.

Environmental management and monitoring plans: Several legal, institutional and regulatory frameworks were reviewed to set in context the Environmental and Social Management Framework (ESMF) for the SAPZ. The environmental, climate and social context and present challenges for the states were reviewed. Some of the mitigation and adaptation plans recommended in the ESMF include:

- Introducing risk sharing and transfer as loss mitigation measures by encouraging and assisting farmers to sign on to climate risk insurance with the National Agriculture Insurance Corporation (NAIC) and /or Nigerian Incentive-based Risk Sharing System for Agricultural Lending (NIRSAL).
- Improve collaboration with Nigerian Meteorological Agency (NIMET) to ensure production and dissemination of key agroclimatic information to farmers at regular intervals.

- As much as is possible, discourage cultivation in areas that are very close to the major river systems to minimize overflow during normal flow seasons
- Improve collaboration with research institutes to introduce early maturing/short duration and flood resistant rice varieties to the farmers to reduce flood impacts
- Support and strengthen the Seed Labs to be able to carry out rigorous tests on seeds to ensure that only genuine foundation seeds are used by farmers
- Collaborate with regulating agencies (National Agency for Food Drug Administration and Control (NAFDAC) and Standard Organization of Nigeria (SON)) to ensure that agrochemicals are genuine and in training and certification of 'spraying gangs' to eliminate agrochemical misapplication and human and environmental health
- Support Value Chain actors in conversion of rice wastes to briquettes and cassava waste to animal feeds
- Improve community security arrangements by supporting dialogue and understanding between farmers and pastoralists to reduce resource conflicts
- Avoid farming along recognized grazing routes and demarcated grazing reserves
- Support promotion of land governance and efficient land management as adaptation

Funding the Environmental and Social monitoring plans

A total of **USD1,023,000** has been estimated for the environmental and social monitoring for the **SAPZ for the 2 states of Kano and Ogun**. This represents less than about **1.023%** of IFAD's **USD 100m** commitment to SAPZ. About **USD511,500** is expected to be expended at the base year while the rest is spread across the 2nd and 7th year (end of the project life cycle).

The fund covers environmental and social monitoring plans including:

- Site specific Environmental and Social Impact Assessments (ESIA) and Environmental Screening for construction and rehabilitation of market infrastructures (including roads, processing platforms, etc.), and development of irrigation structures;
- environmental monitoring including Baseline and End term survey, biodiversity surveys; and monitoring of land, water, and soil; as well as flooding, erosion and pest infestation predictions;
- risk sharing and transfer mechanisms including agricultural insurance;
- technical support and backstopping including support for the Meteorological Agency, Seed laboratories and waste valorization
- Training including 'spraying gangs', draining of rice paddies, and construction of water harvesting structure for dry season irrigation;
- Support for conflict resolution including stakeholders' dialogue on conflict management and land governance
- Health and Safety including Health insurance for agro-entrepreneurs.

A successful mainstreaming of ESMF into implementation of the SAPZ project also requires adequate sensitization and the strengthening of institutional capacities through capacity building programmes.

The total training cost is estimated at **USD 300,000** which represents about **0.3%** of the IFAD commitment. In total, both the Environmental and Social Monitoring costs and Training cost accounts for **USD 1,323,000.00 representing 1.32%** of the IFAD commitment to the SAPZ estimated project cost.

1. INTRODUCTION

1.1 Background

Nigeria has since 2015 record modest growth in the agriculture sector aimed at addressing self-sufficiency in food production and position agriculture as a business. Nigeria is predominantly a rural economy, with 48.8% of the population living in rural areas[1], most of whom are smallholder farmers[2]. Agriculture accounts for about 23% of the GDP (compared to 50% for services and 10% for the oil sector)[3]. Smallholder agriculture is prevalent in Nigeria: Farmers who cultivate less than 2 ha of land make up more than 70% of the total farming population and produce up to 90% of the total national output.

According to the African Development Bank, the Nigerian economy recorded marked improvement in 2017 with growth of 0.9%, up from - 1.6% in 2016. The improved performance was attributed to fiscal injections from the implementation of the Economic Recovery and Growth Plan (ERGP) 2017-2020 aimed at preserving social gains, as well as an increase in oil and gas production. Although the service sector dominates and accounts for about 60% of real GDP in Nigeria, the agriculture sector accounts for about 21% and contributed the most to growth in 2017, expanding by 3.5% in 2017[4]. The ERGP document[5] noted that investments in Agriculture can guarantee food security, have the potential to be a major contributor to job creation, and will save on the foreign exchange required for food imports. However, challenges remain with 62.6% of the country's population living under the absolute poverty line[6]. Poverty is more acute in rural areas affecting 52% of the population, representing a huge challenge in terms of rural poverty alleviation. Unemployment is high, at 33.3% in 2020[7], and predominantly affects women and youth. Poverty and unemployment among youth have been further deepened by the COVID19 pandemic and the concomitant economic recession, the second in five years in November 2020. Rising prices alone may have pushed an estimated 7 million Nigerians into poverty in 2020[8] and smallholder farmers are amongst the hardest hit.

Smallholder productivity is progressively declining as a result of poor agricultural practices, over-grazing, and deforestation (estimated at 3.5% annually), exacerbated by the felling of trees for fuelwood which is the main source of power for rural and peri-urban households. The rural population also suffers from limited opportunities for alternative employment. Low education and high dependency rates are social defining factors maintaining people in poverty. According to USAID, Nigeria faces among the highest compound fragility-climate risks globally. As of 31 December 2019, Nigeria was one of the 10 countries/territories with the highest number of Internally Displaced Persons (143 000 IDPs) as a result of disasters[9].

The key priority of Nigeria's Medium-Term National Development Plan (MTNDP) 2021-2025 is agricultural transformation to eliminate poverty, spur job creation, and achieve food security. In addition, Nigeria designed the National Agricultural Technology and Innovation

[1] World Bank portal https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=NG Accessed 19th April 2021
[2] Poverty is defined as the "consumption aggregate" is the monetary value of food and non-food goods and services consumed by the household. Thus, the consumption aggregate has the following main components: i) expenditures on food, from all sources, including from purchased, self-production and gifted, and meals; (ii) schooling and education expenditures; (iii) expenditures related to health care of household members; (iv) housing expenditures; and (v) expenditures on other non -food goods and services, like clothing, small appliances, fuel, recreation, household items and repairs, etc." Source: National Bureau of Statistics, 2019. 2019 Poverty and Inequality in Nigeria: Executive Summary.
[3] AfDB, Nigeria Economic Outlook, 2019.
[4] Jacob Oduor, Audrey Verdier-Chouchane and Martin Wafula (2018): 2018 African Economic Outlook Country Note: Nigeria. www.afdb.org
[5] http://www.nationalplanning.gov.ng/images/docs/ERGP%20%20CLEAN%20COPY.pdf
[6] The definition for absolute poverty used being the cost of: (i) basic food to satisfy daily needs set at 3,000 calories per person / day; and (ii) non-food needs.
[7] National Bureau of Statistics (NBS), Nigeria, Q4 2020 Employment report: https://www.nigerianstat.gov.ng/
[8] World Bank, Nigeria Development Update: Resilience Through Reforms, June 2021
[9] State of the Climate in Africa 2019, World Meteoroidal Organization, 2020.

Plan (NATIP) 2021-2025, a four-year blueprint designed to guide Nigeria's post-COVID-19 economic recovery.

The overall **objective** of the SAPZ programme is twofold:

(i) Supporting the development of SAPZs in high food production areas to supply the domestic food market and create exportable surpluses. This includes the creation of Agro Industrial Hubs (AIH) and Agricultural Transformation Centers (ATC) through provision of support infrastructure and policy and regulatory incentives for the private sector (AfDB led); and

(ii) Empowering smallholder farmers, small agro-processors and traders, and community-based service providers, including women and youth to take advantage of the market demand created by the SAPZs to sustainably enhance their income, access to employment, and household food security and nutrition (IFAD led).

The expected **outcomes** of SAPZ are: (i) the competitiveness and business environment of the Nigerian agriculture sector is improved through the provision of hard and soft infrastructure that would allow the crowding-in of private investment into the sector; and (ii) incomes and food security of poor rural households engaged in agro-enterprises along the targeted value chains are enhanced on a sustainable basis.

1.2 Rationale and Objectives of the ESMF

Extreme weather, climate variability, and long-term climate change pose important challenges to future agriculture and food security in Nigeria. On agro-ecological sub zonal and crop type basis, Cervigni et al. (2013)[10] indicated that there will be some reductions in yield with negative implications for Nigeria's food security. Agriculture provides about 40% of Nigeria's GDP and livelihood for about 33.3 million rural poor smallholders farming households, with 95% growing mainly sorghum, maize, millet, rice, and cassava[11]. Climate change constrains rural rainfed agriculture and food production system and reduces the resilience of rural people, thereby increasing poverty, hunger, and compromising food and water security. Rainfall and temperature with their variable characteristics across space and time substantially influence agricultural vulnerability. Deforestation, woodland degradation and biodiversity loss are major issue in both Ogun and Kano State. Agriculture and grazing induced land degradation are very high in the Sudan savanna where Kano is situated. Other major ecological issues in the savanna include wind and water erosion, deforestation and vegetation degradation, declining soil fertility, flooding and dam sedimentation, drought and dry spells, pest infestations, poor agro-waste management, and environmental pollution and mining-induced land degradation and resource conflicts.

To sustain the increased growth in the agricultural sector where the nation has the natural competitive advantage, improved access to pertinent and innovative information as well as efficient and effective decision support system is much needed for proactive actions to mitigate losses – in income, livelihood, etc. - from adverse climate and weather events in the agric sector. The ERGP noted that in addition to financing, access to international market and security challenges, the agric sector faces serious threat of climate change on yield.

The SAPZ is classified as Category 1 under AfDB equivalent to Category A under IFAD in terms of Environmental and Social impact and with 'High Climate Risk. However, the states where the SAPZ activities are going to be carried out are located are fast becoming hotspots of environmental, climate and social risks and vulnerabilities. The AfDB

[10] Cervigni, R., Riccardo, V., and Monia, S, eds. 2013. *Toward Climate-Resilient Development in Nigeria*. Directions in Development. Washington, DC: World Bank.
[11] Fraym, CASP Smallholder Farmer Assessment 2020

Safeguards Category 1 will be applied

Analysis of datasets that span 1981 to 2020 (40 years) for 47 meteorological stations across the different ecological regions of Nigeria from south (where Ogun state is located) to north (where Kano is located) shows that the general trend in rainfall amount has been positive, increasing at about 8.2% annually. The observed climate indicates that temperatures over Nigeria have been rising in the last five decades and have been very significant since 1980s. The linear warming for a 30-year averages on a decadal slice reveal changes in temperature by an average of 0.2°C; and have been above normal by as much as 2°C in 1998[12] (FGN, 2014). The last decade (2011-2020) remains the warmest since 1981 with only 2012 recording below normal Tmax.

Both the RCP (Representative Concentration Pathways)[13] 4.5[14] and 8.5[15] predict a likely ***increase*** in precipitation up to the year 2070 in all the agroecological zones of Nigeria. The **Sudan savanna** (where Kano State is located) is projected to have an increase of around **10% u**nder both RCPs for the 2050-time step. While the forest zone is at less than **5%**. On average, the temperature increase is projected to vary between 1.95 to 2.31°C under the RCP 4.5 scenario increasing to the range 3.15 to 3.54°C for the RCP 8.5 across the country.

Deforestation, woodland degradation and biodiversity loss are major issue in both Ogun and Kano State. Agriculture and grazing induced land degradation is very high in the Sudan savanna where Kano is situated. Selective logging is the most important driver of deforestation and forest degradation in the forest zone and historical deforestation rate in Ogun is about -1.25% per annum between 1986 and 2016 and -5.9% between 2006 and 2016[16] which are higher than the rate for SW Nigeria and the whole country[17] .

In the past few years, Ogun state (and Kano, to some lessor extent) has become theatre of conflicts and struggle for diminishing natural resources (especially agricultural and grazing lands and water) between farmers and pastoralists, orchestrated by multiple factors, including climate change and poor land management. These have severely heightened the human insecurity, food insecurity, displacement and internal migration situations with attendant loss of investment on agriculture.

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

- Define the principles, rules, guidelines and procedures framework to develop the Environment and Social Management Framework Methodologies (ESMPs) with adequate budgets to guide the implementation team of IFAD-SAPZ
- Finalize the Environment and Social Management Framework Methodology

1.3 Approach and Methodology and Stakeholders Consultation

[12] Federal Government of Nigeria (2014): Nigeria's Second National Communication under The United Nations Framework Convention on Climate Change. The Federal Ministry of Environment of the Federal Republic of Nigeria Abuja. Retrieved from www.unfccc.int/resource/docs/natc/nganc2.pdf.

[13] Representative Concentration Pathways (**RCPs**) are four greenhouse gas concentration (not emissions) trajectories adopted by the IPCC for its fifth Assessment Report (AR5) in 2014. It supersedes Special Report on Emissions Scenarios (SRES) projections published in 2000

[14] RCP 4.5: intermediate scenario, requires that carbon dioxide (CO2) emissions start declining by approximately 2045 to reach roughly half of the levels of 2050 by 2100. Atmospheric CO2 equivalent (parts per million) at about 650ppm

[15] RCP8.5: generally taken as the basis for worst-case climate change scenarios, emissions continue to rise throughout the 21st century. The 8.5 pathway arises from little effort to reduce emissions and represents a failure to curb warming by 2100. Atmospheric CO2 equivalent (parts per million) >1370ppm

[16] Fasona, M., Adeonipekun, P.A., Agboola, O., Akintuyi, A., Bello, A., Ogundipe, O., Soneye, A., and Omojola, A. (2020): Drivers of Deforestation and Land-Use Change in Southwest Nigeria. In: W. Leal Filho (ed.), Handbook of Climate Change Resilience, Chapter 23, pp475-498. https://doi.org/10.1007/978-3-319-71025-9_139-1. Springer Nature Switzerland AG

[17] FAO (2016): State of the World's Forests 2016. Forests and Agriculture: Land-use Challenges and Opportunities. FAO, Rome. 126pages

Stakeholder consultation and community engagement are an essential component of the ESMF. Consultation is necessary for the integration of environmental and social issues into the project. Views of the project interested, and affected persons was captured in the Environmental and Social Management Framework (ESMF) and consultation is expected to be continuous throughout the life cycle of SAPZs. The ESMF consulted in Kano by both IFAD and AfDB with relevant federal and State MDAs, groups, and persons on the proposed SAPZs. Those consulted include: Mr. Abbas Suleiman, the Director Environmental Assessment of FMEnv Abuja; Mallam Lawal Jibrin, the General Manager of Kaduna State Environmental Protection Agency(KEPA), Kaduna; Mallam Jibrin Ingawa, NESREA Coordinator, Katsina state; Mallam Zubairu Ingawa secretary and Chairman of Both MACBAN and AFAN in Kano state; Mallam Musa Umar Kolgwai, the Chairman of Auyo LGA in Jigawa state; Jauro Adama, the Sarkin Fulanin Wawa-Zage grazing reserve in Dukku LGA of Gombe state and Mallam Nuhu Rabiu, a rice farmer in Bunkure LGA of Kano state. The environmental and social concerns expressed are outlined in section 2.

In Ogun state, in the preparation of the ESMF relevant stakeholders considered as entry point were met and consulted. At the meetings, discussions centered on the aims and objectives of the project, the scope of the project, design and modalities of implementation. The stakeholders were then asked to present their opinions on the impacts of the project. The results of the various consultations across the states are summarised below:

Date	State	Stakeholders	Summury of the outcomes
25/9/2020	Ogun	Farmers and regulators	In determining and designing of the Special Agro Processing Zones (SAPZs) there should be an inclusion of the relevant stakeholders' and beneficiaries' opinions of the project, especially;

This ESMF builds on the VCDP ESMF and an additional layer on the project specific ESIAs already disclosed by the AfDB. It takes into accounts both institutions Environment and Natural Resources Management Policy, the Gender Equality and Women's Empowerment, and Targeting policies

1.4 Disclosure of ESMF

IFAD's Policy on the Disclosure of Documents (2010) requires full disclosure to the public 120 days before the board, and includes information notes on projects being developed for Board presentation, agreements for approved loans and grants, and project/program design documents. The ESMFs of the SAPZ developed by the states have been disclosed on AfDB website since January 2021 and the Federal Ministry of Agriculture and Rural Development, FMARD's official website (http://fmard.gov.ng/). This ESMF will be disclosed as supplement in September 2021 .

1.5 Challenges and Assumptions

The challenges in preparing the ESMF include:

- Although IFAD is present in Ogun State through the VCDP, the locations of the SAPZ beneficiary LGAs, and the specific communities where the subprojects will take place are still not yet known. Hence, the ESMF has assessed impacts based on likely proposed projects in comparable locations. The same also applies to Kano State where IFAD currently has no presence.
- The ESMF also relies on the comparable ESMF for VCDP which covers the same agro-ecological regions as SAPZ and which adress the time limitation

to consult a large number of beneficiaries during the design process of the SAPZ.

1.6 Report Structure

Chapter 1 describes the background to SAPZ, the objectives and rationale and objectives of the ESMF, approach and methodology and challenges and assumptions for the ESMF. Chapter 2 describes the SAPZ project area and target groups, project objectives and impact indicators, implementation structure, potential partners, and environmental and social category, lesson learned on climate, environment and social risks and key issues identified for environmental and social risk. Chapter 3 reviews some of the legal, institutional and regulatory framework for ESIA and agri-business in Nigeria as well as the IFAD guidelines and how they affect the SAPZ. Chapter 4 describes in detail the environmental, climate change and social contexts of the SAPZ and summary across the states. Chapter 5 reviews in detail the potential positive and negative environmental, climate and social impacts of the project. Chapter 6 describes the Environmental and social Management Plan for SAPZ and the Stakeholder Engagement, Community Sensitization, Expectation and Grievances management mechanisms. Chapter 7 presents a review of Environmental, Climate, Social Impacts of SAPZ Sub-Projects and the Environmental and Social management Framework (ESMF) for Agricultural Value Chain Stages. Chapter 8 describes the framework for Environmental and Social Screening of Sub-Projects. Chapter 9 presents the Environmental and Social Impacts monitoring plans and cost, and Chapter 10 itemizes the capacity building and training for mainstreaming the Environmental and Social Management and Monitoring Plans.

2. DESCRIPTION OF THE PROPOSED PROJECT

2.1 Project Area and Target Group

Although the phase I of Nigeria's Special Agro-industrial Processing Zones (SAPZ) will consist of 4 clusters with 16 states[18] and 340 Local Government areas (LGAs); IFAD investments and intervention will be in Kano State (in Cluster 1) and Ogun State (in Cluster 2) where VCDP is already operating. Kano State with 44 LGAs has a land area of about 20,280 and an estimated population of around 12,625,460 in 2015 with 48.5 male and 51.5[19]. The population density is about 622.6ppkm^2. One Agro-Industrial Hub (AIH) has been proposed for Kano municipality and 2 Agro-Transformation Center (ATC) proposed elsewhere around the state. IFAD-CASP has most recently entered into Kano State through the Rural Productivity Stimulus Fund (RPSF) Programme. Ogun State with 20 LGAs has a land area of about 16,400km^2. The estimated population is about 5,037,590[20] in 2015 (with 48.8% male and 51.2% female) and a population density of 307.2 persons ppkm^2. Based on the AfDB Special Agro-Industrial Processing Zones Programme Full Project Status as at March 2021 one AIH has been listed to be sited in Sagamu and one ATC also along the Sagamu axis. IFAD VCDP is currently operating in 8 of the 20 LGAs of the state.

Kano State Lies in Hydological Areas (HA) 8 and drained mainly by the Hadejia River in the Kano-Hadejia River Basin. It has several medium sized dams including the Challawa Gorge and Tiga Dam. Kano State is endowed with abundant land and water resources which are suitable for an all year-round crop production. To utilize these resources, about 17 man-made earth dams were constructed throughout the state to encourage dry season

[18] AfDB: Special Agro-Industrial Processing Zones Programme- Nigeria, Full Project Status as at MARCH 2021
[19] NBS (2020): Nigeria Living Standards Survey 2018-2019. http://nigerianstat.gov.ng/elibrary
[20] Nigerian Bureau of Statistics (NBS, 2016): Annual Abstract of Statistics 2016. http://nigerianstat.gov.ng/elibrary

farming[21]. Ogun state Lies in HA 6, and it is drained by the western littorals with Ogun (and its major tributary, Oyan), Yewa, Oshun and Shasha rivers. Oyan dam is major dam providing conjunctive water uses for urban water supply and agriculture. In addition, there are several small earthen dams around the state that provide water to support dry season farming. Thus, the project states have abundant surface and groundwater resources to be tapped. However, the peak rainfall in the river catchments across the two states often lead to massive flooding with concomitant destruction of crops (and aquaculture) especially around the river floodplains.

Deforestation, woodland degradation and biodiversity loss are major issue in both Ogun and Kano State. Agriculture and grazing induced land degradation is very high in the Sudan savanna where Kano is situated. Other major ecological issues in the savanna include wind and water erosion, deforestation and vegetation degradation, declining soil fertility, flooding and dam sedimentation, drought and dry spells, pest infestations, poor agro-waste management, and environmental pollution and mining-induced land degradation and resource conflicts.

Selective logging is the most important driver of deforestation and forest degradation in the forest zone[22]. Ogun State's economy significantly depends on revenue from forest and forest resources. The state has about 10 gazetted forest reserves with a total area of about 2,600km^2 or 16% of the state[23]. Historical deforestation rate in Ogun is about -1.25% per annum between 1986 and 2016 which is higher than -1.1% for SW Nigeria. The gain recorded from 1986 to 2006 when the forest increased at about 2.6% per annum was totally eroded in the ten year period between 2006 and 2016 when deforestation occurred at about -5.9% per annum. This is higher than the -4.7% reported for SW Nigeria[24] and 5% for Nigeria reported by FAO in 2016[25] .

2.2 Basic Facts about the project area

The States where IFAD will be intervening in the SAPZ Project are Kano and Ogun. Table 1 presents some basic facts about the two states.

Table 2.1: Basic facts about Ogun and Kano States

Proposed SAPZ Cluster [a]	States[a]	Land area	Population (projected 2011-2015)[b]	No of LGA	Population density[b]	Male Population (%)[c]	Female population (%)[c]	Unemployment rate (Q4:2020) in Percent[d]	Underemployment rate (Q4:2020 in Percent)[d]	Poverty Headcount[d]	Gini Coefficient
1	Kano	20,280	12,625,460	44	622.5572	48.5	51.5	25.36	31.2	55.08	28.64
2	Ogun	16,400	5,037,590	20	307.1701	48.8	51.2	16.36	9.87	9.32	27.1

[a] AfDB: Special Agro-Industrial Processing Zones Programme- Nigeria, Full Project Status as at MARCH 2021

[21] Ministry Of Agriculture and Natural Resources, Kano State. Proposals for Kano State Participation In The IFAD-CASP Programme. December 2020

[22] Fasona, M., Adeonipekun, P.A., Agboola, O., Akintuyi, A., Bello, A., Ogundipe, O., Soneye, A., and Omojola, A. (2020): Drivers of Deforestation and Land-Use Change in Southwest Nigeria. In: W. Leal Filho (ed.), Handbook of Climate Change Resilience, Chapter 23, pp475-498. https://doi.org/10.1007/978-3-319-71025-9_139-1. Springer Nature Switzerland AG

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[25] FAO (2016): State of the World's Forests 2016. Forests and Agriculture: Land-use Challenges and Opportunities. FAO, Rome. 126pages

[b]Nigerian Bureau of Statistics (NBS, 2016): Annual Abstract of Statistics 2016. http://nigerianstat.gov.ng/elibrary
[c] NBS (2020): Nigeria Living Standards Survey 2018-2019. http://nigerianstat.gov.ng/elibrary
[d] NBS (2021): Q4: 2020 Unemployment Report http://nigerianstat.gov.ng/elibrary

Kano State:

Demographics and Socio-economics: Kano state is located in the northwest geopolitical zone. It has a land area of about 20,280km^2 with a population of about 13million[26] dominated by female (51.5%)[27] and a population density of 622.6ppkm^2. Kano State consists of 44 LGAs. Unemployment rate as at fourth quarter of 2020 (Q4:2020) is 25.36%, and 31.2% under-employment, and 55.08 poverty headcount[28]. The Gini-coefficient of inequality is 28.64.

Kano State has the largest concentration of industries in northern Nigeria spanning food processing, textile, tanning, footwear, cosmetics, plastics, enamelware, pharmaceuticals, ceramics, furniture and agro processing and agricultural produce trading and services. It also has 60% of its population engaged in agriculture and agro-related activities by about 1,620,000 farm families[29].

Ecology and Land-use*:* Kano is located in the Sudan savanna ecological zone. The vegetation of the Sudan savanna consists of short grasses, about 1-2 m high, and some stunted trees. The major trees found include the acacia, ron palm, borassius palm, the silk cotton and the baobab. Although current land-use and land-cover maps for Kano State was not available, reference documents suggest that about 17,420km^2 representing 84.7% of the land was devoted to agriculture in 1995. Woodland/Shrub/Grassland mainly for grazing covered about 1258.3km^2 (6.1%), and bare surfaces with 830.7km^2. Water 437.2km^2, wetlands 392.65km^2, urban area 189.9km^2, and forest 39.6km^2[30] are other land-cover categories.

Kano State has in recent times taken some steps towards land governance and tenure reform to guarantee security of tenure to the majority of rural small-holders. Pilot implementation of the systematic land titling and registration (SLTR) was carried out in Fagge (urban) and Ungongo (rural) LGAs under the initiative of the Presidential Technical Committee on Land Reform. During the exercise 5,491 parcels were demarcated and certificate of occupancy (C of O) issued with cost fixed at N5,000 for residential property[31]. The SLTR in Kano which received additional financial assistance from the EU and DFID was extended by the Kano State Government to Dala and Tarauni LGAs. Currently, Kano has captured 150,014 properties in four LGAs, with 37,468 parcels undergone the necessary public display and C of O ready for collection[32].

Agriculture and Agric value chain. Kano State has enormous surface and groundwater potentials that favour the growth of cash and food crops including Rice, Tomato, Soybeans, Cotton, Wheat, Sorghum, Millet, Maize, Cowpea, Sugarcane, and others. The state has about 1,754,200 ha of arable land with 86,500ha of inland wetlands (Fadama), 72,367ha of forest reserves, and 982,600 ha of inland waters[33]. With water impoundment in 17 dams sufficient to irrigate up to 400,000 ha[34], the State has the highest number of dams and

[26] Nigerian Bureau of Statistics (NBS, 2016): Annual Abstract of Statistics 2016. http://nigerianstat.gov.ng/elibrary
[27] NBS (2020): Nigeria Living Standards Survey 2018-2019. http://nigerianstat.gov.ng/elibrary
[28] NBS (2021): Q4: 2020 Unemployment Report http://nigerianstat.gov.ng/elibrary
[29] Kano State: SAPZ Concept Note
[30] State of the Nigerian environment Report, SEDEC Associates for Federal Minstry of Environmnet/UNDP), 2008
[31] Adeniyi P.O (2015): Challenges of Land Governance and Land Rfeorm in Nigeria. Lagos Journal of Geoinfrmation Sciences. Vol 3 (2015). Pp5-26.
[32] Adeniyi P.O (2020): Land reform: A catalyst for Inclusive Growth and Development in Lagos State: In Akinyele et al. Land and Developmnet in Lagos. University of Lagos Press. Pp317-352.
[33] Ministry of Agriculture and Natural Resources, Kano State. Proposals for Kano State Participation in The IFAD-CASP Programme. December 2020
[34] Ministry of Agriculture and Natural Resources, Kano State. Proposals for Kano State Participation in The IFAD-CASP Programme. December 2020

irrigation infrastructure in Nigeria with enormous potentials for the production of food and cash crops, fish, poultry and livestock as well as industrial raw materials. Estimate suggests the state produces about 2.8 million tons of rice annually from wet and dry seasons farming. The state also has potential for wheat production with lots of small-holder men and women wheat farmers. However, productivity for crops is low due to use of unimproved seeds, low farm size holding and climate change induced factors including drought and floods.

Dawanau and Sabon Gari markets in Kano are the largest food staple and consumer goods markets in northern Nigeria. Kano State also has the largest concentration of agro processors concentrated around Bompai, Sharada, Challawa andTokarawa industrial layouts. The state has hugely developed commodity associations with over 14,000 farmer groups and 20 commodity associations under the auspices of the All Farmers' Association of Nigeria[35].

SAPZ Clusters and IFAD's Targeting: The identified VC crops for the SAPZ cluster 1 include Rice, Tomatoes, Maize and Livestock. One AIH is proposed for Kano City and two ATC proposed for elsewhere around the state in addition to the ACs. IFAD has most recently gained a foothold in Kano State through the RPSF for the CASP Project. The Kano State proposals for participation in CASP identified 18 (of the 44 LGAs) across the 5 emirates to benefit from participation. These LGAs are: Gezawa, Ajingi, Dawakin Kudu and Albasu (in Gaya Emirate); Bebeji, Sumaila, Takai and Kibiya (in Rano Emirate); Rogo, Gwarzo, Kabo and Bebeji (in Karaye Emirate); Tsanyawa, Bichi, Dawakin Tofa and Kunchi (in Bichi Emirate); and Ungongo and Kumbotso (in Kano Emirate)[36]. Each LGA will have three (3) Community Development Associations (CDAs).

Ogun State:

Demographics and Socioeconomics: Ogun state has a land area of about 16,400km^2 with estimated population of a little above 5million[37] with more females (51.2%) than males (51.2%)[38] and population density of 307ppkm^2. The state has 20 LGAs. The unemployment rate in the fourth quarter of 2020 (Q4:2020) was 16.36, underemployment was 9.87% and the poverty headcount was 9.32[39]; these are well below the national average, making Ogun State one of the most prosperous and livable states in Nigeria. The Gini Coefficient of inequality is 27.1. Ogun state is an industrial, financial, service and agricultural powerhouse taking advantage of the fluid administrative boundary and shared prosperity offered by the close proximity and market advantage of the huge population of the Lagos conurbation. About 48% of the continuously built-up land in the Lagos megacity agglomeration is in Ogun state[40]. The State parades an array of brown fields and potential anchor investors that are already operating in the state especially around the Agbara, Ota, Abeokuta, Ijebu Ode and Mowe-Interchange Flowergate industrial clusters. It is also located in close proximity to number of existing facilities including Class A road networks, Rail-line, Airports, Seaports, Free Trade Zone, Power Plants, Dams, etc. The state has a direct road access to the huge West Africa market which will come in handy through the African Continental Free Trade Area (ACFTA).

[35] Kano State: SAPZ Concept NOte
[36] Ministry of Agriculture and Natural Resources, Kano State. Proposals for Kano State Participation in The IFAD-CASP Programme. December 2020
[37] Nigerian Bureau of Statistics (NBS, 2016): Annual Abstract of Statistics 2016. http://nigerianstat.gov.ng/elibrary
[38] NBS (2020): Nigeria Living Standards Survey 2018-2019. http://nigerianstat.gov.ng/elibrary
[39] NBS (2021): Q4: 2020 Unemployment Report http://nigerianstat.gov.ng/elibrary
[40] Mayowa Fasona, Ajobade Ariori and Akinlabi Akintuyi (2020): The challenge of urban evolution and land management in developing countries: Some lessos from the cty of Lagos. In Akinyele et al. Land and Development in Lagos. University of Lagos Press. Pp482-508.

Ecology and Land-use: Although Ogun state is located within the forest belt of Nigeria, almost half of the state consists of savanna woodlands. The ecology consists mainly of forest, agricultural land and savanna woodland. Forestland accounts for 20% in 2016. Agricultural land consisting of scattered cultivation interspersed with fallow and intensive arable cultivation accounts for 28%, Savanna woodland 16%, and urban lands account for 5.5% in 2016. Ogun State's economy significantly depends on revenue from forest and forest resources. The state has about 10 gazetted forest reserves with a total area of about 2600km^2 (16% of the state). Teak and Gmelina mono plantation has become the most popular means of reforestation, accounting for about 22.5% of the land-cover in 2016. Despite reforestation efforts, historical deforestation in Ogun State is about -1.25% per annum between 1986 and 2016 (higher than -1.1% for SW Nigeria) and -5.9% per annum from 2006-2016 (higher than -4.7% for SW Nigeria)[41].

Ogun State has a Land Bureau that has set up a Geographic Information System (GIS) Office to drive spatially enabled land administration in order to fast-track land titling and registration in compliance with the Governor's executive order to fast-track C of O process and issuance to 25 days[42].

Agriculture and Agric value chain*:*
Ogun State currently has about 283,018ha, 369,793ha, and 120,000 of land under cassava, rice and vegetable cultivation respectively as shown on Fig 1**[43]. There is an ambitious plan to significantly increase future area under cultivation of these crops and value chain products in the next 4 years as the SAPZ project come on-stream.

According to the Honorable Commissioner for Agric[44], Ogun State has about 1.2 million Ha of arable land, 70% of which is available for Agriculture. About 64,825 farmers have been registered across the state for value chain commodities including cassava (30,628), Poultry (10,434), Fisheries/aquaculture (7,096), Maize (5,818) and Rice (3,479) among others. Even without the SAPZ, there is already a huge gap between demand (by offtakers) and production/supply of these VC crops which makes expansion economically feasible. Cassava is the prime value chain crop in the state (and IFAD-VCDP's major supported crop in the state). 90% of Ogun State's farming population grow cassava, 18% of National Production (of about 7.28 Million tonnes) is produced in Ogun State and about 250,000 cassava farmers are found across the 20 LGAs of the State. The state also produces about 37.05% of the poultry in Nigeria with over 150,000 poultry farmers across the state. There is a significant number of large agric products off-takers operating in the state. In 2020, the State Government cleared 2,500ha of land across the state to support

Commodity	Area Under Cultivation (Ha)	Production Volume (Tonnes per Year)	No of Smallholder Farmers	No of Commercial Farmers	Future (4yrs) Production Potential (Ha)
Wood	52,123.60	677,607.00	N/A	15	208,494.40
Cassava	283,018.00	4,809,880.48	707,545	8,988	353,772.50
Rice	369,793.00	496,949.00	616,322	7,668	13,419.15
Vegetables and Spices	120,000.00 (Approx.)	1,560,000.00 (Approx.)	1,200,000	6,960	150,000.00
Poultry	N/A	4,829,480.00 birds/year 180,000MT (eggs)	482,945	2783	10,624,856 birds/year
Aquaculture	N/A	35,486.00	78,857	2604	141,944.00 tonnes/year
Cattle	N/A	697,631	3,500	07	7,800MT/yr

Land area and production of Value chain production activities in Ogun State (source: Ogun State Feasibility Report for SAPZ. Inception Report, September 2020.

[41] Mayowa J. Fasona . Akinlabi O. Akintuyi . Peter A. Adeonipekun . Tamarabrakemi M. Akoso . Samuel K. Udofia . Oludare O. Agboola . Gbenga E. Ogunsanwo . Ajibade N. Ariori . Ademola S. Omojola . Alabi S. Soneye . and Oluwatoyin T. Ogundipe (2020): Recent trends in land-use and cover change and deforestation in south–west Nigeria. GeoJournal https://doi.org/10.1007/s10708-020-10318-w. Springer.
[42] Presentation at the Technical Meeting with African Development Bank on Special Agro-Industrial Processing Zone In Ogun State by Ade Odedina, Honourable Commissioner for Agric, Ogun State, 16th September 2020.
[43] Ogun State Government: Feasibility Study for special Agro-Industrial Processing Zones Development in Ogun State (Ogun SAPZ). Inception Report, September 2020.
[44] Presentation at the Technical Meeting with African Development Bank on Special Agro-Industrial Processing Zone In Ogun State by Ade Odedina, Honourable Commissioner for Agric, Ogun State, 16th September 2020.

2,500 youth without land for cassava production. Planting Materials (including Cassava stem cuttings, Maize seeds, and Cashew and Cocoa seedlings) were also distributed to over 40,000 Smallholder Farmers as part of the post COVID-19 palliatives. The constraints to agricultural value chain in Ogun State include: low productivity, high on-farm and post-harvest losses, poor mechanization, lack of industrialization and value additions, lack of inclusiveness and coordination in value chain opportunities, and environmental and social constraints including climate change and resource conflicts.

SAPZ Clusters and IFAD's Targeting: The identified VC crops for the SAPZ cluster 1 include Industrial Cassava, Rice, Cocoa, Oil Palm and Aquaculture. All the 20 LGAs of Ogun state have comparative production advantage in Cassava, Rice and Aquaculture. The AIH is prosed for the area around the Lagos-Ibadan and Sagamu-Benin Interchange in Sagamu LGA. One ATC is also proposed for along the Sagamu axis. IFAD-VCDP is already intervening in the following 8 LGAs: Obafemi Owode, Yewa North, Ijebu North East, Ifo, Ijebu East, Yewa South, Odeda and Odogbolu. Obafemi Owode and Odogbolu LGAs are close to the proposed AIH location.
The 12 remaining LGAs to be considered for expansion include: Abeokuta North, Abeokuta South, Ota, Ewekoro, Ijebu North, Ijebu Ode, Ikenne, Imeko Afon, Ipokia, Ogun Waterside, Remo North and Sagamu

Target Value chain crops: Through market studies conducted during the appraisal stage, the following value chains are pre-identified for SAPZ support: **Ogun State – Cassava, rice, poultry and fishery**; and **Kano State: Rice, tomatoes, groundnuts and sesame**. These commodities are prioritized given their potential for import substitution, export prospects through value addition and potential for income and employment generation for smallholders, women and youth.

2.3 Goal, Objectives and Impact indicators

Project Development Objective: The overall **objective** of the SAPZ programme is three fold:

(i) Support the structural transformation of the Nigerian economy through agro-industrialization,
(ii) Support the development of Special Agro Processing Zones in high food production areas to supply the domestic food market and create exportable surpluses,
(iii) Capacitate smallholder farmers, small agro-processors and traders, and community-based service providers, including women and youth, to take advantage of the market demand created by the SAPZ to sustainably enhance their income and household food security

Outcomes: The expected **outcomes** of SAPZ are: (i) the competitiveness and business environment of the Nigerian agriculture sector is improved through the provision of hard and soft infrastructure that would allow the crowding-in of private investment into the sector; and (ii) incomes and food security of poor rural households engaged in agro-enterprises along the targeted value chains are enhanced on a sustainable basis.

Programme Components: To achieve its objectives, the SAPZ programme is organized around three operational components:

1. Infrastructure Development and Management for Agro-Industrial Hubs (AfDB led);
2. Agricultural Productivity, Production, Market Linkages and Value Addition in SAPZ Catchment Areas (IFAD-led);
3. Policy and Institutional Development Support

The programme's objective of **Component 1** is to support the FGN in developing and setting up SAPZs in high potential states. Each SAPZ will comprise an Agro Industrial Hub (AIH) and a number of Agricultural Transformation Centers (ATCs), strategically located within the production area to serve as aggregation points at community-level to supply the AIHs or local purchase for distribution and retail to consumers. AIH will be set up as well-defined, centrally managed tract of land developed, subdivided and dedicated to supporting firms and other stakeholders engaged in agro-processing and related activities located throughout the production area surrounding the hub.

The programme's objective of **Component 2** include (i) support smallholder farmers and small operators increase their productivity/production and capacity to add value to raw materials on a profitable and environmentally sustainable basis; and (ii) link them to the additional market outlets offered by the AIHs, off-takers supplying the local and national market who operate in the target area, and small processors/traders supplying the local markets, including primary processors operating in the ATCs. To this end, activities will be organized around three sub-components: (i) agricultural market linkages and value addition; (ii) smallholder productivity/production enhancement; and (ii) access to finance and financial inclusion. Using the implementation approach described above, IFAD will support target groups in Ogun and Kano while AfDB and state governments will do so in FCT, Kaduna, Oyo, Kwara, Imo and Cross River.

The programme's objective of **Component 3 include** (i) support the development of enabling policies and regulatory frameworks for Agro-Industrial Zones, (ii) Facilitate local policy dialogue for conducive and inclusive market linkages, (iii) strengthen quality control, grading and standardization systems, (iv) Establish and strengthen conflict management mechanisms.

Expected Outcomes: The SAPZ programme will leverage the innovative VCDP experience of leveraging geo-spatial technology and innovative data analysis tools to measure transformative changes in target groups' livelihoods. Some of the **core outcome** indicators that will be tracked include:

- Increased yield (by crop type.)
- Increased value of commodities produced through contract farming
- Percentage of supported rural enterprises reporting an increase in profit (IFAD CI 2.2.2)
- Percentage of persons/households reporting improved physical access to markets, processing and storage facilities (IFAD CI 2.2.6
- Percentage of households reporting adoption of environmentally sustainable and climate resilient technologies and practices (IFAD CI 3.2.2)
- Persons with new jobs/employment opportunities in Ogun and Kano (IFAD C1 2.2.1)
- Percentage of persons reporting an increase in production (IFAD CI 1.2.4) (gender, age and crop disaggregated)
- Percentage of persons reporting using rural financial services (IFAD CI 1.2.5)
- Percentage of supported rural producers' organization members reporting new or improved services provided by their organization (IFAD CI 2.2.4)
- Percentage increase in yields for commodities produced by targeted smallholder farmers (in Ogun and Kano)
- Number of existing/new laws, regulations, policies or strategies, proposed to policy makers for approval, ratification or amendment.

2.4 Project implementation structure

The Federal Ministry of Agriculture and Rural Development (FMARD), through the National Programme for Agriculture and Food Security (NPAFS), will continue to have the overall responsibility for programme implementation. The programme will receive oversight and guidance from the Programme Steering Committee (PSC). At the State level, there will be a State Steering Committee (SSC). The National Programme Management Unit (NPMU) will continue to manage the implementation of activities and provide technical support to and undertake coordination of programme activities undertaken in each State. The day-to-day implementation of the programme at the state level will be the responsibility of the State Programme Management Unit (SPMU). The beneficiaries will continue to be responsible for the identification, preparation and execution of their value chain development plan which will include a simple investment plan that would show the total cost from which the level of support from the programme will be determined.

2.5 Other potential partnerships and co-financing plan

The SAPZ project is co-financed the AfDB, Islamic Development Bank, AGTF, GCF/IGREENFIN, contributions from the Federal and State Governments as well as beneficiaries contributions. The co-financing basket is as shown below:

Inputs	USD (Million)
Total Program (Phase I) Cost:	541.21
ADB Loan:	160.00
IsDB Loan:	150.00
IFAD Loan:	100.00
AGTF Loan:	50.00
GCF/IGREENFIN II (Tentative)	60.00
Beneficiary Contribution	2.8
FGN & States:	18.33

2.6 Lesson Learned on Social, Environment and Climate Risk

Climate and Environment: VCDP and CASP experience shows that partnership with national weather agency for climate information works. SAPZ will partner with the crop index insurance companies and national meteorological agency to guide against crop failure arising from weather uncertainty/climate change including flooding. It will also ensure that market infrastructure is climate smart. The use of climate resilient planting materials and environmental sustainability initiatives will be promoted.

Resource Conflicts: The rising farmers and herdsmen conflict for land resources is increasing risk of production. The SAPZ will provide resources to study and analyze the features of the conflict to proffer solution. It will facilitate government engagement with key partners including the farmers, herders and other actors to, among others encourage farmers to fence their farms and discourage planting along cattle routes.

Gender mainstreaming: SAPZ will ensure that VCDP continue to apply the Gender Action Learning System (GALS) to provide a community-led empowerment methodology that strengthens communication and win-win collaboration between vulnerable and more powerful value chain actors and scale-up the VCDP initiative of targeting women's only groups to create balance in gender involvement.

Enhance youth in agriculture: The SAPZ will help scale-up the youth-in-agriculture model and create decent job opportunities for the rural youth and continue to earmark a percentage of the matching grants to stimulate youth participation (both female and male) in entrepreneurial activities for the VCs.

Nutrition: In line with the dietary objectives of the National Agricultural Promotion Policy, the IFAD Nigeria country Programme received, through a regional grant, technical assistance to carry out activities to mainstream nutrition along the different stages of selected value chains. These include sensitization and change communication campaigns including on nutritional value of different crops; bio-fortification, aflatoxin control for production of safe foods, post-harvest, safe use of chemicals, labor-saving processing for women, etc.

2.7Key issues identified on social and environmental management

The ESMF risks focus mainly from: farm production and agro-processing, market infrastructure, water supply and irrigation development, and market infrastructure.

Some specific risks identified during the design mission and in the VCDP ESMF targets include:

- climate shocks -including flood and drought
- deforestation and excessive reliance on fuel wood and charcoal
- security and conflicts - including communal clashes, farmers-herdsmen conflicts, and armed robbery, banditry and kidnapping;
- inadequate participation of women especially in leadership positions in VCs
- farmers unwillingness to participate in the learning workshops;
- inadequate adoption of improved agricultural practices;
- market infrastructure - access impeded by poor roads;
- Hijacks - elite hijacks of project infrastructure; pressure from the government and/or local elites on the PMU/SPMU to locate roads to non-VC linked or priority areas
- Exclusions - Unemployed youth group and poor women unable to contribute matching grants;
- Grievances - intra-group disputes
- Others - theft/ pilfering, fire outbreak

The major identified environmental risks/impacts include:

- Market infrastructure construction - noise and vibrations, surface and ground water quality including rivers siltation , occupational hazard and safety, traffic, damage to infrastructure
- Production - degradation of arable lands, biodiversity loss, visual effects, waste management, soil erosion and flooding vulnerability and landscape change.
- Social – displacement, isolation of settlements, seasonal migration/influx, gender inequality, damage to physical cultural resources (PCR).

2.8 Environmental and Social category

The potential environmental and social risks posed by the SAPZ project are limited and constrained to farm production (including land development and fertilizers and agrochemical usage) and agro-processing facilities (including effluent, odours, waste, pollution, noise, etc.) construction of market infrastructure including market connected feeder road rehabilitation, small dam (less than 15m) construction, small scale irrigation and drainage infrastructure development and water supply systems including borehole construction and water pipeline routing. Most of these impacts could be readily remedied and or considerably reduced with appropriate mitigation plans. SAPZ may have severe negative impacts such as the involuntary taking or restriction on the use of land resulting

in physical or economic displacement because of the activities or sites of historic, religious or cultural significance under AfDB around the agro-processing zones.

The project is classified **Category 1** under AfDB equivalent to '**Category A**' under IFAD safeguards . Although no formal Environmental and Social Impact Assessment (ESIA) will be required, but further analysis of the conflict dimensions and environmental and social management plans will, however, be mainstreamed throughout project implementation. The AfDB has developed and disclosed ESIA for specific subprojects to be executed under component 1.

In terms of Climate Risk Assessment, the project is tending towards **High Risk. T**he target group of the sub-project is substantially dependent on climate-sensitive natural resources especially rainwater-fed agricultural plots, a large part of the sub-project area been subject to flooding in the most recent past; climate variability including unexpected dry spell occasioned by unpredictable rainfall and temperature can affect the sub-project impact, sustainability and return on investment. However, the project has the potential to integrate climate resilience measures without extensive additional costs through capacity building programmes in climate smart agricultural strategies and strong collaboration with extension and weather and climate monitoring agencies to receive regular agro-climatic information and use of the right/appropriate cultivars or varieties.

3. LEGAL, INSTITUTIONAL AND REGULATORY FRAMEWORK FOR ESIA AND AGRI-BUSINESS IN NIGERIA

3.1 Legal Framework

3.1.1 Constitution of the Federal Republic of Nigeria (1999)

The Constitution, as the national legal order, recognizes the importance of improving and protecting the environment and makes provision for it. Relevant sections include:
a. The 1999 constitution as amended clearly stipulates states that "The State shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria.

The State shall –
(i) protect, preserve and promote the Nigerian cultures which enhance human dignity and are consistent with the fundamental objectives as provided in this Chapter; and
(ii) Encourage development of technological and scientific studies which enhance cultural values[45]

b. Section 12, which establishes, though implied, that international treaties (including environmental treaties) ratified by the National Assembly should be implemented as law in Nigeria.
c. Section 33 and 34, which guarantee fundamental human rights to life and human dignity respectively, and have been linked to the need for a healthy and safe environment to give these rights effect.[46]

3.1.2 The Land Use Act (1978)

Subject to the provisions of this Act, all land comprised in the territory of each State in the Federation is vested in the Governor of that State and such land shall be held in trust and administered for the use and common benefit of all Nigerians. The Act also states in

[45] http://www.lawnigeria.com/CONSTITUTIONHUB/Constitution/cap2ofconstitution.html
[46] Constitution of the Federal Republic of Nigeria, LFN 1999.
http://www.lawnigeria.com/CONSTITUTIONHUB/Constitution.html

section 6 that "it shall be lawful for a Local Government in respect of land not in an urban area:

a. to grant customary rights of occupancy to any person or organization for the use of land in the Local Government areas for agricultural, residential and other purposes;
b. to grant customary right of occupancy to any person or organization for the use of land for grazing purposes and such other purposes ancillary to agricultural purposes as may be customary in the Local Government area concerned.

However, no single customary right of occupancy shall be granted in respect of an area of land in excess of 500 hectares if granted for agricultural purposes, or 5,000 hectares if granted for grazing purposes, except with the consent of the Governor."[47]

3.1.3 Environmental Impact Assessment (EIA) Act (1992)

The EIA Decree provides that all developmental projects should from the onset undertake environmental impact assessment to determine the possible environmental effects of the proposed project. Among the types of projects covered by the provisions of this law are agricultural and natural resources projects (involving 50ha) and above some of which are listed on the mandatory schedule of EIA. One of the aims of the EIA process on agricultural projects is to avoid embarking on indiscriminate activities such as uncontrolled clearing of forest, removal of top soil, indiscriminate bush burning, felling of trees etc. that might propel desertification.

An environmental impact assessment shall be required where a Federal, State or Local Government Agency Authority established by the Federal, State or Local Government Council -

3. is the proponent of the project and does any act or thing which commits the Federal, State or Local Government authority to carrying out the project in whole or, impact;
4. makes or authorizes payment or provides a guarantee for a loan or any other form of financial assistance to the proponent for the purpose of enabling the project to be carried out in whole or in part.[48]

Any person who fails to comply with the provisions of this Decree shall be guilty of an offence under this Decree and on conviction in the case of an individual to N 100,000 fine or to five years' imprisonment and in the case of a firm or corporation to a fine of not less than N50, 000 and not more than N 1,000,000.

The Mandatory Study Activities for which EIA shall be required as related to agriculture and environment include:

1. Land development schemes covering an area of 500 hectares or more to bring forest land into agricultural production
2. Development of agricultural estates covering an area of 500 hectares or more involving changes in type of agricultural use
3. Drainage of wetland, wild-life habitat or of virgin forest covering an area of 100 hectares or more.
4. Land based aquaculture projects accompanied by clearing of mangrove swamp forests covering an area of 50 hectares or more.
5. Irrigation schemes covering an area of 5,000 hectares or more.
6. Conversion of hill forest land to other land use covering an area of 50 hectares or more.

[47] Land Use Act Cap L.5, 2004, upheld by Chapter VIII, Section 315(5) of the Constitution (1999).
[48] Environmental Impact Assessment (EIA) Act (1992), Section 13. http://www.lawnigeria.com/Federationlaws-ALL.html

7. Conversion of mangrove swamps for industrial, housing or agricultural use covering an area of 50 hectares or more.[49]

3.1.4 Water Resources Act (2004)

The Water Resources Act is targeted at developing and improving the quantity and quality of water resources. **Sections 5 and 6** provides authority to make pollution prevention plans and regulations for the protection of fisheries, flora and fauna. [50]

3.2 Institutional Framework

3.2.1 The Federal Ministry of Environment[51]

The Mission of the Federal Ministry of Environment is to ensure environmental protection, natural resources conservation and sustainable development in Nigeria. The ministry has the mandate to secure a quality environment conducive to good health and well-being of fauna and flora; promote sustainable use of natural resources; restore and maintain the ecosystem, ecological process and preserve biodiversity; raise public awareness and promote understanding of linkages of the environment; and cooperate with relevant Ministries/ Departments/ Agencies, the private sector, NGOs, and international organizations on environmental matters.

The main function of the Ministry revolves around the following environmental areas of policy awareness, enforcement and intervention:

a. desertification and deforestation;
b. pollution and waste management;
c. climate change and clean energy;
d. flood, erosion and coastal management (shoreline protection)
e. environmental standards & regulations.

The Ministry's main focus areas are:

- reclamation and rehabilitation of degraded land;
- biodiversity conservation and eco- tourism;
- effective waste management;
- mitigating the effects of climate change;
- effective environmental governance.

The Environment Assessment (EA) Department is the department most relevant to ESIA issues. The EA Department is divided into the Environmental Impact Assessment (EIA) Division, the Standards and Monitoring (S&M) Division and the Oil and Gas (O&G) Division.

Environmental Impact Assessment (EIA) Division

The EIA Division is charged with the mandate of implementing the provisions of the EIA Act No. 86 of 1992. The Act requires that proponents (public or private) of major development projects should subject their projects to the provisions of the EIA Act. The EIA Division is made up of three branches and their activities are as follows:

- the Planning, Policy and Registry (PPR) Branch is responsible for the registration of new projects, EIA revenue recording, co-ordination of training, workshops, conferences, seminars, EIA budget and the site verification of new projects;
- the Evaluation and Analysis Branch (EA) is responsible for EIA scoping, risk assessment and the review/evaluation of terms of references and EIA reports;

[49] Environmental Impact Assessment (EIA) Act (1992), Section 12.
[50] **Water Resources Act, CAP W2, LFN 2004.**
[51] http://www.environment.gov.ng/about.html

- the Impact Mitigation Monitoring (IMM) Branch is responsible for monitoring impact mitigation of approved projects, EIA auditing, and the post-impact assessment of projects.

Standards and Monitoring Division
This Division has three branches, including Environmental Standards and Audit, Laboratory Services and Environmental Research Studies and Ecotoxicology with the following mandate:
- development and review of national guidelines and standards for air, water and soil;
- development and review of national guidelines on environmental management systems and environmental audit;
- accreditation of environmental laboratories;
- provision of laboratory services to other technical departments within the ministry;
- review and certification of environmental audit reports of industries and corporate organizations.

Oil and Gas Division
The activities of the Oil and Gas Division include monitoring, evaluation and enforcement of environmental regulations in the oil and gas sector.

3.2.2 National Agricultural Land Development Authority (NALDA)

The objectives of the National Agricultural Land Development Authority (NALDA)[52] are to:
- provide strategic public support for land development which presently constitutes a major infrastructural development bottleneck hindering the development of viable economic farm holdings;
- promote and support optimum utilization of Nigeria's rural land resources for accelerated production of food and fiber;
- encourage and support economic-size farm holdings and promote consolidation of scattered fragment holdings to generate net income from agriculture which is aimed at sustaining living standards above the poverty line and thereby narrow rural-urban income inequalities;
- encourage the evolution of economic-size rural settlements that will reap the economies of scale in the provision of social infrastructures;
- provide gainful employment opportunities for rural people, raise rural incomes and improve on the general living standards in rural areas;
- expand productive capacity in agriculture and regain export capability in traditional and non-traditional crops;
- contribute significantly towards the attainment of a national food and fiber self-reliance, self-sufficiency and national food security through optimum utilization of available abundant land resources which ensures minimum soil and environmental degradation, while simultaneously promoting sustainable agriculture;
- facilitate appropriate cost-effective mechanization of agriculture; and
- institute strategic land use planning schemes to deal with major allocation problems including the creation and location of forest and grazing reserves and other areas with restricted use, and the re-location of population, should this be necessitated by localized population explosion, pressure or national disasters.

3.2.3 National Environmental Standards and Regulation Enforcement Agency (NESREA)

Administered by the Federal Ministry of Environment, the National Environmental Standards and Regulation Enforcement Agency (NESREA) Act of 2007 replaced the Federal

[52] National Agricultural Land Development Authority (NALDA) Act, CAP N4, LFN 2004.

Environmental Protection Agency (FEPA) Act.[53] It is the embodiment of laws and regulations focused on the protection and sustainable development of the environment and its natural resources.

The objectives of the Agency are to:

- enforce compliance with laws, guidelines, policies and standards on environmental matters;
- coordinate and liaise with stakeholders, within and outside Nigeria, on matters of environmental standards, regulations and enforcement;
- enforce compliance with the provisions of international agreements, protocols, conventions and treaties on the environment, including climate change, biodiversity, conservation, desertification, forestry, oil and gas, chemicals, hazardous wastes, ozone depletion, marine and wild life, pollution, sanitation and such other environmental agreements as may from time to time come into force;
- enforce compliance with policies, standards, legislation and guidelines on water quality, environmental health and sanitation, including pollution abatement;
- enforce compliance with guidelines and legislations on sustainable management of the ecosystem, biodiversity conservation and the development of Nigeria's natural resources;
- enforce compliance with any legislation on sound chemical management, safe use of pesticides and disposal of spent packages thereof;
- enforce compliance with regulations on the importation, exportation, production, distribution, storage, sale, use, handling and disposal of hazardous chemicals and waste other than in the oil and gas sector;
- enforce through compliance monitoring, the environmental regulations and standards on noise, air, land, seas, oceans and other water bodies other than in the oil and gas sector;
- ensure that environmental projects funded by donor organizations and external support agencies adhere to regulations in environmental safety and protection;
- enforce environmental control measures through registration, licensing and permitting systems other than in the oil and gas sector;
- conduct environmental audit and establish a data bank on regulatory and enforcement mechanisms of environmental standards other than in the oil and gas sector;
- create public awareness and provide environmental education on sustainable environmental management, promote private sector compliance with environmental regulations other than in the oil and gas sector and publish general scientific or other data resulting from the performance of its functions;
- carry out such activities as are necessary or expedient for the performance of its functions.

3.2.4 National Environmental (construction sector) Regulations (2011)

The purpose of these Regulations is to prevent and minimize pollution from Construction, Decommissioning and Demolition Activities to the Nigerian Environment. It states that:[54]

1. New projects in the construction sector shall apply cost-effective, up-to-date, efficient, best available technology (BAT) to minimize pollution to the barest degree practicable;
2. Any operator applying new design techniques shall evaluate the proposed installations and ensure that control measures are sufficient to prevent risks of pollution or accident;
3. Every operator or facility shall: *(a) carry* out an Environmental Impact Assessment (EIA) for new projects or modification including expansion of existing ones before

[53] **National Environmental Standards and Regulation Enforcement Agency (NESREA) Act. LFN 2007.**
[54] National Environmental (construction sector) Regulations (2011).

commencement of activity; *(b) submit* an Environmental Audit Report (EAR) of its project/ operational base on a three (3) yearly basis or as may be required by the Agency; and *(c)* submit an Environmental Management Plan (EMP) as contained in Schedule III.

3.2.5 National Environmental (Wetlands, River Banks and Lake Shores Protection) Regulations (2009)

The regulations state that the following principles shall be observed in regulating all wetlands:[55]

- wetland resources shall be utilized in a sustainable manner compatible with the continued presence of wetlands and their hydrological functions and services;
- the Environmental Impact Assessment (EIA), shall be conducted in accordance with the relevant laws on all activities in wetlands likely to have adverse effects on the wetlands;
- best practices shall be applied for the conservation of wetlands of international, national and local importance as ecological systems and habitats for fauna and flora species, cultural and aesthetic purposes, as well as their hydrological functions, etc.
- wise use of wetlands shall be incorporated into the national and local approaches for the regulation of their resources through awareness campaigns and dissemination of information.

3.2.6 National Environmental (Protection of Watershed, Mountainous, Hilly and Catchment Areas) Regulations (2009)

The regulations states that:[56]

1) Every land owner or occupier, while utilizing land in a watershed, mountainous, hilly or catchment area shall:
   a. observe and respect the carrying capacity of the land;
   b. carry out soil conservation measures;
   c. carry out measures for the protection of water catchment areas;
   d. use the best available environmentally friendly technologies to minimize significant risks and damage to ecological and landscape aspects; and
   e. maintain adequate vegetation cover.

2) The Agency shall, with respect to watersheds, mountainous, hilly and catchment areas in a particular environment, control activities which are inconsistent with good land management practices especially in areas prone to landslides, floods, drought, desertification, siltation, heavy sediment loads, falling rocks, fires and damage by wind.

3.3 Policies

3.3.1 The Agriculture Promotion Policy (2016 – 2020)[57]

The Agriculture Promotion policy makes specific reference to social and environmental issues in agricultural development. Under the Productivity Enhancements theme, the policy refers to issues such as access to land and land management, soil fertility, pest and disease, youth and women, and climate smart agriculture.

[55] National Environmental (Wetlands, River Banks and Lake Shores Protection) Regulations (2009).
[56] National Environmental (Protection of Watershed, Mountainous, Hilly and Catchment Areas) Regulations (2009).
[57] http://fmard.gov.ng/publications/downloads/green-alternative/

Under access to land and land management, the policy thrust include:

1. Facilitating the recognition and entitlement of land ownership by formal or customary means to assist collateralization;
2. Farmer/land registration (identity, location, landholding and soil mapping), and low cost, web-based and digital mechanisms for verifying the existence of such titles
3. Land rights that incentivize small farmers to invest in their land and raise their productivity;
4. Policies that reduce implicit and explicit gender biases in land allocation and titling processes
5. Policies that create a transparent, liquid market for agricultural land, improving likelihood of land being used as collateral
6. Policies that allow the farmers who are commercializing to use other land (aggregate) rental markets or land markets;
7. Policies that enable migration of farmers who have better opportunities elsewhere in the economy;
8. Policies that facilitate establishment of commercial ranches for cattle and reduces risk of clashes between nomads and farmers

For soil Fertility, the policy thrusts include:

a. soil mapping and testing
b. crop rotation to improve nitrogen fixation
c. soil fertility reconstruction and formal fallow periods
d. fertilizer quality control
e. use of organic fertilizer
f. erosion control measures e.g. tree planting
g. soil/crop specific fertilizer formulation
h. improved conservation, reforestation and green belt policies
i. review GES subsidy and align with overall fertilizer supply / demand strategy to focus efforts in regions requiring the most support

The policy thrusts for pest and disease include:

1. enhancing regulation, inspection and enforcement of safe use of agrochemicals
2. enhancing access to information about safe use of agrochemicals
3. quality assurance and testing for residues
4. promoting safe alternatives where available e.g. organic pesticides
5. integrated pest management and control mechanisms
6. facilitate inter-ministerial co-ordination for disease control

Policy thrusts for Youth and Women include:

- Develop and launch entrepreneurship platforms that create a pathway for youth and women to enter agribusiness economy
- Expand cooperation with CBN's intervention funds targeted at women and youth e.g. MSME
- Facilitate investment advisory support for potential entrepreneurs
- Review the subsisting gender policy document with a view to improving the implementation activities
- Expand training of key leaders and influencers across FMARD to ensure gender / youth considerations integrated into decision making
- Expand capacity building for women and youth for entrepreneurship, including technical training and access to financial services
- Facilitate dialogue with farmer groups and service providers (for women and youth) to expand pool of ideas FMARD can pursue to institutionalize change

Policy thrusts for Climate Smart Agriculture include:

a. Boosting public awareness through advertising of importance of climate smart agriculture
b. the management of land, water, soil and other natural resources will be improved

c. Institutional linkages and partnerships will be strengthened for ensuring climate smart agricultural governance, policies, legislations and financial mechanisms
d. Environmental impact assessment will be carried out on major agricultural projects
e. the use of renewable energy will be promoted with the involvement of private sector
f. Broad public and stakeholder awareness on Climate Smart Agriculture will be created
g. Government will facilitate soil map to improve land use and management practices
h. Government will increase the adoption of global best practices on climate change, including the aspects of adaptation, mitigation and carbon credit.

3.3.2 National Policy on the Environment (Revised 2016)[58]

The goal of the National Policy on the Environment is to "*ensure environmental protection and the conservation of natural resources for sustainable development"*. Its strategic objective is to coordinate environmental protection and natural resources conservation for sustainable development. This goal will be achieved by the following strategic objectives:

a. securing a quality of environment adequate for good health and well-being;
b. promoting sustainable use of natural resources and the restoration and maintenance of the biological diversity of ecosystems;
c. promoting an understanding of the essential linkages between the environment, social and economic development issues;
d. encouraging individual and community participation in environmental improvement initiatives;
e. raising public awareness and engendering a national culture of environmental preservation; and building partnership among all stakeholders, including government at all levels, international institutions and governments, non-governmental agencies and communities on environmental matters.

3.3.3 National Youth Policy and Strategic Plan of Action (2001)[59]

The aspects of the National Youth Policy and Strategy relevant to ESIA and agri-business include those that address gainful employment and entrepreneur development as well as the environment.

Gainful employment and entrepreneurial development: Gainful employment is one of the most important avenues through which the youth add value to the development of their country. The transition from adolescence to youth and to full adulthood will be circumscribed by the principle of creating job opportunities for them, so that they can become productive and useful adults. The provision of employment opportunities and work experience for the youth will, to large extent, lessen dispositions to crime, armed robbery, and other youth related vices in society. The Policy recognizes the societal problems associated with unemployment and under-employment.

Environment: The National Youth Development Policy is environment friendly and provides for the inculcating of the virtues of environmental preservation, protection and conservation among the youth. The aim is to encourage them to play active leadership roles in improving the environment and the ecosystem.

[58] http://www.environment.gov.ng/publications/REVISED-NATIONAL-POLICY-ON-THE-ENVIRONMENT-FINAL-DRAFT.pdf
[59] http://www.youth-policy.com/policies/Nigeria%20National%20Youth%20Policy%20&%20Plan%20of%20Action.pdf

3.3.4 National Forest Policy[60]

The overall objective of the national forest policy is to achieve sustainable forest management that would ensure sustainable increases in the economic, social and environmental benefits from forests and trees for the present and future generation including the poor and the vulnerable groups.

Non-Timber Forest Products: The concern for Non-Timber Forest Products (NTFP) in the Forestry policy is to promote the development and conservation of NTFPs in all the ecological zones for the benefits of the present and future generations and to increase NTFP's contribution to the national economy. The specific objectives are to: promote community partnership in NTFPs management; and mobilize the community for sustainable management and multiplication, packaging and marketing of NTFPs.

3.3.5 Nigerian National Environmental Action Plan (NEAP)

The NEAP which was supported by the World Bank was developed as a framework to assist in the analysis, evaluation, and discussion of the interdependence between the environment and the economy. It also seeks to provide an assessment of Nigeria's environmental priorities and an identification of options for mitigating the impact of environmental degradation. Its implementation gave rise to the World Bank assisted Environmental Management Project (EMP) and helped in strengthening Environmental Agencies at Federal and State levels. It also helped to catalyze the study on costs/benefits of biodiversity conservation, enactment of Environmental Impact Assessment (EIA) legislations and the setting up of environmental standards. The implementation of NEAP was also supported by United Nations Development Programme (UNDP) through the Environment and Natural Resources Management Programme for Nigeria in the form of capacity building and institutional strengthening of Federal and State Environmental Protection Agencies.

3.3.6 National Conservation Strategy (NCS)[61]

The NCS is to ensure strategic approach to address environmental and natural resources issues in order to guarantee sustainable benefits to the greatest number of people. The aim is to manage the ecosystems in such a way that they yield greatest sustainable benefit to present generations while maintaining the potential to meet the needs and aspirations of future generations in such a way that essential ecological processes and life support systems are maintained. The strategy focuses on the main biological resources including vegetation and forage, water, marine and fisheries, wild animals, and soil.

3.3.7 National Biodiversity Strategy and Action Plan (NBSAP)[62]

The goals and objectives are to conserve and enhance the sustainable use of the nation's biodiversity resources and to integrate biodiversity-planning considerations into national policy and decision making and the Green Agenda of the Nigeria's Vision 2010. It highlighted various measures at national, state and LGA levels as well as roles for the private sector in combating desertification and other environmental problems and mainstream sustainable developmental issues into national plans and programmes.

[60] http://www.fao.org/forestry/15148-0c4acebeb8e7e45af360ec63fcc4c1678.pdf
[61] Federal Department of Forestry (1986) *National Conservation Strategy*.
[62] https://www.cbd.int/doc/world/ng/ng-nbsap-01-en.doc

3.3.8 Nigeria's National Agenda 21[63]

In line with the Global Agenda 21, the Nigeria's Agenda 21 is premised on the fact that the country is confronted by major environmental problems among which are: deforestation, drought and desertification, soil and coastal erosion, water pollution, oil pollution, water hyacinth, loss of biodiversity, flooding, urban decay and industrial pollution. The Agenda is essentially designed to integrate environment into development. It focuses on reversing the existing environmental problems, rational use and exploitation of mineral resources, protection and management of water resources, conservation of biodiversity, sustainable human settlements, and sustainable agriculture and rural development, among others. Funding and management of environmental information, partnership among stakeholders and environmental education and awareness were also highlighted.

3.3.9 Nigerian second National Communication on Climate Change to the UNFCCC (2014)[64]

Although agriculture contributes only 2.8% of national greenhouse gas (GHG) emissions in the year 2000, the land-use, land-use change and forestry (LULUCF) sector contributes about 40% of Nigeria GHG in 2000. The net CO_2 emissions for the LULUCF sector were derived mostly (97%) from changes in forest and other woody biomass stock. Nigeria is an agrarian country, which means that a lot of interferences with vegetation and to soil carbon dynamics go on from time to time. But perhaps more importantly is that Land use is changing very rapidly in the country reflecting in extensive deforestation, de-vegetation and expansion of cultural features particularly houses. Agricultural intensification is one of the major contributors to deforestation. Gas flaring from the oil fields in the Niger Delta Region already contributes about 40% of the total emission from the energy sector and 24% of the national emission.[65]

Most of the key challenges in the agricultural sector arising from climate change are connected with water resources. The impacts include increasing crop failure/loss of yields and widespread malnutrition resulting from food shortages. Some of the adaptation strategies for the sector include: expanding and optimizing irrigation infrastructures; adopting drought-tolerant and early maturing varieties of crops; diversifying livelihoods to improve income; increasing and upgrading storage facilities for harvests; provision of efficient weather forecasting; effective pest control; use of cover crops to protect soils; stabilizing gullies and erosion sites; improving M&E of agricultural Programmes; providing agricultural insurance; enhancing agricultural extension services; providing artificial flooding downstream of large dams; adoption of short-lived hardy crop varieties; recharging wetlands and providing more irrigation water; improving rural-urban transportation; improving livestock production and promoting alternatives to animal products; adopting semi-intensive livestock keeping and mixed farming; intensification of livestock; rangelands enrichment; designating larger grazing zones; and building mutual trust between farmers and herdsmen.

3.3.10 Nigerian Agriculture and Resilience Framework (NARF)[66]

The NARF noted that agriculture is inherently an ecological enterprise that depends almost entirely on ecosystem processes and functions for its success. It is possible to build agro ecosystems that generate wealth from food and fiber and have the flows of water, nutrient and carbon matched to the hydro-geochemical cycles of this ancient continent. Agro ecological zones (AEZs) are the spatial units most relevant when considering the impact of climate variability or climate change on agriculture. The variations that occur in rainfall govern types of indigenous plants that grow, or the exotic types that can be introduced

[63] http://www.un.org/esa/agenda21/natlinfo/countr/nigeria/inst.htm
[64] unfccc.int/ressource/docs/natc/nganc2.pdf
[65] See pages 3-5 of the Second National Communication to UNFCCC document.
[66] http://hedang.org/nigeria.pdf

successfully into the country. For instance, in the humid tropical forest zone of the south, the longer rainy season support plantation crops such as cocoa, oil palm, rubber, coffee, and staple crops like, yam, cassava, cocoyam, and sweet potatoes. The knowledge of spatial variability due to climate and soil differences is fundamental at country and regional levels to plan crop choice, crop management and to forecast yield and crop requirements. Ecological buffer capacity relates to growing crops that are tolerant to the prevailing climatic conditions, adopting better agronomic practices that increase soil moisture holding capacity (e.g., conservation tillage), and soil erosion protection measures, such as terraces and bunds. Enhancing farmers' socioeconomic buffer capacities would entail increasing their livelihood assets in ways that provide them with necessary human, financial, social, physical and natural capitals by improving their access to markets, information and new technology. Improving self-organization refers to how well farmers are organized by themselves to be able to address the problems they encounter with little external help.

Nigeria's Intended Nationally Determined Contribution (2015)[67]

The Nigeria's intended nationally determined contribution (INDC) 2015 document indicates that livelihoods of Nigeria's poorest farmers are already at risk from climate change. Rising temperatures, too little rain or too much rain, thriving pests all lead to crop losses. Without access to improved seeds, fertilizer and appropriate technologies, such as irrigation systems and finance, Nigeria's food security will be at risk. Climate smart agriculture seeks to address the combined challenges of food security and climate change. Its aims are to sustainably increase agricultural productivity and support equitable increases in farm incomes, enhancing food security and development. It is also aimed at adapting and building resilience of agricultural and food security systems to climate change, thus, reducing greenhouse gas emissions from crops, livestock and fisheries. Farmers take agro-ecological measures that increase the resilience of the farming systems, as opposed to such measures that promote high external input farming, industrial meat production and large-scale industrial agriculture, which contribute to climate change.

3.3.12 Economic Recovery and Growth Plan, 2017-2020

The ERGP document[68] noted that investments in Agriculture can guarantee food security, have the potential to be a major contributor to job creation, and will save on the foreign exchange required for food imports. Successful harvests will also help to reduce inflation and promote economic diversification. ERGP focuses on the needs of the people by prioritizing food security as a critical national objective. Plans are already in place for national self-sufficiency in rice by 2018 and wheat by 2019/2020. By 2020, Nigeria is projected to become a net exporter of key agricultural products, such as rice, cashew nuts, groundnuts, cassava and vegetable oil. The ERGP also noted that in addition to financing, access to international market and security challenges, the agric sector faces serious threat of climate change on yield.

3.4. The African Development Bank (AfDB) Operational Safeguards and standards

3.4.1. Integrated Safeguards System (ISS) The E&S safeguards of the AfDB are a cornerstone of the Bank's support for inclusive economic growth and environmental sustainability in Africa. AfDB will apply the Integrated Safeguards System for all projects considered under the Program's framework. The Bank ISS is designed to promote the sustainability of project outcomes by

[67] www4.unfccc.int/.../Nigeria%20First/Approved%20Nigeria's%20INDC_271115.pdf

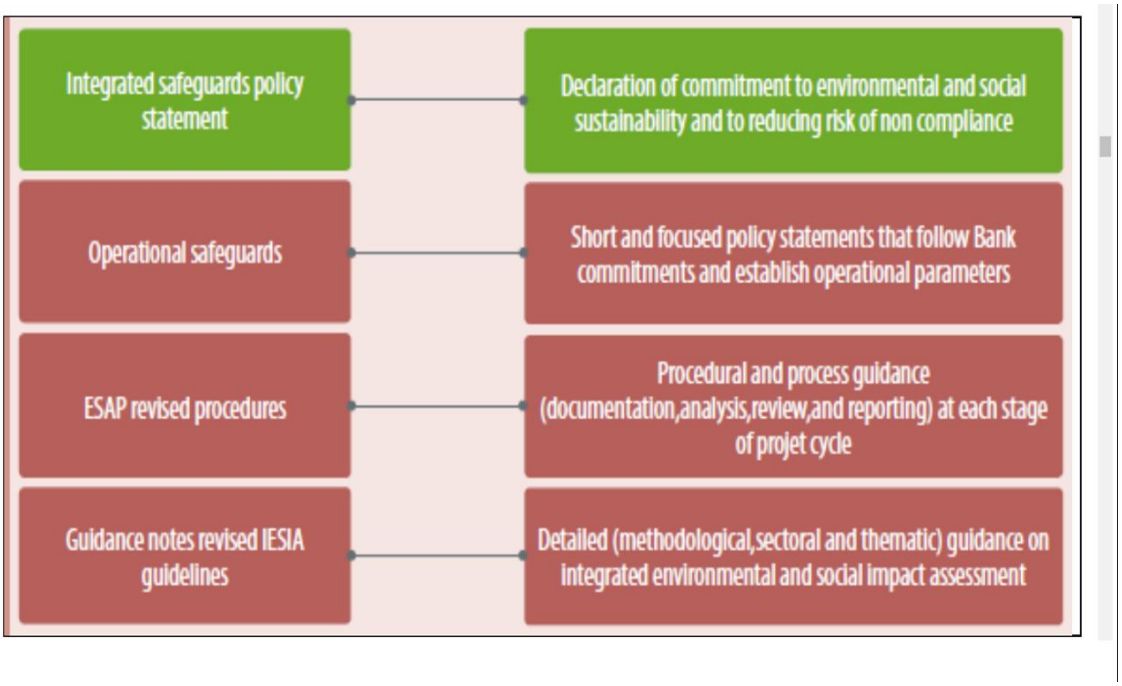
[68] http://www.nationalplanning.gov.ng/images/docs/ERGP%20%20CLEAN%20COPY.pdf

protecting the environment and people from the potentially adverse impacts of projects. This requires that all the projects will comply with these safeguards requirements of the ISS during project preparation and implementation. The safeguards aim to:

• Avoid adverse impacts of projects on the environment and affected people, while maximising potential development benefits to the extent possible;

• Minimise, mitigate, and/ or compensate for adverse impacts on the environment and affected people when avoidance is not possible; and

• Help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage E&S risks. The ISS consists of four interrelated components as summarized in the Figure below



a. **The Integrated Safeguards Policy Statement** Describes common objectives of the Bank's safeguards and lays out policy principles. It is designed to be applied to current and future lending modalities, and it takes into account the various capacities and needs of regional member countries in both the public and private sectors. The Integrated Safeguards comprises of Policy Statement that sets out the basic tenets that guide and underpin the Bank's approach to environmental safeguards. The Bank's Integrated Safeguards Policy Statement sets out the Bank's own commitments to and responsibilities for delivering the ISS: to i) ensure the systematic assessment of E&S impacts and risks; ii) apply the Operational Safeguards to the entire portfolio of Bank operations; iii) support clients and countries with technical guidance and practical support in meeting the requirements; iv) implement an adaptive and proportionate approach to E&S management measures to be agreed with clients as a condition of project financing; v) ensure that clients engage in meaningful consultations with affected groups; and vi) respect and promote the protection of vulnerable groups, in a manner appropriate to the African context 4.7.3.3 Operational Safeguards (OSs) These are a set of five safeguard requirements that Bank clients are expected to meet when addressing social and environmental impacts and risks. Bank staff use due diligence, review, and supervision to ensure that,

clients comply with these requirements during project preparation and implementation. Over time the Bank may adopt additional safeguard requirements or update existing requirements to enhance effectiveness, respond to changing needs, and reflect evolving best practices. The OSs are intended to Better integrate considerations of E&S impacts into Bank operations to promote sustainability and long-term development in Africa;

- Prevent projects from adversely affecting the environment and local communities or, where prevention is not possible, minimise, mitigate and/or compensate for adverse effects and maximise development benefits;
- Systematically consider the impact of climate change on the sustainability of investment projects and the contribution of projects to global greenhouse gas emissions;
- Delineate the roles and responsibilities of the Bank and its borrowers or clients in implementing projects, achieving sustainable outcomes, and promoting local participation; and
- Assist regional member countries and borrowers/clients in strengthening their own safeguards systems and their capacity to manage E&S risks.

b. **Environmental and Social Assessment Procedures (ESAPs)** The Bank's ESAPs details the specific procedures that the Bank and its borrowers or clients should follow to ensure that Bank operations meet the requirements of the operational safeguards (OSs) at each stage of the Bank's project cycle. Its adoption and implementation enhance the E&S performance of the Bank's operations and improve project outcomes. The ESAPs will help to improve decision-making and project results by ensuring that Bank-financed operations conform to the requirements laid out in the operational safeguards (OS) and are thus sustainable. The ESAP describes how the Bank and its borrowers should work together to ensure that environmental, climate change and social considerations are integrated into the project cycle from country programming to post completion. It represents a coordination mechanism between the Bank, relevant government agencies, and private sector entities and plays an important role in building the environmental, social and climate change management capacity of the project's executing agency. The Environmental and Social Assessment procedures apply during the entire project cycle, with differentiated tasks to be performed, roles and responsibilities for the Bank and its borrowers and clients. Also, the Bank has an integrated system which will be used to ensure its E & S requirements are incorporated effectively into the whole program cycle, i.e., Integrated Safeguards Tracking System (ISTS). The ISTS constitutes an integral part of the ESAP.

c. **Integrated Environmental and Social Impact Assessment (IESIA) Guidance Notes** The IESIA Guidance Notes provide technical guidance to the Bank's borrowers or clients on standards on sector issues or on methodological approaches clients or borrowers are expected to adopt to meet OS standards. The Integrated Environmental and Social Impact Assessment (IESIA) Guidance notes provide a systematic process for addressing sub-projects' E&S impacts with a clear understanding of the specific sector characteristics. The IESIA Guidelines' major objective is to provide reference material to the staff of the Bank and RMCs on how to adequately consider crosscutting themes while assessing the E&S impacts of a sub-project. Moreover, the IESIA Guidelines can

greatly assist in the project design, as many potential adverse impacts can be avoided or mitigated by modifying or adding certain project components to the initial design. As well, improvements in the project design can enhance several beneficial impacts at a minimal cost. Therefore, the IESIA Guidelines provide guidance on how to adequately consider the Bank's priority crosscutting themes in both the preparation and assessment phases. Thus, the staff of the Bank and RMCs should refer to the IESIA Guidelines from the beginning of the project cycle to the end. The IESIA Guidance notes complement the guidance and formats provided in ESAP and provide guidance to RMCs when undertaking E&S Assessments for Bank-financed projects/programs. It will also be used by the Bank's Operational staff in reviewing and clearing these studies and in project supervision. The provision of high-quality technical guidance is key to ensuring effective compliance, capacity, and ownership of the ISS for Bank staff and borrowers alike.

d. **AfDB Project Categorisation Process**

The ESAP also includes procedural requirements such as the categorization of projects, disclosure, and monitoring of projects during implementation and operation. At the initial stage of a project cycle, a categorization exercise is undertaken to determine the project category, in accordance with the classification presented in Table below . The assigned project category typically determines the level of E & S assessments to be undertaken towards managing the E & S risks and potential impacts. A summary of the AfDB's project categorization process (detailed in the ESAP) is set out in Table. AfDB Project Categorization process

AfDB Project Category	Description
Category 1	Projects likely to cause significant E&S impacts. • Category 1 projects are likely to induce significant and/or irreversible adverse environmental and/or social impacts, or to significantly affect environmental or social components that the Bank or the borrowing country considers sensitive.
Category 2	Projects likely to cause less adverse E&S impacts than Category 1. • Category 2 projects are likely to have detrimental site-specific environmental and/or social impacts that are less adverse than those of Category 1 projects. • Likely impacts are few in number, site-specific, largely reversible, and readily minimized by applying appropriate management and mitigation measures or incorporating internationally recognized design criteria and standards
Category 3	Projects with negligible adverse E&S risks • Category 3 projects do not directly or indirectly affect the environment adversely and are unlikely to induce adverse social

	impacts. They do not require an E&S assessment. • Beyond categorization, no action is required. • Nonetheless, to design a Category 3 project properly, it may be necessary to carry out gender analyses, institutional analyses, or other studies on specific, critical social considerations to anticipate and manage unintended impacts on the affected communities.
Category FI (4)	Projects involving lending to financial intermediaries (FI). • Category FI projects involve lending to financial intermediaries that on-lend or invest in subprojects that may produce adverse E&S impacts. • FIs include banks, insurance, reinsurance and leasing companies, microfinance providers, private equity funds and investment funds that use the Bank's funds to lend or provide equity finance to their clients
Subcategory FI-A	The financial intermediary's portfolio is considered high risk, and it may include sub-projects that have potentially significant adverse environmental, climate change, or social impacts and that are equivalent to Category 1 projects.
Subcategory FI-B	The financial intermediary's portfolio is deemed to be medium risk, and may include subprojects that have potential limited adverse environmental, climate change, or social impacts and that are equivalent to Category 2 projects. Given the information available at this level, the proposed AFAWA Program is classified under this category "Subcategory FIB"
Subcategory FI-C	The financial intermediary's portfolio is considered low risk and includes sub-projects that have minimal or no adverse environmental or social impacts and that are equivalent.

3.4.2. IFAD Guidelines

a. IFAD Safeguard Policies

The IFAD'S ten Environmental and Social Values and Principles are relevant to the SAPZ project.[69] 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.

[69] https://www.ifad.org/documents/10180/a5e3ffcc-0ed7-4bc6-b523-39c25dc1edd8

- 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

b. IFAD SECAP Procedure[70]

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 SAPZ 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 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.

The results of the ESMF and States ESMF conducted by AfDB 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 (iv) Link with the agro- processing zones under AfDB. 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;

[70] https://www.ifad.org/documents/10180/a36f992c-5e31-4fac-8771-404bea02796b

- 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.

The IFAD Climate Change Strategy (2010)[71]

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:

1. To support innovative approaches to helping smallholder farmers build their resilience to climate change
2. To help smallholder farmers take advantage of available mitigation incentives and funding
3. 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-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.

c. The IFAD Environment and Natural Resource Management (ENRM, 2011) Policy[72]

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.

[71] https://www.ifad.org/topic/tags/climate_change/2154532
[72] https://www.ifad.org/topic/resource/tags/climate_change/2096936

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 Africa 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.

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.

d. IFAD Strategy and Action Plan on Environment and Climate Change 2019-2025

This 2019-2025 Environment and Climate Change Strategy consolidates and updates IFAD's strategy and policy frameworks on environment and climate change. It aligns with IFAD's Strategic Framework (2016-2025) and responds to commitments to the Eleventh Replenishment of IFAD's Resources (IFAD11). This strategy consolidates and updates IFAD's strategy and policy frameworks on environment4 and climate change5 in light of internal and global policy changes over the last several years. Its preparation was led by IFAD's Environment, Climate, Gender and Social Inclusion Division.

The consultative process involved staff, Board members and partners through interviews, a survey, workshops and meetings. The process also included benchmarking IFAD's policies and practices against those of selected organizations. The strategy's purpose is to guide IFAD in addressing environment and climate change across all its policies, strategies and operations (see figure 1 below). The strategy aims to achieve the following:

The main objective underlying this strategy is enhanced resilience of smallholder farmers and rural communities to environmental degradation and climate change impacts. This will ultimately provide the foundation for more prosperous livelihoods today and in the future. IFAD will contribute to meeting this objective through the following outcomes:

- Governments are increasingly effective in integrating environment and climate change objectives and considerations into smallholder agriculture and other rural development policies and programmes.
- IFAD has the skills, capacity, partnerships, systems and resources needed to fully support governments in integrating environment and climate change into rural development policies and programmes.

- IFAD investments contribute to the generation of environmental assets and services, and global public goods that make the livelihoods of poor rural people more prosperous and resilient, and IFAD's own operations more environmentally sustainable.
- IFAD becomes a global leader in generating knowledge on managing sustainable rural livelihoods – enabling IFAD to play a greater advocacy role in supporting global efforts to build a healthy planet

e. Country strategic opportunities programme (COSOP), Nigeria- 2016[73]

The results-based country strategic opportunities programme (COSOP) noted that a number of environmental trends threaten Nigeria's natural resources. Poor agricultural practices, the clearing of pastureland and pollution in oil-producing areas exacerbate the deterioration of the natural environment. Pressure on basic resources has increased and the carrying capacity in some ecological zones has been exceeded. These pressures have led to conflict among herders and farmers in the northern and north-central regions. Changes in rainfall and increasing temperatures drive major climate change risks. Climate change vulnerability is highest in the north-east and south-east, followed by the north-west and south-central regions. Temperatures could increase by up to 2.5° C by the 2060s. Droughts are likely to become more severe, affecting rainfed agriculture in the northern regions. Heavy rainfall events expected in the southern part of the country will likely exacerbate soil erosion.

Policies developed to address these risks – including Nigeria's Intended Nationally Determined Contribution under the United Nations Framework Convention on Climate Change and the National Agriculture Resilience Framework of 2014 – Provide some development opportunities, such as improving agricultural systems for crops and livestock, and improving resource management. IFAD's proposed approach will: (i) build beneficiary capacity to sustainably manage land and water resources; (ii) train extension officers at the state and local levels in evidence-based assessment and management of climate risks for resilience; (iii) re-vegetate degraded areas to improve livelihoods and increase productivity; and (iv) strengthen the environment and climate change unit within Federal Ministry of Agriculture and Rural Development.

[73] https://webapps.ifad.org/members/eb/119/docs/EB-2016-119-R-17.pdf

4. DESCRIPTION OF THE ENVIRONMENTAL, CLIMATE AND SOCIAL CONTEXT

4.1 Environmental Context

Th**e** savanna ecosystems where Kano State and substantial parts of Ogun State cover about 44,883,510 or 48.5 % of Nigeria's land area[74] stretching from about Latitude $7^0$45' to 14^0 North. It consists of the Sahel, Sudan, Guinea and Derived (wooded) Savanna. Ogun State is located within the Guinea Savanna and Kano in the Sudan Savanna zone.
The Guinea savanna is found in the middle belt and is the broadest vegetation zone in Nigeria. It is typified by open woodland with tall grasses and fire-resistant trees. African mahogany at one time was an indicative species of this zone. They have almost disappeared today being a favorite species for local wood products and charcoal making. Tree cover here varies between 15 to 25% in undisturbed areas. The tree cover in the derived savanna a broadband that borders the remaining forest zone where Ogun state is located is as much as 30%. Although savanna tree species are not as valuable for timber as those found in rainforests, a few species are commercially harvested. Many other trees are cut for fuel wood by residents or cleared to make room for agriculture. The commonest tree species include the false balsam Copaiba (*Daniellia oliveri*), *Terminalia*, *Lophira, Afzeila, Daniellia, Vitex,* and Khaya *senegalensis.* In the northern guinea savanna species such as *Isoberlinia doka* and *I. tomentosa* form the bulk of the scattered woodland. Also found are locust bean tree (*Parkia Biglobosa)*, *Vitaleria Paradoxa* and *Mangifera Indica*. The Guinea Savanna is especially suitable for cassava and rice cultivation. Agriculture and grazing induced land degradation is very high. Such degradation include: Wind and water erosion, deforestation and vegetation degradation, declining soil fertility, flooding and sedimentation, drought and dry spells, salinization and alkalization, biodiversity loss, pest infestations, poor agro-waste management, and environmental pollution and mining induced land degradation.

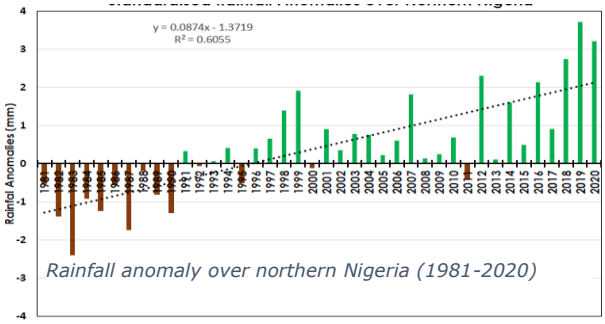
The northern Sudan savanna zone vegetation where Kano State is located consists of short grasses, about 1-2 m high, and some stunted trees. The major trees found include the acacia, ron palm, borassius palm, the silk cotton and the baobab. Further north in the Sahel region the grasses are short and tussocky, about 0.5 – 1.0 m high with Acacia as the chief tree. Vegetation in the southern wooded savanna zone consists of open woodland with tall grasses and dominant fire-resistant tree species including: *Daniella oliveri*, *Terminalia*, L*ophira, Afzeila, Vitex,* Khaya *senegalensis, Parkia biglobosa and Vitaleria paradoxa.* The forest zone consists of closed natural and semi-natural forest with dominant tree species including*: Funtumia elastica, Macaranga barterrii , Napoleona vogelli*, *Alstonia boonei*, *Diospyros dendo, Funtumia elastica, Pterocarpus, Terminalia, and Sterculia*[75] among others*.*

[74] National Biodiversity Conservation and Action Plan, 2004

[75] Mayowa J. Fasona, Akinlabi O. Akintuyi, Peter A. Adeonipekun, Tamarabrakemi M. Akoso, Samuel K. Udofia, Oludare O. Agboola, Gbenga E. Ogunsanwo, Ajibade N. Ariori, Ademola S. Omojola, Alabi S. Soneye, and Oluwatoyin T. Ogundipe (2020): Recent trends in land-use and cover change and deforestation in south–west Nigeria. GeoJournal https://doi.org/10.1007/s10708-020-10318-w. Springer

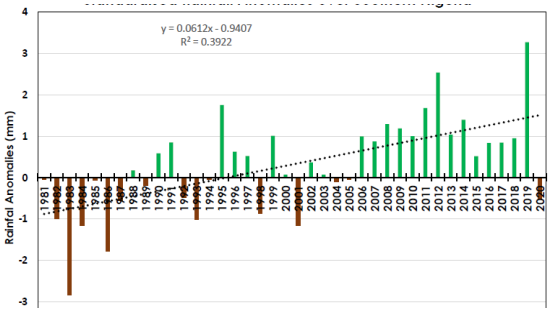
4.2 Climate Change Context

Rainfall: Nigeria experiences large spatial and temporal variations in rainfall, and much less variations in the other components of weather and climate. Nigeria's climate strides from a very wet southern coastal area with annual rainfall (received over 9 months - March to October) approaching 3,000 mm to the semi-arid northern Sahel region with annual rainfall (received over 3 months - July to September) less than 600 mm[76]. The inter-annual rainfall variability is high particularly in the northern parts resulting in climatic hazards, especially flood and drought. The relative humidity is constant throughout the year in the south, but the north experiences considerable seasonal and diurnal variations[77]. Warming trend over Nigeria is very clear. Although the signal is consistent over both northern and southern Nigeria, temperature is rising faster over the semi-arid Sudano-Sahelian northern Nigeria compared to southern Nigeria. In essence exposure to rising temperature and high sensitivity (coupled with low adaptive capacity), leading to high vulnerability to climate and environmental change is greater in northern Nigeria (where Kano State is located) than southern Nigeria (where Ogun State is located). Statistically significant negative change in rainfall has been observed[78] and increase in future occurrences of extreme climate events has been projected over Nigeria[79].



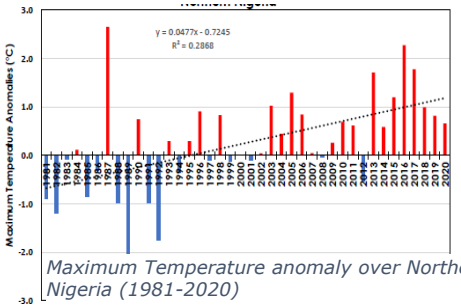
Rainfall anomaly over northern Nigeria (1981-2020)

Since the 1990s, rainfall has recovered across Nigeria. Analysis of datasets that span 1981 to 2020 for 47 meteorological stations across Nigeria shows that the general trend in rainfall amount has been positive, increasing at about 8.2% annually. The increase is higher in the north at 8.7% than south at 6.1%[80]. The standardized rainfall anomaly over Nigeria shows that the years 1981 to 1990 (except 1988) received below normal rainfall. Rainfall recovery started in 1991; and except for 1992, 1993 and 2001, the years from 1991 to 2020 received above normal rainfall. While the rainfall anomalies over northern Nigeria is consistent with the signal over Nigeria, the pattern over the southern forest zone (where Ogun state is located) was more erratic.



Rainfall anomaly over southern Nigeria (1981-2020)

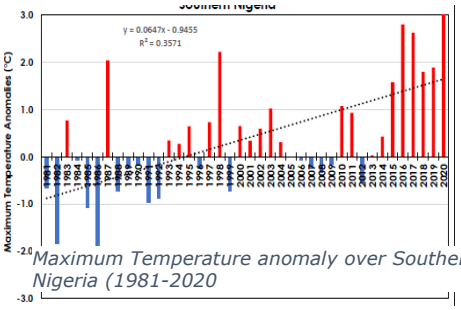
Temperature: The observed climate indicates that temperatures over Nigeria has been rising in the last five decades and has been very significant since 1980s. The linear warming for a 30-year averages on a decadal slice reveal changes in temperature by an average of 0.2°C; and has been above normal by as much as 2°C in 1998[81]. Nigeria transited from cold period to warm since 1981 with



Maximum Temperature anomaly over Northern Nigeria (1981-2020)

[76] Average rainfall in Sudan Savanna zone where Kano State is situated range between about 600-1000 mm and dry season is about 4-6 months. The forest zone where Ogun State is situated has bimodal peaks (July and September) rainfall with mean average of about 1800mm.
[77] State of the Nigerian Environment Report, 2008, SEDEC Associates for Federal Ministry of Environment and UNDP
[78] Oguntunde P. G, Abiodun B. J, and Lischeid G. (2011). Rainfall Trends in Nigeria, 1901-2000, *Journal of Hydrology*. 411:207-218.
[79] Abiodun B, Lawal K, Salami A and Abatan A, (2012): Potential Influences of Global Warming on Future Climate and Extreme Events in Nigeria. *Reg. Environ Change*. 13(3): 1-15
[80] State of Climate in Nigeria 2020, Nigerian Meteorological Agency
[81] Federal Government of Nigeria (2014): Nigeria's Second National Communication under The United Nations Framework Convention on Climate Change. The Federal Ministry of Environment of the Federal Republic of Nigeria Abuja. Retrieved from www.unfccc.int/resource/docs/natc/nganc2.pdf.

a general warming trend increasing at about 6.1% per annum. The last decade (2011-2020) remains the warmest since 1981 with only 2012 recording below normal maximum temperature. The years 2013 to 2020 have been consistently warm with positive anomalies exceeding 2SD in 2016, 2017 and 2020. The maximum temperature increase since 1981 is about 4.8% per annum for the northern savanna ecological zone and 6.5% per annum for the southern forest zone[82].



Maximum Temperature anomaly over Southern Nigeria (1981-2020

Both the RCP (Representative Concentration Pathways)[83] 4.5[84] and 8.5[85] predict a likely ***increase*** in precipitation up to the year 2070 in all the agroecological zones of Nigeria. The Sudan savanna (where Kano State is located) is projected to have an increase of around 10% under both RCPs for the 2050-time step, while the forest zone is at less than 5%. The projections follow the same trend for the 2070-time horizon, with higher increases under RCP8.5[86]**.** For temperature, under the RCP4.5 for 2050 and 2070, increase could range from a low of 1.48°C to 1.78°C to a high of 3.08°C to 3.48°C compared to the baseline. On average, the temperature increase is projected to vary between 1.95 to 2.31°C under the RCP 4.5 scenario increasing to the range 3.15 to 3.54°C for the RCP 8.5 across the country.

Climate change and environment in Ogun and Kano States: Climate change and extreme events directly affect livelihoods, food and water security, land use, agricultural marketing systems, market instability, and food prices. Droughts, floods, dry spell, heat waves, and storms lead to crop failure, destruction of livelihood assets, food riots, and migration, among others are also orchestrated by climate change that is substantially driven by unsustainable land management and practices. Analysis of datasets that span 1981 to 2020 (40 years) for 47 meteorological stations across the different ecological regions of Nigeria from south (where Ogun state is located) to north (where Kano is located) shows that the general trend in rainfall amount has been positive, increasing at about 8.2% annually. The increase is higher in the north at 8.7% than south at 6.1%[87]. The standardized rainfall anomaly over Nigeria shows that the years 1981 to 1990 (except 1988) received below normal rainfall with 1983 being the driest year during the period with negative anomalies reaching 3 standard deviation (SD). Rainfall recovery started in 1991. Except for 1992, 1993 and 2001, the years from 1991 to 2020 received above normal rainfall, with 2019 and 2012 recording positive anomalies above 2SD. While the rainfall anomalies over northern Nigeria is consistent with the signal over Nigeria, the pattern over the southern forest zone (where Ogun state is located) was more erratic.

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[82] State of Climate in Nigeria 2020, Nigerian Meteorological Agency
[83] Representative Concentration Pathways (RCPs) are four greenhouse gas concentration (not emissions) trajectories adopted by the IPCC for its fifth Assessment Report (AR5) in 2014. It supersedes Special Report on Emissions Scenarios (SRES) projections published in 2000.
[84] RCP 4.5: intermediate scenario, requires that carbon dioxide (CO2) emissions start declining by approximately 2045 to reach roughly half of the levels of 2050 by 2100. Atmospheric CO2 equivalent (parts per million) at about 650ppm
[85] RCP8.5: generally taken as the basis for worst-case climate change scenarios, emissions continue to rise throughout the 21st century. The 8.5 pathway arises from little effort to reduce emissions and represents a failure to curb warming by 2100. Atmospheric CO2 equivalent (parts per million) >1370ppm
[86] Federal Republic of Nigeria (2020): Third National Communication (TNC) of the Federal Republic of Nigeria under the United Nations Framework Convention on Climate Change (UNFCCC). Available at: https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf
[87] State of Climate in Nigeria 2020, Nigerian Meteorological Agency
[88] Federal Government of Nigeria (2014): Nigeria's Second National Communication under The United Nations Framework Convention on Climate Change. The Federal Ministry of Environment of the Federal Republic of Nigeria Abuja. Retrieved from www.unfccc.int/resource/docs/natc/nganc2.pdf.

cold period to warm since 1981 with a general warming trend increasing at about 6.1% per annum. The last decade (2011-2020) remains the warmest since 1981 with only 2012 recording below normal Tmax. The years 2013 to 2020 have been consistently warm with positive anomalies exceeding 2SD in 2016, 2017 and 2020. The maximum temperature increase since 1981 is about 4.8% per annum for the northern savanna ecological zone and 6.5% per annum for the southern forest zone.

Both the RCP (Representative Concentration Pathways)[89] 4.5[90] and 8.5[91] predict a likely ***increase*** in precipitation up to the year 2070 in all the agroecological zones of Nigeria. The **Sudan savanna** (where Kano State is located) is projected to have an increase of around **10% u**nder both RCPs for the 2050-time step. While the forest zone is at less than **5%**. The projections follow the same trend for the 2070-time horizon, with higher increases under RCP8.5[92]**.** For temperature, under the RCP4.5 for 2050 and 2070, increase could range from a low of 1.48°C to 1.78°C to a high of 3.08°C to 3.48°C compared to the baseline. On average, the temperature increase is projected to vary between 1.95 to 2.31°C under the RCP 4.5 scenario increasing to the range 3.15 to 3.54°C for the RCP 8.5 across the country.

Climate Change and Agriculture: Agriculture provides about 40% of Nigeria's GDP and livelihood for about 33.3 million rural poor smallholders farming households, with 95% growing mainly sorghum, maize, millet, rice, and cassava[93]. Climate change constrains rural rainfed agriculture and food production system and reduces the resilience of rural people, thereby increasing poverty, hunger, and compromising food and water security. Rainfall and temperature with their variable characteristics across space and time substantially influence agricultural vulnerability.

The key climate risks that constrain smallholder rainfed agricultural livelihoods include: rising temperatures, too little rain, too much rain, thriving pests leading to crop losses, and low access to improved seeds, inputs, technologies and finance[94]. There has been sharp increase in extreme heat affecting rural production, and changes to precipitation resulting in floods threatens rain-fed agricultural plots with devastating loss to rice farmers during 2020 raining season[95]. Climate change increases small-holder farmers vulnerability subjecting them to increased frequency of dry-spells and heat waves/stress, late onset and early cessation with reduced rainy days leading to shortened length of growing season, and more high intensity-short duration rains producing high storm runoff and erosion. The manifest effects of climate change on the smallholder rainfed agriculture in Nigeria include crop failure, low yield and reduced marketable surpluses, crop losses to flood, drought and dry spell, increased pests and disease activities, land and soil degradation from erosion and flooding, income losses, poverty and increased grazing distance. Pastoralists in the Sudan savanna zone often find it difficult to get water and pasture for herds especially during the dry season, leading to migration towards the southern guinea savanna and forest zones, thus creating deadly resource conflicts and heightened insecurity with crop farmers in the southern guinea savanna and forest zones. Thus, investments in reducing vulnerability and creating a resilient small holder agricultural system in Nigeria will deliver

[89] Representative Concentration Pathways (**RCPs**) are four greenhouse gas concentration (not emissions) trajectories adopted by the IPCC for its fifth Assessment Report (AR5) in 2014. It supersedes Special Report on Emissions Scenarios (SRES) projections published in 2000

[90] RCP 4.5: intermediate scenario, requires that carbon dioxide (CO2) emissions start declining by approximately 2045 to reach roughly half of the levels of 2050 by 2100. Atmospheric CO2 equivalent (parts per million) at about 650ppm

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[92] Federal Republic of Nigeria (2020): Third National Communication (TNC) of the Federal Republic of Nigeria under the United Nations Framework Convention on Climate Change (UNFCCC). Available at: https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf

[93] Fraym, CASP Smallholder Farmer Assessment 2020

[94] Federal Government of Nigeria (2015). Nigeria's Nationally Determined Contributions. Available at: www4.unfccc.int/.../Nigeria%20First/Approved%20Nigeria's%20INDC_271115.pdf.

[95] State of Climate in Nigeria 2020, Nigerian Meteorological Agency

on enhanced income and assets, reduced climate risk, improved livelihoods, reduced climate-induced resource conflicts, as well as reduced stress on the biological support systems that enhance crop production[96].

4.3 Social-economic and cultural context

The States where IFAD will be intervening in the SAPZ Project are Kano and Ogun. Table 1 presents some basic facts about the two states.

Table 1: Basic facts about Ogun and Kano States

Proposed SAPZ Cluster [a]	States[a]	Land area	Population (projected 2011-2015)[b]	No of LGA	Population density[b]	Male Population (%)[c]	Female population (%)[c]	Unemployment rate (Q4:2020) in Percent[d]	Underemployment rate (Q4:2020 in Percent)[d]	Poverty Headcount[d]	Gini Coefficient
1	Kano	20,280	12,625,460	44	622.5572	48.5	51.5	25.36	31.2	55.08	28.64
2	Ogun	16,400	5,037,590	20	307.1701	48.8	51.2	16.36	9.87	9.32	27.1

[a] AfDB: Special Agro-Industrial Processing Zones Programme- Nigeria, Full Project Status as at MARCH 2021
[b] Nigerian Bureau of Statistics (NBS, 2016): Annual Abstract of Statistics 2016. http://nigerianstat.gov.ng/elibrary
[c] NBS (2020): Nigeria Living Standards Survey 2018-2019. http://nigerianstat.gov.ng/elibrary
[d] NBS (2021): Q4: 2020 Unemployment Report http://nigerianstat.gov.ng/elibrary

Kano State:

Demographics and Socio-economics: Kano state is located in the northwest geopolitical zone. It has a land area of about 20,280km^2 with a population of about 13million[97] dominated by female (51.5%)[98] and a population density of 622.6ppkm^2. Kano State consists of 44 LGAs. Unemployment rate as at fourth quarter of 2020 (Q4:2020) is 25.36%, and 31.2% under-employment, and 55.08 poverty headcount[99]. The Gini-coefficient of inequality is 28.64.
Kano State has the largest concentration of industries in northern Nigeria spanning food processing, textile, tanning, footwear, cosmetics, plastics, enamelware, pharmaceuticals, ceramics, furniture and agro processing and agricultural produce trading and services. It also has 60% of its population engaged in agriculture and agro-related activities by about 1,620,000 farm families[100].

Dawanau and Sabon Gari markets in Kano are the largest food staple and consumer goods markets in northern Nigeria. Kano State also has the largest concentration of agro processors concentrated around Bompai, Sharada, Challawa andTokarawa industrial layouts. The state has hugely developed commodity associations with over 14,000 farmer groups and 20 commodity associations under the auspices of the All Farmers' Association of Nigeria[101].

SAPZ Clusters and IFAD's Targeting: The identified VC crops for the SAPZ cluster 1 include Rice, Tomatoes, Maize and Livestock. One AIH is proposed for Kano City and two ATC proposed for elsewhere around the state in addition to the ACs. IFAD has most recently gained a foothold in Kano State through the RPSF for the CASP Project. The Kano State proposals for participation in CASP identified 18 (of the 44 LGAs) across the 5 emirates to benefit from participation. These LGAs are: Gezawa, Ajingi, Dawakin Kudu and

[96] IFAD (2018). IFAD Strategy and Action Plan on Environment and Climate Change 2019-2025. IFAD, Rome
[97] Nigerian Bureau of Statistics (NBS, 2016): Annual Abstract of Statistics 2016. http://nigerianstat.gov.ng/elibrary
[98] NBS (2020): Nigeria Living Standards Survey 2018-2019. http://nigerianstat.gov.ng/elibrary
[99] NBS (2021): Q4: 2020 Unemployment Report http://nigerianstat.gov.ng/elibrary
[100] Kano State: SAPZ Concept Note
[101] Kano State: SAPZ Concept NOte

Albasu (in Gaya Emirate); Bebeji, Sumaila, Takai and Kibiya (in Rano Emirate); Rogo, Gwarzo, Kabo and Bebeji (in Karaye Emirate); Tsanyawa, Bichi, Dawakin Tofa and Kunchi (in Bichi Emirate); and Ungongo and Kumbotso (in Kano Emirate)[102]. Each LGA will have three (3) Community Development Associations (CDAs).

Ogun State:

Demographics and Socioeconomics: Ogun state has a land area of about 16,400km^2 with estimated population of a little above 5million[103] with more females (51.2%) than males (51.2%)[104] and population density of 307ppkm^2. The state has 20 LGAs. The unemployment rate in the fourth quarter of 2020 (Q4:2020) was 16.36, underemployment was 9.87% and the poverty headcount was 9.32[105]; these are well below the national average, making Ogun State one of the most prosperous and livable states in Nigeria. The Gini Coefficient of inequality is 27.1. Ogun state is an industrial, financial, service and agricultural powerhouse taking advantage of the fluid administrative boundary and shared prosperity offered by the close proximity and market advantage of the huge population of the Lagos conurbation. About 48% of the continuously built-up land in the Lagos megacity agglomeration is in Ogun state[106]. The State parades an array of brown fields and potential anchor investors that are already operating in the state especially around the Agbara, Ota, Abeokuta, Ijebu Ode and Mowe-Interchange Flowergate industrial clusters. It is also located in close proximity to number of existing facilities including Class A road networks, Rail-line, Airports, Seaports, Free Trade Zone, Power Plants, Dams, etc. The state has a direct road access to the huge West Africa market which will come in handy through the African Continental Free Trade Area (ACFTA).

The identified VC crops for the SAPZ cluster 1 include Industrial Cassava, Rice, Cocoa, Oil Palm and Aquaculture. All the 20 LGAs of Ogun state have comparative production advantage in Cassava, Rice and Aquaculture. The AIH is prosed for the area around the Lagos-Ibadan and Sagamu-Benin Interchange in Sagamu LGA. One ATC is also proposed for along the Sagamu axis. IFAD-VCDP is already intervening in the following 8 LGAs: Obafemi Owode, Yewa North, Ijebu North East, Ifo, Ijebu East, Yewa South, Odeda and Odogbolu. Obafemi Owode and Odogbolu LGAs are close to the proposed AIH location.
The 12 remaining LGAs to be considered for expansion include: Abeokuta North, Abeokuta South, Ota, Ewekoro, Ijebu North, Ijebu Ode, Ikenne, Imeko Afon, Ipokia, Ogun Waterside, Remo North and Sagamu.

4.4 Summary of Environmental and Natural Resources Profile of the States

Kano State
Kano State Lies in Hydological Areas (HA) 8 and drained mainly by the Hadejia River in the Kano-Hadejia River Basin. It has several medium sized dams including the Challawa Gorge and Tiga Dam. Kano State is endowed with abundant land and water resources which are suitable for an all year-round crop production. To utilize these resources, about 17 man-made earth dams were constructed throughout the state to encourage dry season

[102] Ministry of Agriculture and Natural Resources, Kano State. Proposals for Kano State Participation in The IFAD-CASP Programme. December 2020
[103] Nigerian Bureau of Statistics (NBS, 2016): Annual Abstract of Statistics 2016. http://nigerianstat.gov.ng/elibrary
[104] NBS (2020): Nigeria Living Standards Survey 2018-2019. http://nigerianstat.gov.ng/elibrary
[105] NBS (2021): Q4: 2020 Unemployment Report http://nigerianstat.gov.ng/elibrary
[106] Mayowa Fasona, Ajobade Ariori and Akinlabi Akintuyi (2020): The challenge of urban evolution and land management in developing countries: Some lessos from the cty of Lagos. In Akinyele et al. Land and Development in Lagos. University of Lagos Press. Pp482-508.

farming[107]. Agriculture and grazing induced land degradation is very high in the Sudan savanna where Kano is situated. Other major ecological issues in the savanna include wind and water erosion, deforestation and vegetation degradation, declining soil fertility, flooding and dam sedimentation, drought and dry spells, pest infestations, poor agro-waste management, and environmental pollution and mining-induced land degradation and resource conflicts.

***Ecology and Land-use**:* Kano is located in the Sudan savanna ecological zone. The vegetation of the Sudan savanna consists of short grasses, about 1-2 m high, and some stunted trees. The major trees found include the acacia, ron palm, borassius palm, the silk cotton and the baobab. Although current land-use and land-cover maps for Kano State was not available, reference documents suggest that about 17,420km^2 representing 84.7% of the land was devoted to agriculture in 1995. Woodland/Shrub/Grassland mainly for grazing covered about 1258.3km^2 (6.1%), and bare surfaces with 830.7km^2. Water 437.2km^2, wetlands 392.65km^2, urban area 189.9km^2, and forest 39.6km^2[108] are other land-cover categories.

Ogun State

Ogun state lies in the Southwest geopolitical region and covers 16,400km^2 spread across 20 LGAs. The estimated population is about 5,037,594 and population density of 307ppkm^2. The mean annual rainfall in the state range between 1400-1800mm with areas north of the state receiving less than 1400mm. Mean annual temperature across the state is about 27^{o}C. Ogun state Lies in HA 6, and it is drained by the western littorals with Ogun (and its major tributary, Oyan), Yewa, Oshun and Shasha rivers. Oyan dam is major dam providing conjunctive water uses for urban water supply and agriculture. In addition, there are several small earthen dams around the state that provide water to support dry season farming. Thus, the project states have abundant surface and groundwater resources to be tapped. However, the peak rainfall in the river catchments across the two states often lead to massive flooding with concomitant destruction of crops (and aquaculture) especially around the river floodplains.

Ecology and Land-use: Although Ogun state is located within the forest belt of Nigeria, almost half of the state consists of savanna woodlands. The ecology consists mainly of forest, agricultural land and savanna woodland. Forestland accounts for 20% in 2016. Agricultural land consisting of scattered cultivation interspersed with fallow and intensive arable cultivation accounts for 28%, Savanna woodland 16%, and urban lands account for 5.5% in 2016. Deforestation, woodland degradation and biodiversity loss are major issue in Ogun state. The State's economy significantly depends on revenue from forest and forest resources. The state has about 10 gazetted forest reserves with a total area of about 2600km^2 (16% of the state). Teak and Gmelina mono plantation has become the most popular means of reforestation, accounting for about 22.5% of the land-cover in 2016. Despite reforestation efforts, historical deforestation in Ogun State is about -1.25% per annum between 1986 and 2016 (higher than -1.1% for SW Nigeria) and -5.9% per annum from 2006-2016 (higher than -4.7% for SW Nigeria)[109].

[107] Ministry Of Agriculture and Natural Resources, Kano State. Proposals for Kano State Participation In The IFAD-CASP Programme. December 2020

[108] State of the Nigerian environment Report, SEDEC Associates for Federal Minstry of Environmnet/UNDP), 2008

[109] Mayowa J. Fasona . Akinlabi O. Akintuyi . Peter A. Adeonipekun . Tamarabrakemi M. Akoso . Samuel K. Udofia . Oludare O. Agboola . Gbenga E. Ogunsanwo . Ajibade N. Ariori . Ademola S. Omojola . Alabi S. Soneye . and Oluwatoyin T. Ogundipe (2020): Recent trends in land-use and cover change and deforestation in south–west Nigeria. GeoJournal https://doi.org/10.1007/s10708-020-10318-w. Springer.

Selective logging is the most important driver of deforestation and forest degradation in the forest zone[110]. Ogun State's economy significantly depends on revenue from forest and forest resources. The state has about 10 gazetted forest reserves with a total area of about 2,600km^2 or 16% of the state[111]. Historical deforestation rate in Ogun is about -1.25% per annum between 1986 and 2016 which is higher than -1.1% for SW Nigeria. The gain recorded from 1986 to 2006 when the forest increased at about 2.6% per annum was totally eroded in the ten year period between 2006 and 2016 when deforestation occurred at about -5.9% per annum. This is higher than the -4.7% reported for SW Nigeria[112] and 5% for Nigeria reported by FAO in 2016[113] .

[110] Fasona, M., Adeonipekun, P.A., Agboola, O., Akintuyi, A., Bello, A., Ogundipe, O., Soneye, A., and Omojola, A. (2020): Drivers of Deforestation and Land-Use Change in Southwest Nigeria. In: W. Leal Filho (ed.), Handbook of Climate Change Resilience, Chapter 23, pp475-498. https://doi.org/10.1007/978-3-319-71025-9_139-1. Springer Nature Switzerland AG

[111] Mayowa Fasona, Akinlabi Akintuyi, Samuel Udofia, Tamarabrakemi Akoso, Ajibade Ariori, Peter Adeonipekun, Oludare Agboola, Gbenga Ogunsanwo, Oluwatoyin Ogundipe, Alabi Soneye and Ademola Omojola (2018): Deforestation and Land-Cover Changes In The Forest Reserves of Southwest Nigeria. Lagos Journal of Geoinformation Sciences. Vol 5, December 2018. pp67-87

[112] Mayowa J. Fasona . Akinlabi O. Akintuyi . Peter A. Adeonipekun . Tamarabrakemi M. Akoso . Samuel K. Udofia . Oludare O. Agboola . Gbenga E. Ogunsanwo . Ajibade N. Ariori . Ademola S. Omojola . Alabi S. Soneye . and Oluwatoyin T. Ogundipe (2020): Recent trends in land-use and cover change and deforestation in south–west Nigeria. GeoJournal https://doi.org/10.1007/s10708-020-10318-w. Springer.

[113] FAO (2016): State of the World's Forests 2016. Forests and Agriculture: Land-use Challenges and Opportunities. FAO, Rome. 126pages

5. REVIEW OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS

5.1 Potential Environmental Benefits

The major value chains pre-identified for SAPZ support include: Cassava, rice, poultry and fishery (for Ogun State) and Rice, tomatoes, groundnuts and sesame (for Kano state). These commodities are prioritized given their potential for import substitution, export prospects through value addition and potential for income and employment generation for smallholders, women and youth. The greatest overall positive benefits from Rice and Cassava which are the core value chain crops cultivation perhaps lies in the ability to convert their waste to useful products. Rice wastes are excellent for briquette making which can serve as alternative source of fuel for heating in rural households. This will reduce the pressure on firewood and forest degradation. The harvested rice stem could also be excellent for hay/silage to feed animals. Cassava peel is also excellent for animal feed when converted. Thus, an efficient rice and cassava waste value chain management is an adaptation mechanism to farmers-pastoralists conflicts, prevent animal intrusion into farms and provide alternative and more sustainable energy for domestic and small-scale processing uses. However, without the conversion knowhow and resources, the waste from Rice and Cassava becomes nuisance with its concomitant human health effects. Waste from poultry can also be processed for fish feeds for the fishery farms through and integrated system.

5.2 Potential negative environmental impacts

5.2.1 Deforestation and land degradation issues

The use of firewood for rice parboiling increases the rate of forest and woodland loss in the project area.
Agricultural land development, provision of market and production infrastructure including road construction/rehabilitation, small scale irrigation and drainage projects, could exacerbate forest and woodland loss and therefore need to be guarded against.

5.2.2 Road construction and rehabilitation impacts

The rehabilitation of feeder roads are essential to sustain the market linkages of the core commodity value chains supported by SAPZ, but also to community and local economies at large. Experience fro other IFAD supported projects have shown that greater attention needs to be paid to the environmental impact of such infrastructure projects to avoid obstructing drainage areas which cause water logging of otherwise arable land. SAPZ will support the carrying out of Environmental Management Plans that will be conducted in accordance with regulations to ensure planned activities such as culverts are included in the design and implementation of the feeder roads.

5.2.3 Pollution from Agrochemical use

One of the potential environmental impacts is that of poor application of agrochemical use. Experience from VCDP and CASP shows that capacity building should be strengthened in this area for maximum benefit. Training in Good Agronomic Practices (GAP), Integrated Pest Management and Fertilizer application to reduce crop damage, fertiliser waste, and reduce indirect GHG emissions and improve productivity is required.

5.2.4 Dam construction

In order to reduce farmer vulnerability to rain-fed agriculture and deepen dry season farming as climate resilience option, SAPZ will support the construction of small earthen dams. However, considerations should be taken to ensure that the dams are not cited in areas where re-settlement will be required and not beyond 15m high in accordance with IFAD guidelines.

5.2.5 Climate change issues

Projected climatic changes suggest that due to the increase in the variability of climatic conditions, the project areas will experience fluctuations in temperatures and precipitation. Both rainfall and temperature are likely to increase with possibility of more disastrous floods. With the increase of dry spells, there could an increase of droughts during the wet season and rain during the dry season. Increased intensity when coupled with land clearing means a greater risk of surface runoff and topsoil erosion, increased risk of river damage to road infrastructure and increased risks of landslides

5.3 Potential social benefits

SAPZ is expected to reduce unemployment especially among the youth, reduce poverty and create wealth and income, improve the food security situation, improve access to social (health and education) and financial services and reduce travel time especially among the teeming rural population. Rehabilitation of rural feeder roads and farm tracks will improve the life and livelihoods of more indirect beneficiaries of the project through savings in transport cost, post-harvest losses and access to the market. Hundreds more will directly benefit through short term labour, as contractors, and as construction supervisors. All these will improve adaptive capacity and strengthen resilience.

5.4 Potential negative social impacts

SAPZ will learn from VCDP to setup grievance redress systems through the apexes, conflict resolution committees, and the CAF and strengthen existing farmer groups to set up grievance redress system. Due to the increase of farmer-herdsmen clashes, the Fulani herdsmen will be integrated with the states traditional system, giving them opportunity to integrate with their host communities while taking part in the decision making process of the community.

5.4.1 Resource conflicts

Clashes between communities and pastoralists leading to heightened human insecurity remains the number one concern across the states. These needs to be managed through stakeholders that include and engage all actors to build confidence and understanding. SAPZ should also pursue land governance and sustainable land management that guarantees land capitalism and security of tenure as a mitigation option to land conflicts.

5.4.2 Land Access issues

Security of tenure by women and youth remains a challenge in the SAPZ states. Without secure ownership or at least guaranteed access to land for women and youth, the development of sustainable agri-enterprises will be extremely difficult, if not impossible and this could negatively affect the SAPZ. The risk of being pushed out of the land leading to loss of investments after improvements have been made or even crops planted is high if the land is not appropriately secured or authorized by the relevant community and government institution. In view of this risk SAPZ follow the VCDP land access model and facilitate properly documented lease agreements for youth and women farmers.

5.4.2 Social Exclusion and Gender inequality

SAPZ will strive to ensure up to 50% inclusion of youth and women among the clusters. SAPZ will also deepen the formation of women led FOs and women in leadership positions. In addition, inclusion of people living with disability (PLWD) is deepened.

5.4.3 Unsafe and Non-Healthy Working Conditions

Working conditions across sectors could be poor in the rural areas due to weak extension systems, and limited awareness of and non-compliance with health & safety standards. In the agricultural sector, the drudgery faced by most farmers (especially women and youth) make them more vulnerable to agro-chemical toxins from wrong methods of handling and overuse of fertilizer and pesticides. In addition, due to the high level of poverty, children often help in the production and/or processing of agricultural commodities. Efforts should be made in the SAPZ to ensure that appropriate Personal Protective Equipment (PPE) are used while engaging in these activities.

5.4.4 Managing expectations and Conflicts resurgence

Agriculture is now in the front burner of issues discussed in the country. In the last couple of years, there has been an increase in the awareness about agriculture and this has increased the expectation levels of the beneficiaries. In managing expectations, the project should ensure that the beneficiaries are enlightened and sensitized about the various project and the activities. It is also important that information pertaining to SAPZ is disseminated through credible persons or media.

5.4.5 Elite and Political Capture

Weak and non-transparent governance structures as well as exclusionary and divisive politics poses the risk of the SAPZ being hijacked or captured by the political and administrative elite to benefit only their cronies with significant impacts on the target beneficiaries. Targeting and profiling of FOs will be vigorous to prevent hijack and ensures that prospective beneficiaries are selected based on laid down criteria.

6. ENVIRONMENTAL, CLIMATE AND SOCIAL MANAGEMENT PLAN FOR SAPZ

6.1 Introduction

The environmental, climate and social management plans (ESMPs) presented below are relevant to the entire SAPZ project, including the agri-enterprise and related infrastructure sub-projects whose locations are not yet known. However, for these subprojects, a separate screening as outlined in chapter 8 is still required. The outcome of this screening and subsequent review may lead to the development of more detailed, location- and project-specific ESIA and ESMP.

6.2 Responsibilities

The Federal Ministry of Agriculture and Rural Development (FMARD), through the National Programme for Agriculture and Food Security (NPAFS), will steer programme planning and implementation including the implementation of the ESMF. The National Programme Management Unit (NPMU) will continue to manage the implementation of activities and provide technical support to and undertake coordination of programme activities, including the implementation of the ESMF, in each State. The NPMU and the SPMU will implement the programme in partnership with State and Local Governments and private sector partners. In the designation of responsibility both the NPMU and SPMU Officers, Ministry of Agriculture, Environment, Women and Youth, Service providers, farmers' organization and individual farmers are involved in the implementation of the ESMF.

6.3 Outline of the Management Plans

Tables 6.1 and 6.2 present the environment and 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 the bread experience from other IFAD projects in Nigeria especially the VCDP which shares the same agroecological zone with SAPZ.

The recommended mitigation measures mostly apply to both Kano and Ogun states. It is important to re-emphasize that these management plans are relevant to the Component 2 of the SAPZ project being led by IFAD. Component 1 being led by AfDB will apply the already disclosed ESIA for the states and subprojects. For component 2 activities and subprojects, a separate screening as outlined in chapter 8 is still required. A copy of the environmental and management plans should be made available to all program staff, participating institutions and other key stakeholder representatives as well as used in community sensitization (i.e. awareness - raising and training) activities.

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

Impact	Significance Rating (likelihood x consequence) Low-Medium-High	Extent / Prevalence	Recommended Mitigation [describe briefly 2 – 3 measures in bullet points]	Responsibility for implementing mitigation [name institution or responsible project level]	Means of verification	Timing / frequency o verification
ENVIRONMENTAL MITIGATION PLAN						
Flooding mainly from overflow of the local Rivers	High	All states	▪ Strengthen collaboration with the Nigerian Meteorological Agency to improve their capacity to generate forecast of extreme rainfall events and disseminate climate information in local language and at regular interval ▪ Compulsory agriculture insurance with NAIC, NIRSAL or other agencies by production and processing groups and individual to mitigate again loss to flood should be part of the farmers and Agri-enterpreneurs' package ▪ As much as possible discourage cultivation too close to the river to avoid flood ▪ Support introduction of improved and flood resistant rice varieties	NPMU, SPU and LGA Officers	▪ Ability of NIMET to issue and deliver place-based forecast ▪ Number of agro-entrepreneurs receiving and using agro-climatic information to guide timing of operations ▪ Number of farmers that signed off unto agricultural insurance ▪ Number of farmers that lost crops to flooding ▪ Number of farmers cultivating improved flood resistant rice varieties	Quarterly Quarterly Annual Annual Annual
Dry spell and drought	Moderate	All States	▪ Strengthen collaboration with the Nigerian Meteorological Agency to improve their capacity to generate seasonal forecast of droughts and dry spells ▪ Compulsory agriculture insurance with NAIC, NIRSAL or other agencies by production groups and individual to mitigate again loss t dry spell and droughts as part of the farmers and Agri-enterpreneurs' package ▪ In addition to agric extension officers, engage other means including farmers organization forum, radios, text messages, to disseminate weather and climate information to farmers in local languages	NPMU, SPU and LGA Officers	▪ Ability of NIMET to issue and deliver place-based forecast ▪ Number of farmers receiving and using agro-climatic information to guide timing of operations ▪ Number of farmers that signed off unto agricultural insurance ▪ Number of farmers using improved drought and dry spell resistant varieties	Quarterly Quarterly Annual Annual

Impact	Significance Rating (likelihood x consequence) Low-Medium-High	Extent / Prevalence	Recommended Mitigation [describe briefly 2 – 3 measures in bullet points]	Responsibility for implementing mitigation [name institution or responsible project level]	Means of verification	Timing / frequency o verification
			▪ Integrate use of traditional forecasting knowledge through regular feedback from farmers ▪ Encourage farms to use drought tolerant and dry-spell resistant seeds			
Erosion and landslide	Moderate	All states	▪ Encourage agronomic practices such as contour ploughing, terraces and bunds in erosion and mudslide prone hill-slope areas ▪ Encourage the planting of cover crops and anchor crops with the main crop ▪ All roads constructed or rehabilitated must have drainage to prevent erosion ▪ Design and construction of roads, bridges and culverts to be climate-smart and properly monitored to prevent inappropriate termination that can lead to erosion ▪ Collaboration with other project such as NEWMAP for synergy on erosion	NPMU, SPU and Servic Providers	▪ No of farmers in erosion in e prone areas adopting sound and sustainable agronomic practices ▪ Percent of kilometer of road constructed/rehabilitated with drainages ▪ Percent kilometer of road constructed/rehabilitated that are climate-smart and with proper termination ▪ MOU/exchanges with NEWMAP	Annual Mid-term, End-Term Mid-term, End-Term
Agrochemical Waste proliferation and water pollution	Low	All States	▪ Encourage development and use of improved and resilient local crop varieties to reduce pest resistance and use of agro-chemical ▪ Proper Training and certification of the 'spraying gangs' in sustainable application of agrochemicals ▪ Encourage use of organic manures ▪ Service providers and agro-chemical input suppliers to follow high standard of security and safety precautions in storage and transport of agrochemicals	NPMU, SPU, LGA Officers and Service Providers	▪ Number of farmers using improved and resilient local crop varieties ▪ Number of youth trained/ certified in integrated pesticide and agrochemicals management ▪ Number of trained and certified agrochemical suppliers	Annual Annual Annual

Impact	Significance Rating (likelihood x consequence) Low-Medium-High	Extent / Prevalence	Recommended Mitigation [describe briefly 2 – 3 measures in bullet points]	Responsibility for implementing mitigation [name institution or responsible project level]	Means of verification	Timing / frequency o verification
			▪ Collaborate with NAFDAC and SON in training of 'spraying gangs' and elimination of fake and expired agrochemicals		▪ Number of collaborative activities between VCDP and NAFDAC and SON	Annual
Land/ soil degradation and defoerstion and forest degradation	High	All States	▪ Production of project-specific ESIA by contractors should be required for all feeder roads, small dams, and market infrastructure construction ▪ Train farmers and service providers on sustainable land development and preparation methods including zero or minimum tillage. ▪ As much as practicable, encourage mixed cropping of target crops with cover crops and anchor crops where applicable ▪ involve partners from the Ministry and research institutes in training farmers on soil conservation techniques and sustainable agroforestry ▪ promote alternative energy to fuelwood	NPMU, SPU, LGA Officers	▪ Production of project-specific ESIA for market infrastructures ▪ Number of farmers that received training on sustainable land preparation and management and agroforestry ▪ Consummated MOUs with Research Institutes and agencies dealing with soil conservation techniques ▪ Number of processing sites using alternative energy ▪ Number of waste valorization to produce alternative energy for processing	Baseline/Reference Annual Mid Term Annual Annual
Fire, pest infestation and biodiversity loss and bush fires	Moderate	All States	▪ Discourage use of fire for land preparation and train farmers on sustainable land preparation and development options ▪ Avoidance of areas that infringe on known habitats and migration patterns of protected, endangered or rare species, and maintain known wildlife migration corridor ▪ Use nets and modern bird scaring equipment on rice field ▪ Synchronized planting for all farmers to enable synergy in bird control ▪ Use pest resistant variety for cassava	NPMU, SPU, LGA Officers	▪ Number of farmers that received training on sustainable land preparation and development ▪ Biodiversity surveys at project onset ▪ Number of farmers using pest resist cassava cultivars ▪ Research report on capacity to predict pest infestation	Annual Baseline Annual Reference, Mid Term

Impact	Significance Rating (likelihood x consequence) Low-Medium-High	Extent / Prevalence	Recommended Mitigation [describe briefly 2 – 3 measures in bullet points]	Responsibility for implementing mitigation [name institution or responsible project level]	Means of verification	Timing / frequency o verification
			▪ Use technology to monitor and improve capacity to predict pest infestation			
GHG emissions from rice paddies	Moderate	All States	• 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 • Convert waste into sustainable energy and resources	NPMU, SPU, LGA Officers	▪ Number of farmers trained i sustainable rice paddies management ▪ Number of processing units using sustainable energy ▪ Number of successful demonstration of briquette and biodigester production, and animal feeds	Annual Annual Mid-term, End-Term

Table 6.2: Social Management Plan

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
SOCIAL MITIGATION PLAN						
Resource conflicts especially farmers-pastoralists clashes	High	All States	▪ Setup/strengthen stakeholders committee/conflict resolution committee to include the local/community traditional counc and representatives of all social groups including the pastoralists ▪ Convene regular dialogue meeting of the stakeholders to review issues ▪ Outline clear grievance or complaint channels ▪ Avoid investments along known stock grazing routes and in known grazing reserves ▪ Where possible, Support the Governments to rehabilitate existing grazing reserves ▪ Encourage agro-entrepreneurs to sign on to insurance ▪ As much as possible, avoid investment in conflict hotspots	State Government, communities, NPMU, SPU, LGA Officers	Number of virile stakeholders committees Number, list of attendance and minutes of stakeholders meetings Number of agro-entrepreneur that signed on to insurance	Annual Biannually Annual

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			▪ Support for land reform and efficient land governance as adaptation		Support for other development partners and NGOs to increase pressure on government to institute a land reform and efficient land governance system	Mid Term
Grievance Redress among group members	Low	All states	▪ 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 preference to local community members	NPMU, SPU, LGA Officers	Stakeholder engagement plan (SEP) Stakeholder meeting reports, project flyers Complaints register Meeting records, observation Service provision contract and employment lists Code of conduct	Within 2 months of start of project Quarterly Quarterly At every project activity Upon award of contracts and after payments Within 6 months of project start

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			▪ Develop a code of conduct for all stakeholders ▪ Sensitize women and particularly youth on what it's 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 ▪ Actively involve the relevant ministries including Women and Youth and Environment		Community meeting Knowledge management materials Number of local CSOs in partne with AVDP Minutes and attendance at Steering Committee meetings.	At every project activity during first 6 months, quarterly thereafter Quarterly Periodical At every project activity
Land tenure and land access for women and youth	High	All States	▪ Advocate for land policy and land reform to guarantee land tenure security for beneficiary farmers ▪ Increased sensitization across the states and participating communities on land tenure and access to land for SAPZ intended beneficiaries ▪ Engage with government and communities to continue to secure land for existing and 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 VCDP in the new states ▪ Continue with documented lease agreements with landowners for intending beneficiaries without access to land	NPMU, SPU, LGA Officers	Land reform promotion documents and Policy dialogue Number of women and youth participating in VCDP (from the project register Number of people without access to land participating in VCDP Secure land access agreement signed Attendance register of sensitization meetings with Paramount chiefs and other stakeholders	Annual Quarterly Quarterly Annual At every project activity

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
Gender inequality	Moderate (High in Kano)	All States	▪ Encourage active participation of women in the SAPZ up to 50% as indicated in the PDR ▪ Engage women organizations and advocacy and right groups to mobilize women to participate ▪ Give some concessions/incentives to women farmers to enable them to participate ▪ Encourage men through advocacy to support women participation through guarantee of land and other resources required ▪ More involvement of the Ministry of Women Affairs in women advocacy	NPMU, SPU, LGA Officers	Number of women ad youth participating in SAPZ (from the project register Number of women advocacy groups working with SAPZ Minutes and attendance at advocacy meetings	Quarterly Annually Quarterly
Social exclusion of women, youth and people living with disability (PLWD) due to limited access to land/or fund	High	All states	▪ Actively involve women and youth in all components and levels of decision-making within the project; ▪ Strive to maintain Project beneficiaries' ratios ▪ Encourage the submission of business proposals from more women-only groups (incl. cooperatives); ▪ Ensure women hold at least 30-40% 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 ▪ Ensure that people living with disability (PLWD) are allocated certain	NPMU, SPU,, 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 enterprises owned by PLWD	At every project activity At business plan approval and every six months thereafter At every project activity Annual

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			percentages and given priority in the businesses that suit their condition (especially in processing and marketing) ▪ To avoid obstructionism ('blocking behavior'), ensure men are 'carried along' in sensitization activities. Work with locally trusted CSOs in community sensitization for 'attitudinal change'			
Managing expectations	High	All States	▪ The SAPZ 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 traditional leaders or their representatives) in every stage of project implementation ▪ Maintain robust knowledge management and information dissemination to keep everybody abreast of happenings	NPMU, SPU, LGA Officers, Service Providers	Project implementation manual Project selection criteria in loca languages Knowledge management and communication material	Before project commencement 6months into project Quarterly
Unsafe and non-health working conditions and Health challenges	High	All States	▪ 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 and production machineries and provision of PPE ▪ Sensitization of selected communities on child rights and ensure that there is no child labour on selected agri-enterprise projects through contracts and procurement processes, sensitization on	NPMU, SPU, LGA Officers, Service Providers	Contractor Guidelines Health & Safety flyer or poster Community meeting	Within 6 months of project start and half-yearly review thereafter Within 6 months of project start, half- yearly thereafter Within 6 months of project start and half-yearly review thereafter Within 6 months of project start, half- yearly thereafter

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			the risks on child labor, education of children, mechanization of the agricultural production to reduce the risk to engage children . ▪ Train the 'spraying gangs' on healthy handling of agrochemicals ▪ Compulsory periodical health check for farmers and spraying gangs		Number of health gangs that have undergone training Number of health outreach to farmers and health gangs and other value-chain actors	Annual Annual
Elite and Political Hijack	Medium	All States	▪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 ▪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.	NPMU, SPU, LGA Officers, Service Providers	Completed proposal screening forms Review missions Item on steering committee agenda Community meeting Agreement document	▪ 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 o Cultural Resources such as sacred forest and archeological site	Low	All States	▪Do not approve projects to be sited in or around already known sacred forests and community groves and archaeological sites listed or that will impact biocultural resources of importance identified through the assessment of physical cultural resources and cultural heritage in addition to a discovery procedure	NPMU, SPU, LGA Officers, Service Providers	Inventory of cultural resources	▪ Annual

6.4 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) when the exact location are known for ESIA should include at least the following components[114]:

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

Whenever a project causes negative environmental or social impacts there will be grievances (complaints) from people who are affected. "Having a good overall community engagement process in place and providing access to information on a regular basis can substantially help to prevent grievances from arising in the first place, or from escalating to a level that can potentially undermine project performance"[115] . The AfDB Grievance Mechanism (GM) will be applied in order to provide a formal avenue for affected groups or stakeholders to engage with the project implementers or owners on issues of concern or unaddressed impacts, a Grievance mechanism has been embedded as part of the framework. Grievances are any complaints or suggestions about the way a project is being implemented. They may take the form of specific complaints for damages/injury, concerns about routine project activities, or perceived incidents or impacts. Identifying and responding to grievances supports the development of positive relationships between projects and affected groups/communities, and other stakeholders. The Grievance Redress Mechanism will cover the three

[114] Adapted from IFC (2007) *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets* (IFC: Washington, D.C.), pp.164-168
[115] IFC (2007) *Stakeholder Engagement*, p.69 and p.72

processes of receipt, redress, and prevention. In resolving conflict in the communities, existing traditional methods that are affordable and accessible procedures for redressal of disputes shall be used such as: community meetings, elders-in-council/assembly, dialogue, council of chiefs, appeals and summons, religious leaders, youth council, women groups, and ultimately the police and courts, which is the last option after all others fail. The GM role is with the environmental and social safeguards specialists of Project Implementing Entity (PIE).

In order to reduce conflicts, a robust grievance / complaints mechanism that meets at least the following 'effectiveness' criteria should be instituted[116]:

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 during implementation.

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 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 resolutions[117].
On the overall SAPZ , the grievances redress mechanisms including: stakeholders (conflict resolution and management committees), associations (including farmers'

[116] Office of the High Commissioner on Human Rights (OHCHR) (2011), *UN Guiding Principles on Business and Human Rights*(OHCHR: Geneva), pp.33-34
[117] IFAD (2016) *Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP)* (IFAD: Rome), p.12

associations/organizations) traditional/local authorities, community square engagement (consisting of representatives of men, women and social groups), community general assembly, the project NPMU, businesses etc.

7. REVIEW OF ENVIRONMENTAL, CLIMATE, SOCIAL IMPACTS OF SAPZ SUB-PROJECTS

7.1 Potential Impacts and Recommended Mitigation for Agri-Enterprise Projects

Rice and Cassava are the major value chain crops to be supported SAPZ for both Ogun and Kano States. However, other value chains pre-identified for SAPZ support include poultry and fishery (for Ogun State) and tomatoes, groundnuts and sesame (for Kano state). Their production, processing and marketing will support additional value chains including transportation, agrochemical applications, and waste valorization and resource efficiency.

7.1.1 Rice Cultivation and Processing

Rice is fast becoming the most important staple food in the Nigerian homes and its production have increased significantly since 2015. Lowland rice paddies are becoming a common sight across the states of Nigeria, and a major crop in Kano State, and to a lesser extent in Ogun State, where the floodplains and major inland valleys are used for its cultivation.

Although wetland rice is naturally suited to the flood plains and major river valleys, flood is the major environmental and climate impact on rice. In recent past, several rice farms have been lost to floods (especially in other riparian states in Nigeria). In some cases droughts and dry spells have also been responsible for additional replanting costs as the plant wilted from low water and high temperature. Both floods and dry spells effects are often aggravated by lack of agroclimatic information on key parameters including onset and cessation of the rains and duration and time of dry spells and lack of irrigation. These impacts can be mitigated through strong collaboration with the Nigerian Meteorological Agency to prepare and disseminate place-specific forecasts for farmers and provision of small irrigation structures and facilities including boreholes and tube wells, pumping machines, etc.

Rice cultivation also requires clearing of land and removal of virtually all the trees and wetland plants to provide enough sunshine for the rice paddy. Rice production may also impact on biodiversity, especially birds and rodents' population that feed on rice grain. It also leads to forest and woodland degradation through selective cutting of trees for rice parboiling by local rice processors. Rice waste, which can constitute a nuisance to the environment, has the potential of being converted into briquette for rice parboiling and household cooking and heating purposes. Local farmers that cultivate Yam and other tuber crops have also found a use for rice waste in mulching. The harvested rice stems can also be used for feeding cattle. Rice cultivation requires agrochemicals and pesticides that can easily pollute surface and ground water bodies and environment. Rice is also vulnerable to pest infestations including stem borers which may lead to considerable loss of investment if not checked on time. The planted seed and agronomic practices applied are also important to the expected yield per hectare. Bad seeds can lead to substantial loss of investments. Thus, seed quality control is imperative to maintain the expected return on investment.

Enteric fermentation leading to emission of greenhouse gases (especially methane) from rice paddies remains a strong impact on climate which is yet to be addressed. Although GHG emissions from rice fields can be reduced by periodically draining the rice paddies, farmers need to be trained in doing this. Higher temperatures can make rice sterile with low productivity.

Resource conflicts between farmers and pastoralists driven by climate change and poor land governance regimes poses significant threats to investments and human security. These can be reduced by building mutual understanding and confidence between the two social groups – farmers and pastoralists. SAPZ will learn form the Commodity Alliance

Forum (CAF) conflict reduction strategy applied by VCDP.

Some of the recommended mitigation measures for rice farming include:

- Encourage the farmers to take risk transfer as loss mitigation measures – encourage and assist farmers to sign on to climate risk (including flood and drought) insurance with the National Agriculture Insurance Corporation (NAIC) and /or Nigerian Incentive-based Risk Sharing System for Agricultural Lending (NIRSAL). This will also mitigate possible losses from farm destruction occasioned by grazing livestock.
- Improve collaboration with NIMET to ensure production and dissemination (using existing extension vehicles and on smart android devices) of key agroclimatic information to farmers in local languages and at frequent intervals. SAPZ can learn from CASP and VCDP in this regards.
- As much as is possible, discourage cultivation in areas that are very close to the major river systems to minimize overflow during normal flow seasons
- Improve collaboration with research institutes (such as Africa Rice, Nigerian Cereal Research Institute, etc.) to introduce flood and drought tolerant and early maturing/short duration rice varieties to the farmers. This may make the peak flooding season coincides with post-harvest season rather than pre-harvest season as have witnessed in recent times
- Support for Seed lab - Strengthen the seed labs to be able to carry out rigorous tests on seeds to ensure that only genuine foundation seeds are used by farmers to reduce loss or poor return on investment
- Ensure training and certification of 'spraying gangs' on what to apply, at what stage, and in what density, and human impacts (including need to wear protection gear) to safeguard the health of crops, soils, water and the people
- Collaborate with chemicals regulatory agencies (National Agency for Food Drug Administration and Control (NAFDAC) and Standard Organization of Nigeria (SON)) to ensure that agrochemicals are genuine (eliminate expired and banned chemicals) and in training of spraying gangs and farmers
- Encourage the use of organic manure in farms as much as possible
- Make provision for conversion of rice wastes to briquette in all the rice processing units
- Train-of trainers (TOT) for extension workers to step down training of farmers on methods for draining rice paddies in mid-season to reduce GHG emission;
- Make provision for improved modern bird scaring-equipment on farms to reduce birds impact on rice farms and maintain birds population viability
- Synchronized production timing for efficiency in bird management
- Improve community and neighborhood security arrangements by supporting dialogue and understanding between farmers and pastoralists to reduce resource conflicts
- Avoid farming along recognized grazing routes and demarcated grazing reserves
- Promote efficient land management as adaptation - Collaborate with other organizations such as USAID, FAO and Presidential Technical Committee on Land Reform (PTCLR) to support policy dialogue with the State Governments and processes to improve on land governance by instituting land regimes that ensures efficient land management and administration with agricultural land cadastration and security of tenure and ensure land capitalism through a systematic land titling and registration process.

7.1.2 Cassava cultivation and processing

Cassava is currently the dominant staple and the most produced crop with Nigeria currently ranking as the world's number one producer with about 57, 855, 000 metric

tonnes in 2016[118]. Ogun State is the number one cassava producer in Nigeria. Cassava production and processing is immensely popular among women farmers in southern Nigeria. Cassava has the advantage of being adapted to different kinds of soil and ecological conditions. It is very drought tolerant and pest resistant. However, in low-lying areas cassava cultivation is highly susceptible to flooding, which destroys both the crop and cultivars. It is also vulnerable to bush fires and rodents attacks, thus farms should always be kept clear of weeds. Cassava processing generates minimum waste. Cassava peel can be readily converted into livestock feeds. Proper channelization of cassava wastewater also minimizes the odour. When the processing plant is provided with a biodigester, cassava waste water can be converted into biogas for heating. SAPZ can learn from VCDP in this regard.

Some of the recommended mitigation measures for cassava farming include:

- as much as possible, avoid cassava farming in low-lying areas especially around river floodplains
- encourage farmers to sign on to insurance with NAIC and other companies to mitigate possible losses from flooding, crop failure, bush fires, and land resource clashes
- strengthen collaboration with NIMET to generate and disseminate agro-climatic information to farmers to help them schedule production cycles
- if, due to land access and tenure regimes, the low-lying areas cannot be avoided, encourage farmers to use early maturity cultivars to ensure harvest before high flood seasons
- Deliver training and agricultural inputs to farmers on-time to enable them to adjust and adapt their planting and harvesting methods and timing;
- Ensure cassava weeds are free of weeds that harbor rodents and attract fires
- Create a perimeter fence with ruminants repelling plants such as castor and jathropha around farmland;
- Support Value Chains to specialize in conversion of cassava peel into animal feeds and biodigesters for gas production
- Cassava processing group to ensure proper channelization of cassava waste water to reduce odor and nuisance
- Invest in conversion of cassava wastewater into biogas
- Avoid farming along recognized grazing routes and demarcated grazing reserves
- Support partnerships to institute land reforms to reduce land resource conflicts

7.2 Potential Impacts and Recommended Mitigation for (Market) Infrastructure Projects

The following are some of the (market) infrastructure projects likely to be embarked upon by IFAD-SAPZ Project

1. Construction and rehabilitation of market connected farm roads and farm tracks
2. Construction and rehabilitation of culverts and bridges
3. Construction and rehabilitation of processing facilities
4. Land development activities
5. Construction of small scale (earthen) dams and irrigation schemes for dry season farming
6. Construction/Rehabilitation of drinking water systems

Some of the potential impacts of market infrastructure development include:

[118] FAO (2016c): Food Outlook: Biannual Report on Global Food Markets. FAO, Rome

7.2.1 Land Access

Market infrastructure will require the availability of land resource for their provision. The arrangement made for land will go a long way in determining sustainability of market infrastructure. Land development, irrigation activities and road construction all require large expanse of land. Some preconditions for market infrastructure include assurance that government or the community has guaranteed the lease of land to the beneficiaries during the program life, and the development of strategies for the maintenance and sustainability of the infrastructure by the concerned parties.

7.2.2 Dust, Vibration and Noise

The degree to which individuals perceive dust to be a nuisance depends on the frequency, intensity and duration of a dust-generating event. Farmers usually engage in a variety of activities that uses equipment or practices that create dust. Most land clearing equipment generates some dust. Dust may also be generated as fugitive dust when fine particulates are lifted from fields, roads, buildings and yards via air turbulence. The main mitigation measures recommended for mitigating dust including dust protection masks for machine operators and the spraying of water to reduce the level of dust during construction and/or transport activities.

Heavy equipment used for road construction create ground vibrations such that cracks can occur in adjacent buildings. These can also create some form of discomfort to inhabitants of the surroundings. An assessment of surrounding buildings would be carried out to ascertain the level of susceptibility to cracks because of ground movement. The buildings are to be strengthened and compensation paid for damages where it is unavoidable. Noise from the use of equipment is also a major concern. Operators should only use construction equipment that produces a moderate decibel level and consider the times when people will experience less discomfort (i.e. day-time only). Road construction and rehabilitation contractors will be expected to produce Environmental Management Plans for road construction and conduct environmental screening for the construction of farm tracks.

7.2.3 Deforestation

The removal of vegetation cover and trees during construction can lead to deforestation and should therefore be avoided as much as possible. Where tree removal is unavoidable, this should be compensated by tree and vegetation replanting along the constructed roads. Trees removed from farm during land preparations should be compensated by planting trees in addition to hedges along the farm boundaries. Agroforestry should be encouraged for both Rice, Cassava, Groundnut and Sesame farms to improve the environment and natural resources. An average of 15 trees per hectare is recommended in land development sites. In Madhya Pradesh (Central India) and average of 20 Acacia Nilotica (locally called Babul) trees are found per hectare of upland rice fields.

7.2.4 Surface and Ground Water Contamination

Unchecked and unmonitored surface and underground exploration, for example during dams' construction, can lead to ground water contamination. Appropriate impact studies/assessments with Environmental Management Plan should be conducted prior to the construction of earthen dams and irrigation structures.

7.2.5 Flooding/ Erosion

Flooding and erosion can occur because of poor judgment and poor design and

construction practices. This is very evident during the stakeholders' discussion for this ESMF. Adequate drainage should be provided for surface water run-off in all the roads to be constructed or rehabilitated. Geotextiles and Vegetation cover should be provided for slopes and indigenous grasses and shrubs with proven ability to stop erosion (e.g. Mahukachi) should be planted in areas undergoing erosion. Unnecessary dug-outs, burrow pits, and/or excavation of soil from its natural terrain should be avoided to reduce flooding. Replacement of dug out soils should be carried out when necessary.

7.3 Environmental and Socio-Economic Management Framework (ESMF)

Table 7.1 provides a framework for managing the likely impacts of the various activities expected to be implemented during the key parts in the agricultural value chain, i.e. production, processing, marketing, transport (and supply). It is important to emphasize that these management plans are relevant to the entire SAPZ project, including the agri-enterprise and related infrastructure sub-projects whose locations are not yet known.

Table 7.1 Environmental and Social Management Framework (ESMF) for SAPZ Agricultural Value Chain Stages

Part in value chain	Key issue affecting	Potential impact (negative)				
		Environmental	Social & Institutional	Economic	Standard Mitigation Measures	Monitoring & indicators
Production	▪ 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	▪ Forest and Woodland loss ▪ Land & soil degradation ▪ Water and soil pollution ▪ Flooding ▪ Erosion ▪ B ush fire ▪ Biodiversity loss ▪ Waste management issues ▪ GHG emission	▪ Increased youth, women and men employment directly and indirectly ▪ Increased sense of pride and responsibility by participating youth and women ▪ Resource conflicts ▪ Possible agitation from youth not presently included in the programme ▪ Social exclusion - women and youth and PLWD • Use of child labour ▪ Possible loss of	• Increased household income and reduced poverty ▪ Increased youth employment and social well-being ▪ Improved nutrition and food security ▪ Increased ability of women and youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development ▪ Increased import substitution especially of rice ▪ But increasing associated environmental and social costs	▪ As much as possible, discourage the opening of virgin forests ▪ Train farmers in sustainable land management practices and agrochemical management ▪ 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 ▪ Encourage full exploration of the value chain including soil testing and agrochemical services ▪ Develop a clear and simple Stakeholder Engagement Plan (SEP), incl. grievance mechanism, to manage expectations	▪ Number of farmers that received training on sustainable land preparation ▪ Change in forests area ▪ Results from periodic soil and water analysis ▪ Heath, safety and environment manual ▪ Number of value chain enterprises around soil testing and agrochemicals management ▪ Stakeholder Engagement Plan ▪ Conflict resolution committee meetings ▪ Lists of approved projects and their beneficiaries ▪ A greement on land access

Part in value chain	Key issue affecting	Potential impact (negative)				
		Environmental	**Social & Institutional**	**Economic**	**Standard Mitigation Measures**	**Monitoring & indicators**
Processing	▪ Use of processing machine Parboiling of Rice	▪ Waste generation ▪ Air, water and land pollution ▪ GHG emission from machines • Use of wood for heating/parboiling	▪ Unsafe and non-healthy working conditions ▪ Possible use of child Labourers • Migration influx to processing sites	▪ 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 of Rice ▪ But increasing associated environmental and social costs	▪ Encourage the use of renewable and low-carbon energy sources during processing operations • Encourage waste valorization and resource recycling ▪ 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	▪ Number of operators adopting renewable low carbon technologies ▪ Number of enterprises established focusing on processing ▪ Number of entrepreneurs adopting sustainable processing operations ▪ Knowledge management /communication plans, stakeholder meeting reports, communication project flyers/leaflets

Part in value chain	Key issue affecting	Potential impact (negative)				
		Environmental	**Social & Institutional**	**Economic**	**Standard Mitigation Measures**	**Monitoring & indicators**
Marketing	▪ *Construction of market infrastructure*	▪ Dust, smoke, noise, ground movement / vibration ▪ Deforestation ▪ Water pollution ▪ Flooding and erosion from poorly constructed culverts, roads, etc.	▪ 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	▪ 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 and postharvest losses	▪ 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 • Roads must be constructed with drainages	▪ 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
Transportation	• Use of motorized and heavy transportation machines	▪ GHG emission from transportation	▪ Influx of rural Migrant workers to agri-enterprise sites and processing areas ▪ Increased number of service providers, which boost the economy	▪ Increased ownership of motorized and other transport system ▪ Increased number of service providers ▪ Increased GDP ▪ But increasing associated environmental and social costs	▪ Organize transport entrepreneurs into an association for easy management ▪ Develop a code of conduct, and health, safety and environment regulation for transport operators	▪ Code of conduct for transport operators ▪ Minutes of meetings of transport operators' association

7.4 Analysis of Alternatives

The traditional approach to Rice and Cassava production in Nigeria is to use any available cultivar with little concern for quality controls. Based on the analysis of the approach thus far, the outcome has been to focus on high-yielding rice and cassava varieties. Farmers will be encouraged to abandon the predominant unsustainable agronomic practices to improved, efficient and climate-smart agronomic practices as enumerated on Table 7.2.

Commodity Value chain	Predominant Practice	Climate Smart Agriculture practices
Rice	• Recycling of paddy and use of untested seeds • Wrong application of soil amendments and agrochemicals • Use of low yield and long gestation varieties • Fertilizer spreading • Tillage operations remove all trees • Use of inorganic crop protection chemicals • No risk transfer measures to mitigate losses • No draining at mid-season increases methane emission • Farming activities not guided by agro-climatic information • Waste poorly managed and constitute nuisance • Wood for parboiling causing woodland and forest degradation • Limited to rainy season farming • Use wood for parboiling	• Encourage paddy transplanting and tested seeds from certified seed producers/suppliers • Encourage soil sample analysis for appropriate agrochemical applications • Train and certify spraying gangs • Encourage the adoption of improved, pest resistant and early maturing 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 • Fence farms with hedges and trees to reduce animal intrusions • Encourage farmers to sign-on to agric insurance for no greats and risk transfer • Strengthen collaboration to ensure Farming activities is guided by agro-climatic information for better timing • Train farmers to drain paddies at mid-season to reduce methane emission • Value chain to be created for waste conversion to briquette • Parboiling to be done with briquettes and other alternative efficient energy sources • Construct small dams and irrigation scheme for dry season farming • Train farmers on construction of water harvesting structure to retain water for dry season farming • Encourage farmers to use briquettes and clean cooking stoves
Cassava	• Use of spent and low quality stems • Wrong application of soil amendments and agrochemicals • Use of low-yield varieties and long gestation • Fertilizer spreading • Tillage operations remove all trees	• 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

	• Use of inorganic crop protection chemicals • Waste poorly managed and constitute nuisance in environment • No risk transfer mechanism • Production activities not guided by agroclimatic information • Trees and woods on land totally removed • Poor application of technology for erosion and flooding control	• the use of organic crop protection solutions like neem oil • Encourage carbon sequestration activities • Value chain to be created around waste conversion to animal feed • Waste water to be properly channeled from to reduce odour • Farmers to be encourage to sign on to Agric insurance for no regrets and risk transfer mechanism • Strengthen collaboration to ensure Farming activities is guided by agro-climatic information for better timing • Encourage agroforestry to maintain tree on farms, and replant trees along farm borders • Adopt techniques including terracing, bunding and contouring to control erosion and flooding in inland areas

8. ENVIRONMENTAL AND SOCIAL SCREENING OF SUB-PROJECTS

8.1 Introduction: Screening and Review

The Environment and Social Risk Category of the -SAPZ is ' Category 1' but some adverse impacts can be readily remedied by appropriate preventive actions and/or mitigation[119]. Serious attention must be paid to land development (because of its huge potential for deforestation and its secondary effects), and development of market infrastructure including construction of feeder roads and small dams and irrigation development. Loss of investments to floods is also a potential threat. By far the most important social risk is the resource-induced clashes between farmers and pastoralists and the SAPZ states have the potential of being impacted by this risk.

During implementation, it is essential that all sub-project proposals be screened, first on eligibility based on the 'letter of interest' / application form (see Annex 1), and secondly on the basis of environmental, climate and social impacts using the more detailed screening forms (see Annex 2). Project Screening for Environmental Impacts will ensure that sub-projects with high and irreversible impacts on the environment or people that cannot be readily mitigated are not eligible for support by SAPZ. As much as possible, before land is developed for any cluster, planting trees at the perimeter of the land area and nurturing them should be taken as part of the responsibility.

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. A summary and description of the possible adverse effects that specific sub-project activities may occur;
b. A description of any planned measures to avoid or mitigate adverse impacts, and how and when they will be implemented;
c. A system for monitoring the environmental and social effects of the project;
d. A description of who will be responsible for implementing and monitoring the mitigation measures; and
e. 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) NPMU 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).

8.2 Screening for Eligibility

The SAPZ PDR provides a detailed description of the targeting and selection process for beneficiaries. Annex 1 provides the proposed format for the letter of interest / application form, which should be completed by each intended beneficiary and will be used as the primary tool for screening for eligibility.

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119 Source: IFAD (2016) Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP) (IFAD: Rome), p.18

8.3 Screening for Environmental and Social Impacts and Climate Impacts

Refer **to African** Development Bank Group's Integrated Safeguards System and if screening tool are not available IFAD screening tool below will be applied for agri-enterprise and related (market) infrastructure subprojects and for contractors used for the SAPZ.

), and climate screening form for sub-projects (Annex 4).The intended beneficiaries are only required to complete the intention/application form in Annex 1 while the screening is done using the form in Annex 2, 3 and 4 by the NPMU Environmental/Climate Change Officer (assisted by any Service Provider for that purpose).

Annex 5 provides an environmental and social guideline for contractors especially those handling the construction of market infrastructure such as the construction /rehabilitation of market-connected rural feeder roads, irrigation facilities, dam's construction, production platforms, etc. 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. The guidelines include the site selection, prohibitions, construction management measures, safety during construction, community relations, chance finds procedures and environmental supervision during construction.

8.4 Impact Significance Rating

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.

Table 8.1 Definitions of Consequence

Consequence	Definition
No Impact / No change	No impacts on biophysical and social environments / livelihood / health / gender No public concerns No legal issues
Negligible	Low/minor impact on environment / livelihood / health / gender Minor social impacts No legal issues
Intermediate	Some level of impact on environment / livelihood / health / gender Social issues apparent May have legal implications
Severe	High level impacts on environment / livelihood / health / gender High public concerns or perceptions Legal non- compliance
Unknown	Extent of the impact cannot be determined at this point Apply precautionary principle

Projects that have low significance impacts may not require a new ESMP; in that case the standard ESMP and ESMF in this report will suffice. In the case of project with 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.

9. MONITORING OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS

9.1 Introduction

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.

9.2 Key Performance Indicators

Expected Outcomes: The SAPZ programme will leverage the innovative VCDP experience of geo-spatial technology and innovative data analysis tools to measure transformative changes in target groups' livelihoods. Some of the **core outcome** indicators that will be tracked are shown on Table 9.1.

Table 9.1: Some of the outcome indicators to be tracked

RESULTS CHAIN AND INDICATOR DESCRIPTION	RMF/ADOA INDICATOR	UNIT OF MEASUREMENT	BASE LINE (date)	TARGET AT COMPLETION (date)	MEANS OF VERIFICATION
OUTCOME STATEMENT 1: Increased private sector investments and capacity utilization in agro industry					
1.1: Increased number of new agro industry Investments	□	No.	0	500	Project reports, reference surveys, studies
1.2: Increased value of new investments (USD) by private sector companies	√	USD	0	USD 1.0B	
1.3: Increased number of jobs created disaggregated by age group and gender	□	No.	0	500,000	
1.4: Percentage of factories in Agro processing hubs with > 70% capacity utilization annually	□	%	0	50%	
OUTCOME STATEMENT 2: (i) Increased private sector capacity in Agro-Industrial management and value chain development; (ii) Increased access to markets realized by beneficiary smallholder farmers and small-scale processors, aggregators and service providers; and (iii) Demand-driven and climate resilient infrastructure for improved production and access to markets realized and sustainably managed by the beneficiary communities.					
2.1: Increased yield (by crop type.)	√	%	-	50%	Project reports, reference surveys, studies
2.2: Increased value of commodities produced through contract farming	□	USD	-	USD 400M	
2.3: Percentage of supported rural enterprises reporting an increase in profit (IFAD CI 2.2.2)	□	%	-	70	
2.4: Percentage of persons/households reporting improved physical access to markets, processing and storage facilities (IFAD CI 2.2.6)	□	%	-	70	
2.5: Percentage of households reporting adoption of environmentally sustainable and climate resilient technologies and practices (IFAD CI 3.2.2)	□	%	-	70	

2.6 Persons with new jobs/employment opportunities in Ogun and Kano (IFAD C1 2.2.1)	□	No	-	50,000	
2.7 Percentage of persons reporting an increase in production (IFAD CI 1.2.4) (gender, age and crop disaggregated)	□	%	-	80	
2.8 Percentage of persons reporting using rural financial services (IFAD CI 1.2.5)	□	%	-	80	
2.9 Percentage of supported rural producers' organization members reporting new or improved services provided by their organization (IFAD CI 2.2.4)	□	%	-	80	
2.10 Percentage increase in yields for commodities produced by targeted smallholder farmers (in Ogun and Kano)	□	%	-	100% for rainfed rice, 200% for irrigated rice, 100% for cassava, 50% for tomato, and 100% for groundnut and sesame)	Project reports, reference surveys, studies

The SAPZ programme is planned over a period of seven (7) years (2022-2028). The monitoring plan in Table 9.2 lists the parameters to be monitored, activity that will generate the parameters, monitoring indicator, and responsibility, monitoring means, frequency and the estimated cost.

Table 9.2 Environmental and Social Monitoring Plan

Parameter	Activity	Monitoring Indicator	Responsibility for monitoring	Monitoring means	Recommended frequency of monitoring	Estimated Monitoring Costs (USD)
ENVIRONMENTAL MONITORING						
Site specific ESMP and Environmental Screening for road construction/rehabilitation , , processing facilities construction, irrigation and land development, commodity store construction, and drinking water construction/rehabilitation Construction and rehabilitation of culverts and bridges Construction and rehabilitation of processing facilities, Land development activities Construction of small scale (earthen) dams and	Environmental Screening and impact assessment	Baseline on status of the environmental conditions	NPMU, SPU, Infrastructure Engineer, Irrigation Engineer, Environmental Officer, Service Providers	ESIA reports Adherence to laid legal and policy requirements	Once (project specific)	447,847

irrigation schemes for dry season farming						
Environmental Monitoring – include - baseline and end term survey, biodiversity surveys; monitoring of land water, and soil degradation and agrochemicals; climate, flooding and erosion prediction; pest infestation prediction	Environmental Screening and impact assessment	Baseline on status of the environment and climate conditions, risk and vulnerabilities	NPMU, SPU, Environmental Officer, Service Providers	Baseline reports, Biodiversity surveys report Climate risk and flooding and erosion risk reports Pest infestatio prediction report	Baseline and end term Once for specialized reports	153,750
Risk Transfer - Agric insurance	Climate and conflicts risk transfer	Farmers sign or to agriculture insurance	NPMU, SPU, Environmental Officer, Service Providers	How many agro-entrepreneur that sign on to agric insurance	Annual	62,500
Technical support and backstopping - includes support for NIMET for agroclimatic weather production and dissemination and setting up mini weather station; Seed labs; and waste valorization	Support for NIMET to install weather station and produce agroclimatic dat for periodic climate monitoring Support seed lab development Support rice and cassava waste valorization	Number of mini weather station installed Periodic production and dissemination o agroclimatic information Number of equipped seed lab Number of rice and cassava waste valorization initiatives	NPMU, SPU, Infrastructure Engineer, Environmental Officer, Service Providers	Field observation	Once	405,000
Training-includes training of spraying gangs, draining of rice paddies; and construction of water harvesting structure for dry season irrigation	Training of spraying gangs integrated pest and agrochemical management Training of farmers on water harvesting for dry season farming	Number of those trained	NPMU, SPU, Environmental Officer, Service Providers	Field observation	Once	37,500
SOCIAL MONITORING						
Support for conflict resolution - include support for stakeholders dialogue on conflict management and land governance	Conflict resolution stakeholders support and land governance dialogue	Activities of conflict resolution committee Organize land governance dialogue	NPMU, SPU, Environmental Officer,	Conflict resolution and land governance dialogue reports	Once	50,000
Other Social monitoring	Include gender and People living with disabilities (PLWD) mainstreaming	Activities of Targeting committee	NPMU, SPU, Gender Officer	Social Surveys Beneficiaries assessment	Annual	10,000
Health and Safety		Number of farmers sign	NPMU, SPU,	SPC Reports	Annual	20,000

	Health Insurance and outreach	unto health insurance				
						1,023,000

9.3 Summary of Environmental and Social Monitoring Costs

Table 9.3 shows the summary of the monitoring costs among the monitoring activities shown on Table 9.1 for year 1 and the years 2-7 of the SAPZ project life cycle.

Table 9.3: Summary of Environmental Monitoring costs

Monitoring Parameter	Average cost per state (in USD)	Total for 2 States (in USD)	Year 1 (in USD)	Year 2-7 (in USD)
Site specific ESIAs and Environmental Screenings*	142,125	284,250	142,125	142,125
Environmental Monitoring**	76,875	153,750	76,875	76,875
Risk Transfer - Agric insurance	31,250	62,500	31,250	31,250
Technical support***	202,500	405,000	202,500	202,500
Training ****	18,750	37,500	18,750	18,750
Support for Conflict resolution*****	25,000	50,000	25,000	25,000
Other social monitoring costs	5,000	10,000	5,000	5,000
Health and Safety	10,000	20,000	10,000	10,000
Total monitoring costs		**1,023,000**	**511,500**	**511,500**

*include roads construction/rehabilitation, processing facilities construction, irrigation development, commodity store construction, and drinking water construction/rehabilitation
** Baseline and end term survey, biodiversity surveys; monitoring of land, water, and soil degradation and agrochemicals; climate, flooding and erosion prediction; pest infestation prediction
*** includes support for NIMET for agroclimatic weather production and dissemination and setting up mini weather station; Seed labs; and waste valorization
****includes training of spraying gangs, draining of rice paddies; and construction of water harvesting structure for dry season irrigation
*****include support for stakeholders' dialogue on conflict management and land governance

As shown on Table 9.2 a total of **USD1,023,000** has been estimated for the environmental and social monitoring for the **SAPZ for the 2 states of Kano and Ogun**. This represents less than about **1.023%** of IFAD's **USD 100m** commitment to SAPZ. The detailed overview of the monitoring costs is shown on Annex 6. A total of **USD511,500** is expected to be expended at the base year while the rest is spread across the 2nd and 7th year (end of the project life cycle).

10. CAPACITY BUILDING AND TRAINING FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

10.1 Strengthening Capacity and Improving Resilience

A successful mainstreaming of climate change and the ESMF into implementation of the project requires the strengthening of institutional capacities, in particular those of the Programme implementation Units, and Agencies and Service Providers, Farmers Organization and Women Groups. Moreover, there is a strong need for context-specific, on-site training sessions for producers, processors, and others in the value chain, for example on climate-smart agriculture and climate change adaptation, to improve their resilience to deal more effectively with climate-related weather events.

10.2 Training Topics

Proposed training topics include, at the very least:

a. Community and agro-entrepreneur sensitization – including insurance and risk transfer mechanisms
b. Requirements of IFAD's SECAP and AfDB safeguards and ERNM, Gender, as well as Climate, Land and Disclosure policies.
c. ESMF processes, procedures and institutional arrangements to develop and implement required management plans;
d. Agroclimatic data and early warning (including pest infestation) capacity building
e. Screening and rating as prescribed in the ESMF.
f. Environmental, social and climate impact assessment, and requirements.
g. Preparation, implementation and monitoring of ESMPs and ESIAs;
h. Reporting and monitoring implementation of ESMPs;
i. Farmers Field School training on climate smart agriculture, environmental and social best practices, including Sustainable land preparations, agrochemical application and pest and disease management, sustainable agronomic practices, soil fertility management, low-impact farming methods,
j. Conflict resolution and grievance management mechanisms.
k. Environmental (EMS 14001) and social audit, and report writing

10.3 Target Audience and Approach

The target groups for training should include, at least:

a. Project Steering and Technical Committees; NPMU
b. SPMU Staff
c. Extension services and agencies
d. Service providers
e. Farmers Organizations
f. Beneficiaries

The training topics will be delivered based on the needs of each training target group. As much as possible, Training the Trainers (TOT) will be encouraged, where applicable, to manage resources and effectively reach the target audiences.

Table 10.1: Training Activity and Estimated Cost

SN	Activity	Year			Budget (USD) @400 = 1USD	Remarks
		1-2	3-5	6-7		
1	General Stakeholders and community sensitization using the media, workshop and road shows - on processing hygiene, climate change, resilient practices, etc	X	X	X	50,000	Local media+1 day workshop in each of the 2 States
2	ToT Capacity building for uptake of agroclimatic information and early warming	X	X	X	50,000	2-day -Train Climate/Environment Officers and selected implementation staff, to downnscale to farmers
3	Stakeholders dialogue on risk sharing and transfer mechanism	X	X	X	50,000	1day workshop
	Capacity building in IFADs requirements and ESMF and ESIA processes, procedures, implementation and monitoring and	X	X		25,000	5day training for
6	Farmers Field School training on climate smart agriculture, environmental and social best practices, including: Sustainable land preparations, agrochemical application and pest and disease management, sustainable agronomic practices, soil fertility management, low-impact farming methods	X	X	X	75,000	2day per LGA
7	Stakeholders capacity building on Conflict resolution and grievance management	X	X	X	25,000	2day training in state
8	Environmental (EMS 14001) and social audit and report writing	X		X	25,000	3 day workshop for environmental officers
					300,000	

The total training cost is estimated at **USD 300,000** which represents about **0.3%** of the IFAD commitment. In total, both the Environmental and Social Monitoring costs and Training cost accounts for **USD 1,323,000.00 representing 1.32%** of the IFAD commitment to the SAPZ estimated project cost.

Annex 1 – **(refer to African** Development Bank Group's Integrated Safeguards System and if screening tool are not available IFAD screening tool below will be applied)

SPECIAL AGRO-INDUSTRIAL PROCESSING ZONES PROJECT

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 to 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 2 - Environmental and Social Screening Forms for SAPZ Subprojects

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:	

A1. Screening for Environmental and Social Issues (refer to African Development Bank Group's Integrated Safeguards System and if screening tool are not available IFAD screening tool below will be applied)

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[120] (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, and 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?			

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

Question	Yes	No	Additional explanation of 'Yes' response
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[121]; areas of global significance for biodiversity 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?			

[121] '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.

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

Guidance for sub-project categorization (refer to African Development Bank Group's Integrated Safeguards System and if screening tool are not available IFAD screening tool below will be applied)

"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:	

B1: 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[122]?		
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)?		

[122] '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.

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)?		
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, and 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 3 - Environmental and Social Guidelines for contractors[123] (see https://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/December_2013_-_AfDB%E2%80%99S_Integrated_Safeguards_System__-_Policy_Statement_and_Operational_Safeguards.pdf
(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 dispose 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);

[123] 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 4 – Checklist for Construction Works **(refer to African** Development Bank Group's Integrated Safeguards System and if Checklist are not available IFAD Checklist below will be applied)
)

Based on the National Environmental (Construction Sector) Regulations (2011), at every construction facility the following checklist should be implemented:[124]

(1) Every facility shall implement Programmes on best practices as set out in Schedule I of the Regulations.

(2) Every facility shall provide base for ancillary equipment and bund wall for containment of waste oil in the event of any unanticipated discharge or spillage.

(3) Every operator of construction facility/site shall ensure:
(a) it has a functional, adequate and appropriate drainage system for the project;
(b) the separation or diversion of clean water runoff to prevent it from mixing with water containing high solid particle content;
(c) it minimizes the volume of water to be treated prior to release (same as storm water control system);
(d) the use of color coding for the drainage system such as blue for surface water drains and red for foul water drains;
(e) safe movement of materials and fuel to and from site;
(f) tanks are clearly labelled with their contents and storage capacity;
(g) workers are trained to carry out the outlined procedures in the Emergency Response Plan as specified in Schedule II to the Regulations;
(h) absorbent materials and other containment equipment (e.g. spill kits) suitable for the construction type, are available in adequate quantity on site; and
(i) all tanks are properly covered.

(4) The operator shall ensure:
(a) high standard of housekeeping;
(b) that dust/particulate matter arising from loaded trucks entering or leaving the site is kept to a minimum level by the use of tarpaulin materials as cover and that water sprays or other dust suppression or collection methods are used at every dusty place where work is carried out;
(c) appropriate use of Personnel Protective Equipment (PPE) by all persons at construction site as in Schedule VI to the Regulations;

(5) Every facility shall have an Emergency Response Plan in accordance with the guide template specified in Schedule II to these Regulations.

[124] *National Environmental (Construction Sector) Regulations* (2011). S.I. No.19.

Annex 5 - Social Inclusion Strategy

"In every country, certain groups (..) Confront barriers that prevent them from fully participating in their nation's political, economic, and social life. These groups are branded by stereotypes, stigmas, and superstitions. They often live with insecurity. And such disadvantages not only preclude them from capitalizing on opportunities to lead a better life, they also rob them of dignity."[125]

Social inclusion means different things to different people. In its flagship publication on the topic, the World Bank defines social inclusion as "the process of improving the ability, opportunity, and dignity of people, disadvantaged on the basis of their identity, to take part in society."[126] A strategy for social inclusion should therefore both address the above-mentioned 'barriers' as well as strengthen the capacities that disadvantaged groups in society require to make the most of development opportunities and realize their full potential.

SAPZ will directly contribute to social inclusion by actively focusing on unemployed youth and women, which together with people with disabilities and widows remain among the most disadvantaged groups in Nigerian society.[127] Benue and Niger have at least 9 local governments located along the river Niger and Benue and this increases their vulnerability to effects from flooding. To ensure those areas are not entirely excluded from project activities and left marginalized, SAPZP is advised to develop tailor-made solutions in those locations where there is at least a commitment to safe access for the project so that youth and women in such areas will still be able to participate in different value chain components.

Using the World Bank's advice to focus on three critical 'inclusion domains' of markets, services and spaces, SAPZ can help promote social inclusion in the project area through the following instruments and policies:

1. **Markets (Land, Regulatory Framework)**
   - Negotiate with traditional authorities in local communities for long-term land access by women and youth for Agri-enterprise activities;
   - Negotiate with state governments to allocate larger plots of unused (but suitable) farmland and provide security of tenure for women and youth associations for Agri-enterprise activities;
   - Support legislative reform establishing gender parity in land ownership and inheritance;
   - Closely monitor project progress, hold regular meetings with leaders/representatives of women and youth organizations to discuss project challenges, and provide additional (technical) support where needed.

2. **Services (Training, Financial, Labour, ICT)**
   - Provide refresher, advanced and/or top-up skills training on-site for women and youth (on any relevant topic that hinders progress in their agri-enterprises) in combination with intensive mentoring support;
   - Support opportunities for information sharing, whereby women and youth who are currently not part of the project can visit the agri-enterprise sites and whereby entrepreneurs can share their experiences (including reasons for failure and success);
   - Negotiate with agricultural banks to provide preferential credit arrangements for high-potential women or youth agri-entrepreneurs;
   - Encourage contractors / service providers to give employment preference to local community members (e.g. via 'code of conduct');
   - Organize a 'hackathon' together with a technology-oriented innovation centre to develop a special app for rural youth in the project area to promote farming and facilitate market access as well as create an online platform that allows women and youth to showcase their achievements

[125] World Bank (2013) *Inclusion Matters: The Foundation for Shared Prosperity* (WB: Washington, D.C.), p.xv.
[126] Idem, p.4.
[127] Widows are often dispossessed of their late spouses' property including land by the spouse's kinsmen. Special consideration and protection needs to be given to this category of vulnerable people to make sure they have access to land and other productive bases.

and experiences with wider society and other relevant actors (e.g. government and donor agencies).

3. Spaces (Physical, Cultural, Social)

- Liaise with local police to ensure security in farming areas, markets and access routes;
- Organize public awareness-raising campaigns in consultation with local CSOs to promote farming, encourage inclusive community-level decision-making, prevent intra-community conflict and reduce gender-based violence;
- In general, ensure that initial screening, selection and support to project beneficiaries by community leaders and others at the grassroots level is based on merit and need rather than lingering primordial considerations;
- To prevent climate-induced exclusion, recommended climate change adaptation and mitigation measures should be given priority. Many beneficiaries may not be able to bounce back once they are affected by hydro-meteorological disasters such as flooding and erosion.

Annex 6: Detailed Costing of Environmental and Social Monitoring costs

Sn	Monitoring activities	Qty /frequency	costing index	estimated unit cost/yr (Naira)	Total for cost index_per district	USD (1USD=N400)		Year 1	Year 2 - 7
1	Site specific ESMPs for road construction/reahabilitation (km)	300km	300	50,000	15,000,000	37,500		18,750	18,750
2	Site specific ESMP for processing facilities	24nos	24	500,000	12,000,000	30,000		15,000	15,000
	Site specific Environmental Screening for Solar powered boreholes	72 nos	72	100,000	7,200,000	18,000		9,000	9,000
3	Site specific Evironmental Screening for commodity store construction	120 nos	120	100,000	12,000,000	30,000		15,000	15,000
	Site-specific ESMP for Development of irrigated land	2700ha	2700	25,000	67,500,000	168,750		67,500	101,250
4	Environmental baseline and End Term Surveys - including biodiversity survey and Physical cultural Resources Survey	2 time	2	7,500,000	15,000,000	37,500		18,750	18,750
5	Environmental monitoring -Land, soil and water degradation assessment (including waste and agrochemicals in land, soil and water)	3times	3	7,500,000	22,500,000	56,250		18,750	37,500
	Environmental monitoring -climate risk and flooding and erosion risk and vulnerability study	1times	1	6,000,000	6,000,000	15,000		15,000	0
	Environmental monitoring -prediction of pest infestation Study	3times	3	6,000,000	18,000,000	45,000		45,000	0
	Agric Insurance for climate and social risk transfer - annual	3time	5000	5,000	25,000,000	62,500		20,833	41,667
	support for NIMET to produce and disseminate agroclimatic information to farmers and set up mini climate stations in each participating LGAs	1time -	24	1,500,000	36,000,000	90,000		30,000	60,000
	Support for seed labs and research on flood and pest resistant rice and cassava varieties	1per state	2	3,000,000	6,000,000	15,000		15,000	0
	support for conversion of rice waste to briquette and cassava waste into animal feed	1 pre-processing site	24	5,000,000	120,000,000	300,000		150,000	150,000
	Training of "spraying gangs" for sustainable agrochemicals and pesticides application and management - about 50 per state for - 2 states	1time	100	100,000	10,000,000	25,000		25,000	0
	Training/demonstration farmers on draining rice paddies in mid-season - 9 states	1time	2	500,000	1,000,000	2,500		2,500	0

Sn	Monitoring activities	Qty /frequency	costing index	estimated unit cost/yr (Naira)	Total for cost index_per district	USD (1USD=N400)		Year 1	Year 2 - 7
	Training/demonstration on construction of water harvesting structure for dry season farming - 9 states	1time	2	2,000,000	4,000,000	10,000		10,000	0
	Social -Support for stakeholders' dialogue and understanding on resources conflict management- 9 states	1time	2	5,000,000	10,000,000	25,000		8,333	16,667
	Social - support for dialogue on land reform and sustainable land management as adaptation - 9 states	1time	2	5,000,000	10,000,000	25,000		8,333	16,667
	Other social monitoring costs		2	2,000,000	4,000,000	10,000		3,333	6,667
	Health insurance coverage for agro-enterprenurs - annual- 9 states	3time	2	4,000,000	8,000,000	20,000		6,667	13,333
	TOTAL				**409,200,000**	**1,023,000**		**502,750**	**520,250**

Annex 7 – Field Visit and Stakeholders Consulted

SN	Title	Name	Designation	Organization
Ogun State – 31 March to 01 April 2021				
1	Dr	Adeola Odedina	Honourable Commissioner	Ministry of Agriculture , Abeokuta
		Ogun SAPZ Implementation Team		SAPZ Hub, Sagamu Interchange
2.	Mr	Ajibola Johnson Akindele	CEO,	The Young Ent Agro Services (IFAD-VCDP Eredo Youth Farmers Cluster Association), Abeokuta
3.	Mr	Goke Adeniji	Managing Director,	Harvest Field & Agro Processing Ltd, Ajura
4.	Dr	Adeogun	SPC	VCDP Ogun State
5.		MD and Management Team	MD	Animal Care Services Konsult, Ogere-Remo
6.		Project Management & Team		Premium Cassava Products, Ososa
7.		Beneficiary Group		Ijebu Development Initiative on Poverty Reduction, Fish Farm Cluster, Eruwe, Ijebuode