FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	**Strengthening Resilience and Food Security of the Vulnerable Communes of Boukombe and Bopa Against Increased Impact of Climate Change**

Project to Strengthen Food Security and Community Resilience to Climate Change in the Communes of Boukombe and Bopa

Country:	**Benin**
Thematic Focal Area:	**Food Security**
Type of Implementing Entity:	**National Implementing Entity**
Implementing Entity :	**Fonds National pour l'Environnement**
et le Climat (FNEC)	
Executing Entities:	**Caritas Bénin**
Amount of Financing Requested:	**3,053,742** (in U.S Dollars Equivalent)
Letter of Endorsement (LOE) signed:	Yes ☒ ☐ No ☐ ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐☒ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

☐☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

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Acronyms and Abbreviations

ACC	Adaptation to Climate Change
AFM	Administrative and Financial Manager
AIPs	Annual Investment Plans
ANPC	National Civil Protection Agency
ASECNA	**Agency for Air Navigation Safety in Africa and Madagascar**
ATDA	Territorial Agricultural Development Agency
BCC	*Behavior Change Communication*
CCA	Climate change adaptation
CF	Community Facilitators
CPS	Child Protection System
CTP	Technical Project Committee
DDAEP	Departmental Directorate of Agriculture, Livestock and Fisheries (Direction départementale de l'Agriculture, de l'Elevage et de la Pêche)
DDCVT	Departmental Directorate of Living Environment, Transport in charge of Sustainable Development
ECOWAS	Economic Community of West African States
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Safeguard
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmers' Field Schools
FNEC	National Fund for Environment and Climate
GCM	Gender and Communication Manager responsible for mobilizing stakeholders
GCPH	General Census of Population and Housing
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse gas
HCI	Human Capital Index
HDI	Human Development Index
HPI	Human Poverty Index
IGAs	Income-generating activities
IPC	Integrated Food Security Phase Classification
ITCZ	Inter-tropical Convergence Zone
LDN	Land Degradation Neutrality
MCVT	Ministry of Living Environment and Transport in charge of Sustainable Development
MDGs	Millennium Development Goals
MEM	Monitoring and Evaluation Manager

NAP/PNA	National climate change Adaptation Plan
NAPA/PANA	National Action Program for Adaptation to Climate Change
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NDP/PND	National Development Plan 2018-2025
NPC	National Project Coordinator
ODIB	Organization for the Development of Basic Initiatives
OVC	Orphans and Vulnerable Children
PAG	Government Action Program
PASAAF	Project for Food Security and Women's Empowerment
PDC	Communal Development Plan
PMU	Project Management Unit
PND/NDP	Plan National de Développement / National Development Plan
PNDPE	Early Childhood Nutrition and Development Project
PRIASAN	Regional Program for Agricultural Investment, Food Security, and Nutrition
PSC	Project Steering Committee
RGPH	General Population and Housing Census
SAP	Early Warning System
SDG	Sustainable Development Goals
SILC	Savings and Internal Lending Communities
SLM	Sustainable Land Lanagement
SLM/GDT	Sustainable Land Management
UNCTAD	UN Trade and Development
UNDP	United Nations Development Programme
USAID	U.S. Agency for International Development
WFP	UN World Food Programme

A. Project/Programme Background and Context

Provide brief information on the problem the proposed project/programme is aiming to solve. Outline the economic social, development and environmental context in which the project would operate.

1. Context of Benin

The Republic of Benin, located in West Africa, covers a land area of 112,622 Sq. km. It is bordered to the north by Niger, northwest by Burkina Faso, to the east by Nigeria, and to the west by Togo. Benin was a French colony from the late 19th century until 1960 and French is its official language and the language of instruction, but each ethnic group has its own language, which is also spoken. The country is divided into 12 departments subdivided into 77 communes which refers to the community living in the area and further divided into arrondissements and finally into villages or city districts.

Classified as a least developed country, Benin's GDP is US$ 17.3 billion. Based on the latest United Nations data, as of February 2024, its current population is estimated to be 13,950,142 with a population density of 122 per Km^2 (315 people per mi^2). Benin's population is predominantly young, with a median age of about 17.6 years old.[1] Benin's rate of population growth is among the highest in the world. This growth results primarily from a birth rate that is almost twice as high as the world average and a death rate that is similar to the world average. Additionally, approximately two-fifths of the population is younger than 15 years of age, ensuring the country's continued high growth rate. Benin's population is unevenly distributed, with 70% living in the southern quarter of the country. Life expectancy for females is about 64 years, and for males is slightly less.

This high population pressure has negatively impacted environmental resources and is further aggravated by climate variability and extreme weather events that further impact socio economic activities and the living conditions of the population, particularly in rural areas. In Benin, the Human Poverty Index (HPI) is estimated at 36.6% at the national level, compared to 47.6% in Atacora, the department where one of the two project area is located, and 29.1% in the department of Mono, where the other project area is located. The value of the HPI is a reminder that Benin is a developing country whose poor and vulnerable population do not have sufficient means to sustainably meet their basic needs. According to the National Institute of Statistics and Economic Analysis, the incidence of monetary poverty estimated at 38.5% in 2019 at the national level is significantly higher in the project areas in the departments of Atacora (60.5%) and Mono (43.0%)[2].

Benin's economy remains largely undiversified, underpinned by subsistence agriculture and extremely vulnerable to external shocks and changes in trade policies. According to UNCTAD 2022 data, 79% of total exports were food items (53%) and agricultural materials (26%). Key development challenges include agricultural diversification, improved agricultural productivity, economic diversification, and improving basic access to services. Agriculture is Benin's main economic sector, employing over 70% of the country, contributing 33% of GDP and 75-80% of export earnings.[3] Smallholder farmers are responsible for 90% of national production even though they farm no more than 10% of the total arable land.[4]

Because of its geographical position, the country is exposed to multiple climate hazards exacerbated by existing vulnerable socio-economic and environmental conditions: (i) a high population growth rate, whose livelihoods are highly dependent on natural resources; (ii) high poverty rates; (iii) a rural economy heavily dependent on rainfed-agriculture, and thus very

[1] https://www.worldometers.info/world-population/benin-population/

[2] Poverty Note 2019

[3] General Census of Population and Housing—Republic of Benin 2018.

[4] United States Department of Agriculture. 2014. Agricultural situation report – Benin.

sensitive to climate variations; and (iv) more than 50% of the country is affected by land degradation. Benin has an estimated deforestation rate of 55,900ha/ year (i.e. one of the highest in West Africa and in the world), thus reducing the ability of its ecosystems to quickly store carbon, offset and cope with some of the already palpable climate change challenges.

The agriculture sector is particularly vulnerable to climate change risks and impacts. Climate projections indicate that temperatures will rise in all regions of Benin during the rest of this century by as much as 3.27ºC. More specifically, increasing intensity and frequency of extreme weather events (i.e. droughts, pockets of drought, late rain, floods, high winds, excessive heat, etc).[5] This is gradually impacting the livelihoods and living conditions of small-scale farmers: agro-ecosystems are becoming more vulnerable, and farmers' adaptive and coping capacity is decreasing at a concerning level. This situation is further being exacerbated by the varying type and nature of climate change hazards that are intensifying the degradation of an already fragile biophysical environment, the destruction of both natural and cultivated ecosystems, causing more water scarcity and reduced soil fertility that altogether are leading to an increased food insecurity and malnutrition for both human and animals; additionally increasing tension between farmers and transhumant herders, as a result of frequent animal grazing on cultivated farmlands.

Food insecurity has increased over the past several years. The latest 'Cadre Harmonisé' figures, a tool used to assess food and nutrition security in West Africa and the Sahel region, estimate that 547,422 Beninese are severely food insecure and are faced with emergency levels of food insecurity (Integrated Food Security Phase Classification (IPC) phase 3 and 4) and 1,870,025 are experiencing food security stress (IPC phase 2). In 2021, almost 83% of households were unable to afford a healthy diet.[6] This is reflected in Benin's stunting levels which are above West Africa's average: 31.3% of children were stunted in 2020 and 5% suffered from wasting.[7] 72% of children between the ages of 6 months to 5 years are anemic, as are 58% of women and girls between the ages of 15-49.[8]

In the 2022 Human Development Index, Benin was ranked 166th out of 191 countries, and in the 2020 Human Capital Index, it was positioned at 147th out of 173 countries. Although primary education is compulsory and provided free of charge for all children aged 6 to 11, there remain disparities in educational opportunities, particularly for girls. While education is free for both girls and boys until the ninth grade, females often face barriers that limit their access to schooling. In 2021, the literacy rate among women stood at 35%, compared to 57% among men. In certain regions of the country, girls do not have access to formal education, and overall, they are more likely than boys to drop out before completing primary school. Primary school completion rates declined from 81% in 2016 (76% for girls and 85% for boys) to 62% in 2020 (59% for girls and 65% for boys), before experiencing a slight increase to 73% in 2021 (70% for girls and 77% for boys).[9]

Women in Benin face significant challenges stemming from the country's entrenched patriarchal norms, which limit their access to resources, education, and economic opportunities. As a result, women are often relegated to lower-paying jobs in the informal sector and burdened with unpaid household and agricultural tasks. This lack of economic independence and decision-making power

[5] https://www.gn-sec.net/content/pana-benin

[6] Cadre harmonisé. 2023. Cadre Harmonisé d'identification des zones à risque et des populations en insécurité alimentaire et nutritionnelle au Sahel, en Afrique de l'Ouest et au Cameroun: Résultats de l'analyse de l'insécurité alimentaire et nutritionnelle aiguë courante en mars-mai 2023 et projetée en juin-août 2023.

[7] Food and Agriculture Organization of the United Nations and others. 2023. The State of Food and Nutrition Security in the World, 2023. Urbanization, agrifood systems transformation and healthy diets across the rural-urban continuum.

[8] Gouvernement de Benin. 2019. Enquête Démographique et de santé 2017–2018 and Government of Benin. 2013. Enquête Démographique et de santé 2011–2012.

[9] World Bank. 2021. Primary completion rate, total (% of relevant age group) – Benin.

restricts their ability to cope with and respond to challenges, including climate change, which disproportionately affects them due to their heavy reliance on agriculture. Women carry out between 60% and 80% of agricultural tasks and 44% of the labor required to provide food for their families. Despite the government's efforts to promote gender equality through its 2018-2025 National Development Plan, cultural practices and implementation on the ground lag behind. These obstacles influence their ability to fully engage in food security initiatives and programs

In 2022, Benin was positioned at 138 out of 148 countries regarding gender equality.[10] Notably, while gender disparities in health, survival rates, and educational achievements were comparatively narrower, significant gaps persisted in political empowerment and economic participation. Consequently, women, girls, and other marginalized groups are likely to encounter disproportionately high hurdles in accessing food security. This challenge is further exacerbated for individuals with disabilities, who face a disproportionate impact from food insecurity, especially given the limited provision of social protection measures.

The proposed intervention offers a significant opportunity for women to address these challenges. By building their capacity to understand and respond to climate change, capacity building on adaptive agricultural methods, fostering new sustainable income generating activities, and enhancing financial inclusion, the intervention aims to empower women economically and socially. This will not only benefit women directly but also contribute to more inclusive and resilient communities and sustainable economic growth in Benin.

The positive structural and transformational changes that the project will foster are not exclusive to women, but aim to have a cascading positive, inclusive effect on other vulnerable groups, starting with youth and aimed to benefit all from enhanced local infrastructure and climate resilience capabilities, strengthened local growth, more sustainable livelihood prospects and more participatory and inclusive public practices.

1.1 Project Areas

The project areas of Boukoumbé and Bopa were selected in consideration of their climate challenge on the basis of (i) level of exposure to climate-related hazards; (ii) climate-related vulnerabilities, as assessed through the 2008 National Adaptation Plan and re-assessed by the newly released 2022 NAP; and (iii) degree of poverty and adaptive capacity.

Boukoumbé, situated in the northern Atacora department, had a population of approximately 82,500 residents, with a population density of 80 people/km² at the time of the 2013 census.[11] The commune covers an area of 1,036 km². Part of the larger Atacora mountain range, the geography of this commune is diverse, featuring rolling hills, fertile valleys, and lush vegetation. Boukombe has various ethnic groups, each with its own rich cultural traditions, practices and more than several local languages. The last general population and housing census indicated there are several socio-cultural groups in the commune of Boukombe, the largest comprising the Bètammaribè. The isolated nature of communities situated in a region with rugged terrain and significant erosion results in socio-demographic profiles that sets them apart from the typical socio-demographic norms observed in the surrounding areas of the Atacora Department.[12]

Agriculture is the primary economic activity in Boukombeis, known as the cotton-belt it produces two-thirds of the nation's primary cash crop, cotton. Corn is the predominant crop in Atacora, cultivated by 82% of households, followed by millet (45%), yams (41%), rice (18%), and cassava

[10] World Economic Forum Global Gender Gap Report 2022

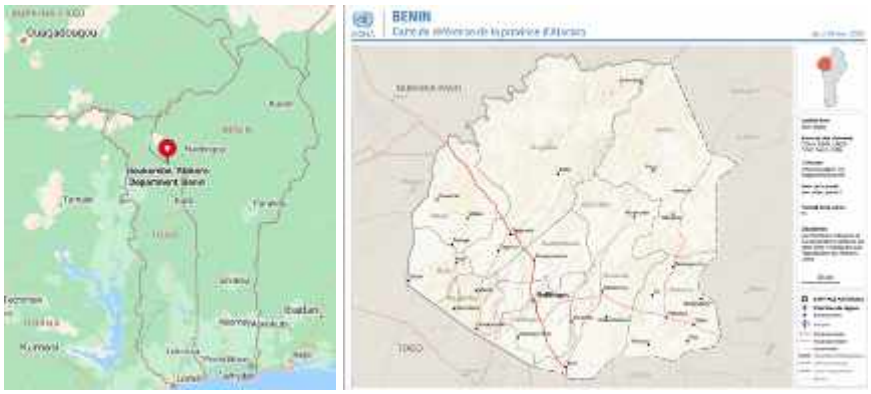
[11] Ministry of Development, Economic Analysis and Foresight. National Institute of Statistical and Economic Analysis. The General Population and Housing Census 2013.

[12] Ministry of Development, Economic Analysis and Foresight. National Institute of Statistical and Economic Analysis. The General Population and Housing Census 2013.

(11%). Atacora has the largest cattle and livestock populations in Benin, including cattle, sheep, and goats

Despite this economic activity, 69% of households in this department face non-income poverty, marking the highest rate of poverty across Benin. Atacora department stands out as one of Benin's poorest and most food-insecure regions. Reports from the World Food Programme (WFP) reveal that 25% of households in Atacora face food insecurity. An overwhelming 80% of the department's population depends on crop cultivation and gardening for sustenance and livelihoods.[13]

Boukombe's is located in close proximity to the Republic of Togo and approximately 100 miles from the border of Burkina Faso.



Map 1: Geographical location of the commune of Boukombe
Source : PDC

Bopa, a small town located in the southern part of Benin in the southeast of the department of Mono, had a population of around 86,000, with a population density of 264 people/km² at the time of the 2013 census. It is situated on the banks of Lake Nokoué, which is the largest lake in Benin and is around 70km to the Atlantic Ocean. The commune encompasses an area of 365 km2, or 22.74% of the area of Mono and about 0.32% of Benin in its entirety.[14] The Mono department is characterized by a diverse landscape that includes coastal areas, lagoons, mangroves, and inland plains. The inland areas, of which Bopa is one, is primarily used for agriculture, including the cultivation of crops such as maize, cassava, and yams.

The Mono department is made up of coastal areas, lagoons, mangroves, and inland plains. The inland areas are primarily used for agriculture, including the cultivation of crops such as maize, cassava, and yams. This department is comprised of a diverse array of ethnic groups, each speaking their own language, and contributing distinct traditions and customs to the region's culture. Among these are the Fon, making up one of its largest ethnic groups and the Yoruba, who reside across West Africa. Indigenous to the south, the Adja people bring agricultural expertise and customary practices, while the Goun and Mina populations are found in the coastal areas. In rural areas, the Aizo contribute unique language and customs. This cultural mosaic within the Mono Department reflects the richness of Benin's heritage and underscores the importance of its diverse socio-cultural fabric.

Mono is the most food insecure department in Benin. According to the WFP, half of Mono's households experience limited food security and 28% of Mono's households are considered food insecure.[15] Mono has the second highest poverty rate in Benin and is considered economically underdeveloped compared to the rest of the country despite its proximity to the urban areas on the

[13] Government of Benin and WFP. 2022. Benin: Analyse globale de la vulnérabilité, de la sécurité alimentaire et de la nutrition.

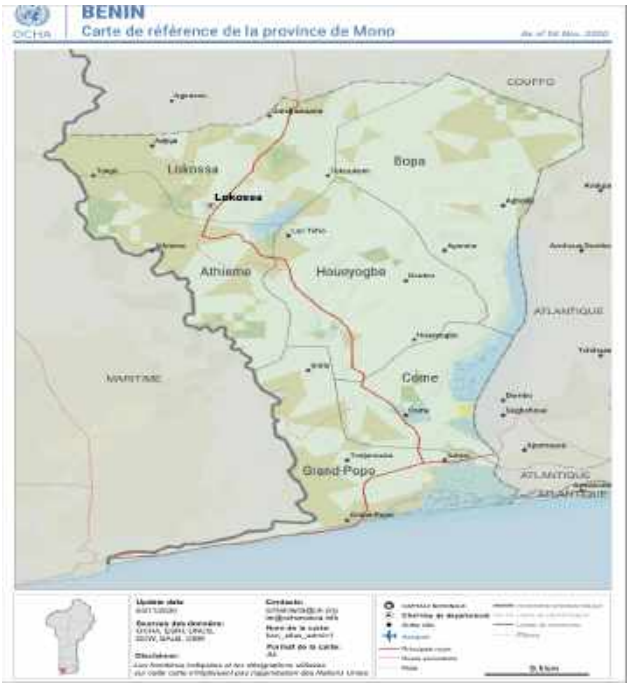
[14] Ibid

[15] WFP. 2018. National strategic review "Zero hunger" in Benin to 2030

coast. The main economic activities in Mono are agriculture, fishing, livestock, small-scale business, trade and crafts. Mono is a primary location for the cultivation of palm oil; one of the country's main exports. Livestock is another important income source in Mono.

In Bopa, economic activities primarily revolve around agriculture, fishing, and hunting, accounting for 73.8% of the total. Following closely are trade, catering, and accommodation, making up 9.9%, while manufacturing industries and other services contribute 6.2% and 6.5%, respectively. The vast majority of agricultural households, about 99.5%, engage in crop production, with cassava cultivation being predominant at 50%, followed by maize at 25%, and beans/cowpea at 14%. Traditional agricultural equipment is utilized by all households for farming activities.

In Bopa, approximately 26% of households are headed by women. However, an analysis of gender dynamics reveals significant disparities. Women often face challenges in accessing and controlling land and productive resources, resulting in limited income generation and reduced participation in local decision-making processes. Furthermore, only one in ten women holds decision-making power within the household, including matters such as budgeting, investments, education, family planning, and healthcare, in stark contrast to the seven in ten men who typically hold such authority. This gender imbalance is a prevalent issue across African societies.

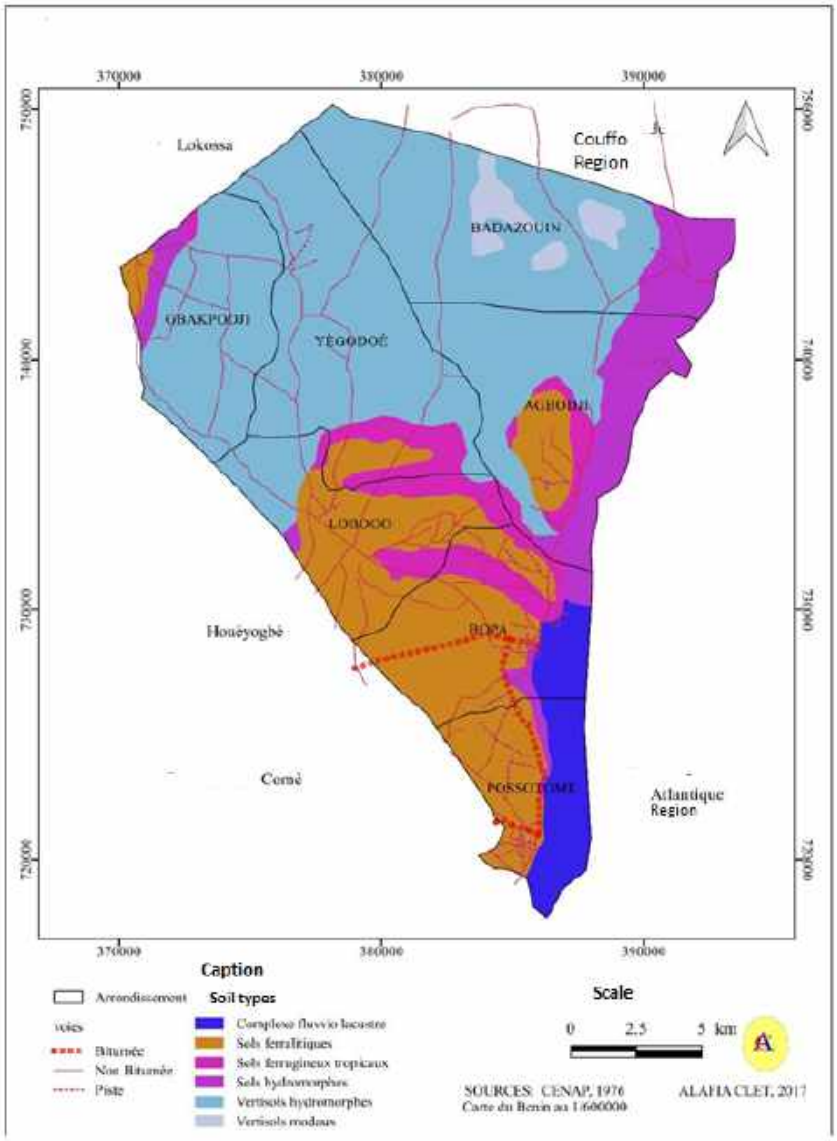


Map 2: Geographical location of the commune of Bopa
Source : PDC

The Commune of Bopa has a diversity of soils (Map 3) favorable to agricultural practices. These soils can be grouped into three major groups based on the pedology of the commune of Bopa:

- **Vertisol-hydromorphic or black earth.** These clay soils have a poor physical structure that are susceptible to significant changes in response to water content and may experience waterlogging. 55% of the commune is comprised of this soil. This type of soil is fertile but its risk of acidity limits some crops;
- **Ferralitic soils or bar soils on loose sediment:** This type of soil are characterized by a distinctive reddish color due to the presence of iron oxides. These soils are formed through the weathering of rocks in hot and humid climates, leading to low fertility and potential drainage issues and cover more than 20% of the commune;

- **Hydromorphic soils**: This type of soil is made up of wetland areas (valleys and basins) These are sandy-clay soils covering more than 10% of the total area of the commune. These soils present in moderately organic and humid in Gley, mineral or slightly humid in deep Gley and mineral or slightly humid in pseudo-Gley.



Map 3: Soil map of the commune of Bopa
Source: PDC 2018-2022 Commune of Bopa (2017)

The soil types most commonly encountered in the Commune of Boukombe are leached tropical ferruginous soils, characterized by a low organic matter content, a sandy texture, and a structure that is particulate and susceptible to erosion. Hydromorphic soils are also found in the wetlands, with good fertility potential. Large wetlands exist in the western zone of Boukombe (Korontière, Ouest Manta, Ouest Tabota). There are many small wetlands that are used for rice cultivation.

Despite the constraints associated with their use, the soils of the commune are used for the production of cotton, cereals (corn, sorghum, small millet, and fonio), and grain legumes. The schist soils, vary in color, fertility, and acidity, with a tendency to be moderate to low in fertility are particularly favorable for the production of an ancient grain called fonio in the Manta arrondissement. There has been a decline in soil fertility and a reduction in food production.

The vegetation of the Commune is dominated by clear and wooded savannahs. *Adansonia digitata* (baobab), *Borassus aethiopum* (palmyra Palm), *Parkia biglobosa* (African locust bean), *Vittelaria paradoxa* (shea tree), *Diospyros mespiliformis*, *Ceiba pentandra* (kapok tree), *Blighia sapida* (false mahogany) and *Tamarindus indica* (tamarind tree) are the most common woody species. Around the settlements, there are physical signs of deforestation due to heavy agricultural encroachment. The fauna has sparse wildlife population which consists primarily of deer, agouti, rabbit, rat, partridge, and wild guinea fowl.

Human activities are profoundly modifying the Commune's landscape. The land use units have changed significantly over the past 20 years (between 1995 to 2015): the areas of open forest and wooded savannah and forest galleries have declined by 17% and 25% respectively, converting to fields and fallows, plantations, and settlements. There has been a 4.7%increase in fields/fallows, 18% incease in plantations and 115% increase in human settlements.

1.2 Geographic context

Benin is characterized by three distinct climate zones: the Sudanian zone in the north, with a mean annual rainfall below 1,000 mm and a growing season of 145 days; the Sudano-Guinean zone in the center, experiencing a mean annual rainfall of 900-1,100 mm and a growing season of around 200 days; and the Guinea zone in the south, with a mean annual rainfall of 1,200-1,400 mm and a growing season of up to 240 days. The climate patterns in northern Benin are defined by a dry season and a wet season dictated by the movement of the Inter-tropical Convergence Zone (ITCZ). From May to November, during the rainy season, the ITCZ is in its northern position, while the dry season occurs from December to March, marked by the 'Harmattan' winds from the northeast carrying air from the Sahara Desert. Northern and central regions receive between 200-300 mm of rainfall per month during the peak rainy season (July-September). In contrast, southern Benin experiences two distinct wet seasons, differing in duration and aligning with the northern and southern passages of the ITCZ across the region. The longer rainy season spans from March to July, while the shorter one occurs from September to November.

In general, northern Benin is dominated by savannas and semi-arid regions, featuring grasslands scattered with trees and shrubs. This area tends to be drier and has a shorter rainy season compared to the southern part of the country. The landscape is well-suited for agriculture, but the arid conditions present challenges, particularly for farming. During periods of drought, food security can become a significant concern. On the other hand, southern Benin experiences a distinctly tropical climate with diverse ecosystems and considerably higher rainfall.

2. Benin's climate context

Despite Benin's minimal contribution to global greenhouse gas (GHG) emissions, accounting for only 0.05% of the global total, it is one of the world's most vulnerable countries to climate change. According to the ND-GAIN Country Index, Benin ranks 153rd out of 182 in 2020, being considered a county with a high level of vulnerability and low level of readiness, with critical adaptation needs that require financing.[16]

In Benin's Communication on Adaptation to the UNFCCC, over the past forty years, Benin has experienced a significant number of climate induced extremes that have impacted more than four million people and caused the death of a hundred people. The economic losses caused by the 2019 floods alone are estimated at approximately US$ 91 million.[17]

[16] https://gain-new.crc.nd.edu/country/benin#readiness

[17] https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/snu_10-08-2020_post_disaster_needs_assessement_benin.pdf

According to the World Bank's projections in the Country Climate and Development report for Benin, average annual GDP losses are expected to escalate over time and could potentially reach as high as 19% of GDP by the year 2050. The estimated impact of climate change on real GDP is anticipated to rise from an average range of 7-9% in the 2030s to 11-19% by 2050, compared to the baseline, across both climate scenarios. This translates to a corresponding decrease in real per capita income. Specifically, under the hot/dry scenario, GDP per capita is forecasted to plummet by over 18% by the year 2050.

Climate change is being felt in the country, with the latest decades being marked by: (i) mean annual temperature increase; ii) reduced number of rainy days per year with a shift of precipitation patterns; and iii) increased frequency and intensity of droughts and floods.

Rising temperatures in Benin have the potential to intensify periods of drought and floods, which pose a substantial threat to food security. Climate change has altered precipitation patterns, resulting in changes in timing, intensity, and distribution of rainfall. Adaptive measures are needed to face this climatic shift and its impact on agriculture, water availability, and increased risk of drought and floods.

Temperatures are expected to rise by between 2 °C and 4°C by 2100, depending on scenarios and projections suggest that future dry and wet periods will intensify, leading to more frequent and severe droughts and floods, which will disproportionately affect the population and agricultural sector. If global warming continues on its current trajectory, it is anticipated that by 2070, 98% of Benin's territory will experience extreme temperatures, making it one of the most heavily affected countries in terms of landmass exposure worldwide.

2.1.Temperature

Annual mean temperature has been steadily increasing from 1991 onwards. Between 1991 and 2021, the annual mean temperature increased by approx. 1.2˚C, from 27.48˚C to 28.7˚C.[18]

Both the minimum and maximum mean annual temperatures have experienced an increase ranging from 1˚C to 1.3˚C. This trend is reflected at the department level, with all three temperature variables showing increases above 1˚C. Other studies have confirmed these warming trends, noting a rise in the average number of 'hot' days per year by 39 days between 1960 and 2003, and an increase in hot nights by 73 during the same period. In contrast, the frequency of 'cold' days and nights annually has significantly decreased since 1960.

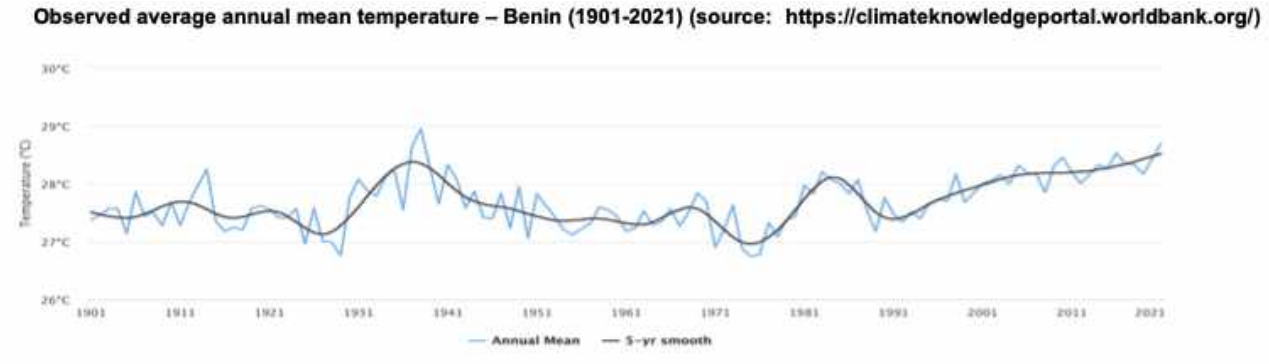


Figure 1: Observed average annual mean temperature

Source : Climateknowledgeportal.worldbank.org

The figure on the left depicts the monthly mean temperature variability from 1971 to 2020, based on World Bank reference data from 1991-2020. A discernible warming trend is evident across the

[18] Benin's third national communication (TNC, 2019).

year, with the hottest months occurring predominantly in the latest decade of the 50-year period. On the right, the chart illustrates the change in intensity of the maximum of daily maximum temperature. This provides insight into potential climate signals regarding the magnitude and frequency of short-term extreme events. Over the past 30 years, there has been a notable intensification of extremes, both in terms of frequency and intensity.

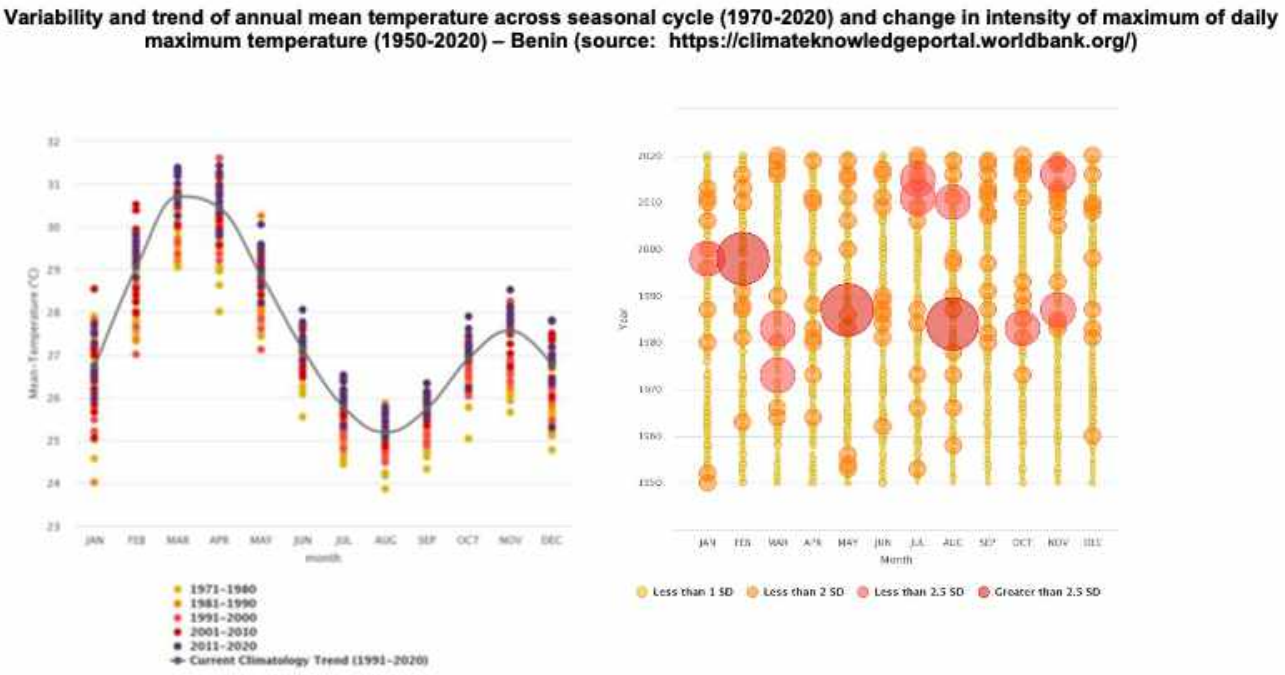
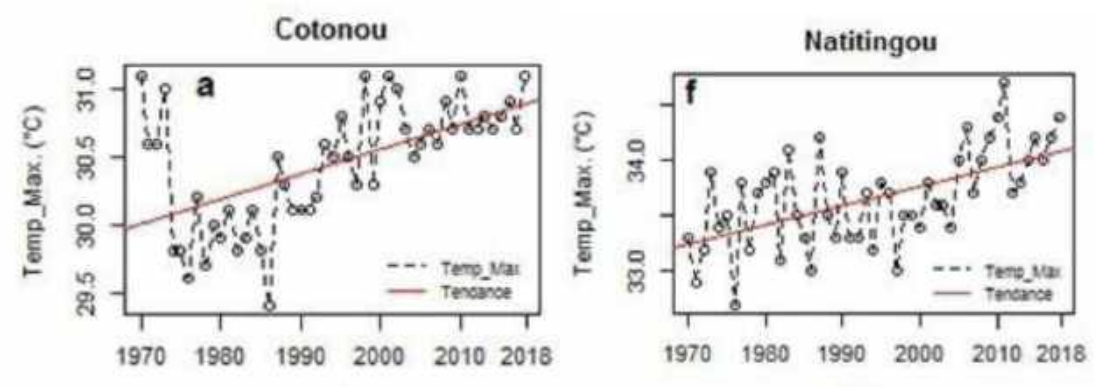


Figure 2 : Variability and trend of annual mean temperature across seasonal cycle (1970-2020) and chang in the intensity of maximum of daily maximum temperature (1950-2020) – Benin
Source : climateknowledgeportal.worldbank.org

In assessing the climatic and environmental conditions of the project areas, rainfall and temperature data for the Commune of Bopa are sourced from the Synoptic Station of Cotonou, while data for the Commune of Boukombe comes from the Synoptic Station of Natitingou. This approach is necessitated by the unavailability of temperature data for these communes from ASECNA.

Figures 3 and 4 show the changes in annual mean maximum temperatures and annual mean minimum temperatures over the period from 1970 to 2019. There is a significant upward trend at the 5% threshold (p value < 0.001) observed in all departments, for both maximum and minimum temperatures. This trend reflects the additional greenhouse effect, indicating that Benin is indeed experiencing the impacts of global warming.

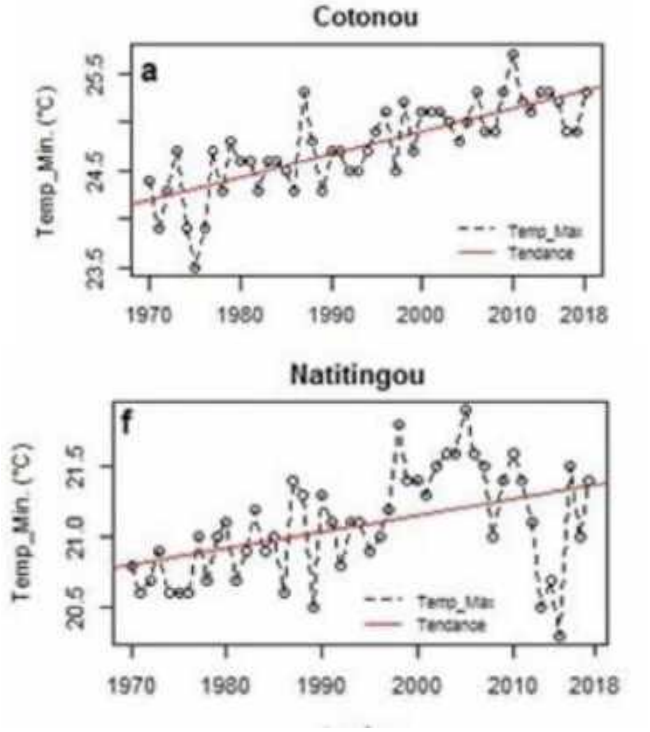
Minimum temperatures rise twice as much as maximum temperatures. Over the period from 1970 to 2019, maximum temperatures increased by about +1°C and minimum temperatures increased by about +2°C. The rate at which heat is rising is noteworthy.



Bopa reference Boukumbe reference

Figure 3 : Mean maximum annual temperature variation at the reference stations in Benin (Bopa : Cotonou and Boukumbe : Natitingou) from 1970 to 2019.[19]

Source: Météo-Bénin, 2022



Bopa reference Boukumbe reference

Figure 4 : Mean minimum annual temperature variation at the reference stations in Benin (Bopa: Cotonou and Boukumbe: Natitingou) from 1970 to 2019. [19]

Source: Ibid

2.2.Precipitation

Benin's average annual rainfall, though reasonably high, varies considerably by season and location. North and central Benin have reported water sources, such as dams, boreholes and shallow wells, run out during the dry season of November through April.

In terms of precipitation, climate change has led to a reduction in the range of annual rainfall, decreasing from 184.94mm to 158.47mm annually between 1991 and 2021. Analysis of data from Meteo-Benin indicates significant fluctuations in average annual rainfall across all six analyzed stations in the country from 1970 to 2019. Additionally, there is a slight spatial variation in precipitation from south to north, with a minimal difference observed between the average annual

rainfall at different stations. Over the past 60 years, interannual variability in precipitation reveals distinct patterns. Years such as 1977 and 1983 were marked by prolonged droughts and notably dry conditions, while others like 1962, 1968, 1988, 1997, 1998, and 2010 saw instances of severe flooding.

The country's rainfall is increasingly erratic and at times, produces pronounced fluctuations within the seasons. Particularly noteworthy are the shifts observed in the month of June, traditionally associated with maximum rainfall in the southern region, and the months of August and September, when the northern region typically experiences peak rainfall. Recent years have seen a significant increase in rainfall variability during these periods. Notably, the month of August, which historically undergoes a decrease in rainfall, is now witnessing substantial changes, particularly in Central Benin, where it is becoming progressively wetter. Meteo-Benin's analysis of rainy season patterns indicates notable shifts in the South, with the major rainy season exhibiting an early start between 1961 and 1989, a late start from 1981 to 2004, and erratic onset from 2005 to 2017. Conversely, the minor rainy season has shown a late start from 1951 to 1980 and an early start from 1981 to 2017, suggesting an overall trend towards earlier onset. In the North, there is a general tendency towards a delayed start to the rainy season.

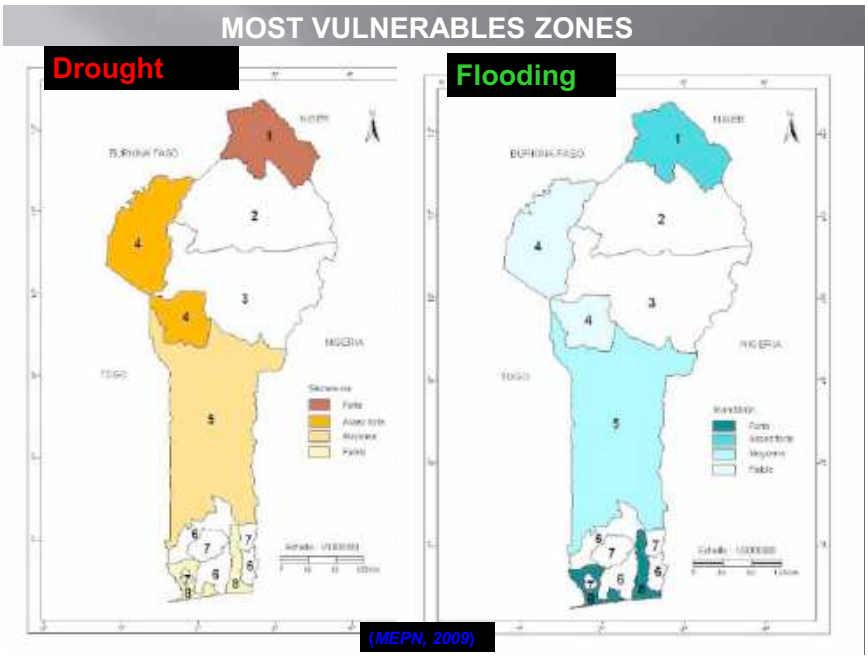
2.3.Climate Change and Variability Impact on Agriculture

Benin's agricultural sector is often perceived as having limited adaptive capacity, primarily due to structural challenges such as high levels of rural poverty, limited mechanization, and the reliance on traditional production methods. Additionally, it is limited due to natural constraints such as inadequate water and soil management practices resulting in soil degradation, further exacerbating the sector's vulnerability to climate change. If not effectively addressed through adaptive measures such as the cultivation of more resilient crops and improved irrigation systems, the occurrence of severe and consecutive droughts and floods could significantly impact food security in Benin. Projections indicate a potential reduction of water resources by up to 60% and food production by 6% by 2025.[19] Moreover, Benin faces notable levels of dry post-harvest losses, including 16.8% for maize, 13.6% for rice, and 10.5% for sorghum.[20] The agricultural sector is already grappling with climate-related challenges, with 60% of smallholder farmers citing climate-related challenges as a threat to their production. Localized droughts and floods are already impacting thousands of individuals in both the northern and southern regions, necessitating the urgent implementation of adaptive measures.

Benin is divided into eight agro-ecological zones based on climatic and agro-pedological parameters, cropping systems, population density, and plant cover. The four most vulnerable agro-ecological zones have received special attention under NAPA1. These include agro-ecological zone 1 (extreme north of Benin), zone 4 (North Donga West-Atacora zone), zone 5 (Central cotton zone) and zone 8 (fisheries zone). Shown on Map 4 below:

[19] Government of the Netherlands Climate Change Profile, Benin, 2018

[20] African Postharvest Losses Information System. Dry weight loss: Benin - All crops - All years.



Map 4: Level of exposure to drought and flood risks in Benin most vulnerable agro-ecological zones
Source : PANA1

It should be noted that the NAPA1 interventions covered nine villages in the nine targeted communes. Many other communes and villages in these four most vulnerable agro-ecological zones have not been able to benefit from these actions. While flooding is the primary risk in the south (agro-ecological zone 8), drought remains very pronounced in the north (agro-ecological zones 1 and 4) (Map 4). According to projections to 2025, all three agricultural sub-sectors (crop, livestock and fisheries production) have varying degrees of vulnerablity to climate change.

It is highly probable that climatic changes will result in degraded agricultural production, as well as decreased and greater fluctuating agricultural yields. The national food situation runs a high risk of further deterioration, posing long-term threats to the progress accomplished so far in the agricultural area and to the achievement of the Millennium Development Goals (MDGs) in Benin.

Food insecurity has increased over the past years. According to cadre harmonisé projections, an estimated 547,422 Beninese faced crisis or emergency levels of food insecurity (Integrated Food Security Phase Classification (IPC) phase 3 or 4) between March and May 2023, and 1,870,025 were experiencing food security stress (IPC phase 2). This represents a sharp deterioration compared to the same period in 2019 when an estimated 31,606 people were in IPC phase 3 and 1,323,799 were in IPC phase 2. In 2021, 82.6% of households were unable to afford a healthy diet. Meanwhile, stunting levels are above the average for West Africa: 31.3 percent of children were stunted in 2020 and 5% suffered from wasting.[21]

2.4.Climate Change and Variability Impact on Women

Women in Benin are disproportionately affected by climate change compared to men, driven by a complex interplay of social, economic, and cultural factors. Primarily, women shoulder the responsibility for household food security, water, and fuel collection, rendering them more susceptible to climate-induced disruptions. Moreover, women encounter significant barriers to accessing land, financial resources, and decision-making power, constraining their capacity to adapt to climate change impacts effectively. Cultural norms and entrenched gender inequalities

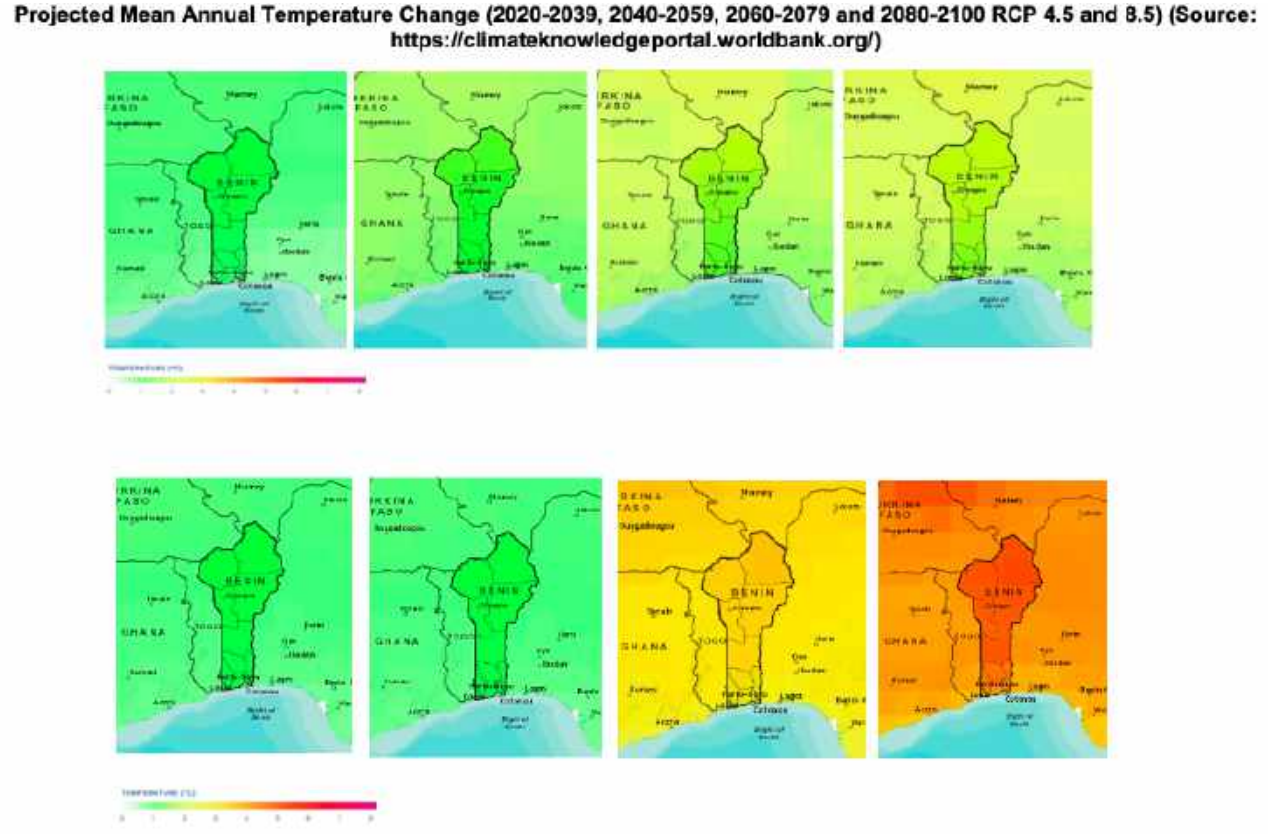
[21] Cadre harmonisé. 2023. Cadre Harmonisé d'identification des zones à risque et des populations en insécurité alimentaire et nutritionnelle au Sahel, en Afrique de l'Ouest et au Cameroun: Résultats de l'analyse de l'insécurité alimentaire et nutritionnelle aiguë courante en mars-mai 2023 et projetée en juin-août 2023

further compound these vulnerabilities, as women encounter obstacles to education, employment, and political participation, hindering their ability to address climate-related challenges. Consequently, women bear a disproportionate burden of climate change impacts in Benin, underscoring the critical need for gender-sensitive policies and interventions to address their unique vulnerabilities and empower them as pivotal agents of climate resilience.

2.5.Climate Change Projections

Using data from the CMIP5 multi model ensemble and time horizons 2020-2039, 2040-2059, 2060-2079 and 2080-2100 under both RCP 4.5 and 8.5, in Benin, mean annual temperatures are projected to rise by 1.0-2.0° C by the 2071-2100 period, averaging at 1ºC according to the RCP4.5. According to RCP 8.5 scenario, mean annual temperature will rise by 4.0°C in the same period with the highest rate of increase expected in the northern departments. These increased temperatures will intensify the effects of droughts as well as result in desiccation of soils, damage to forest ecosystems and reduced groundwater resources.

Projected Mean Annual Temperature Change (2020-2039, 2040-2059, 2060-2079 and 2080-2100 RCP 4.5 and 8.5) (Source: https://climateknowledgeportal.worldbank.org/)



Map 5: Projected Mean Annual Temperature Change (2020-2039, 2040-2059, 2060-2079 and 2080-2100 RCP 4.5 and 4.5

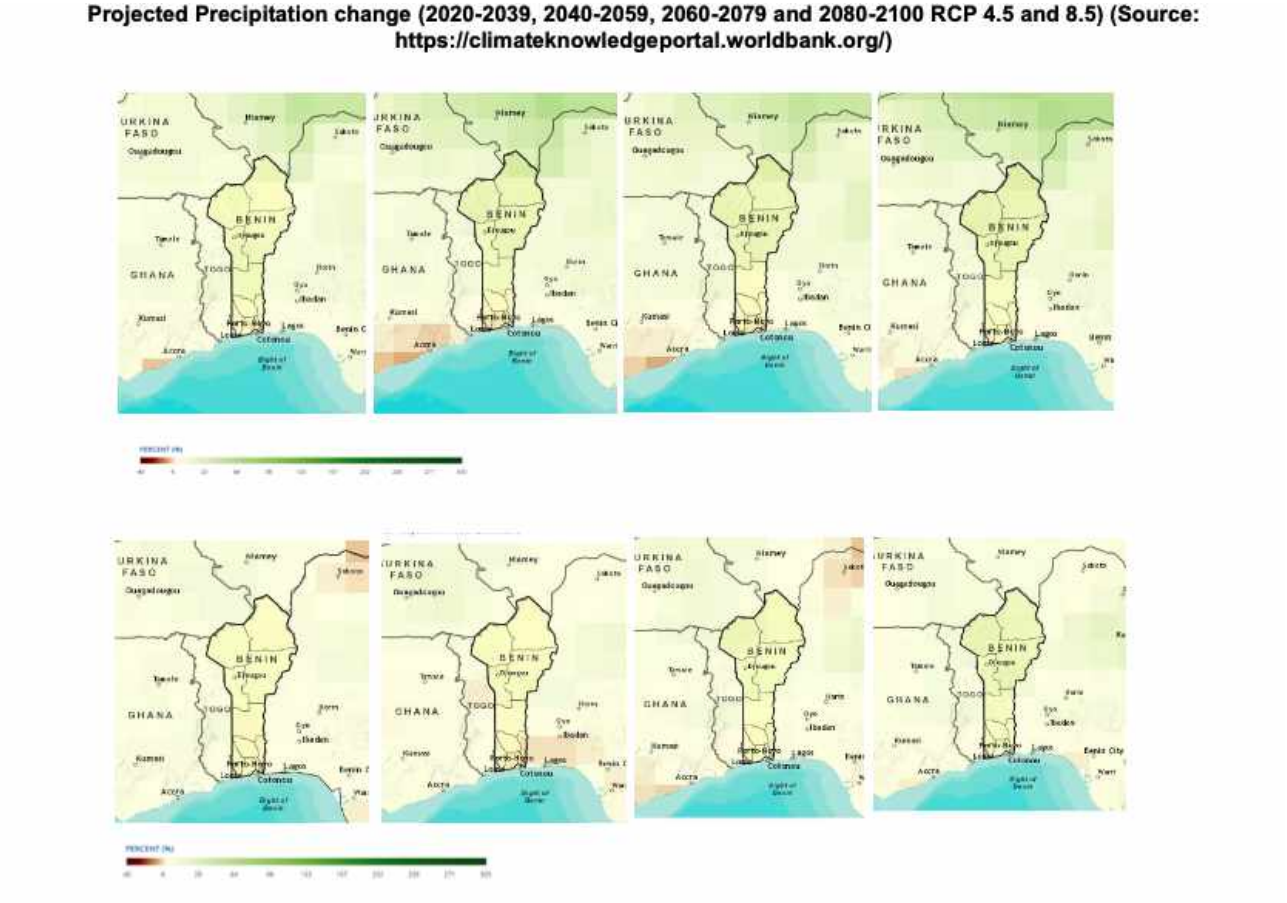
Source : Climateknowledgeportal.worldbank.org

Reinforcing the overall warming trend, projections indicate a significant increase in the number of hot days across various regions of Benin by 2100. Atacora, as well as Alibori, and Donga, expect the frequency of hot days to double, while in Mono, it is projected to rise from 3.61 to 29.44 under RCP 4.5. Under the more severe RCP 8.5 scenario, a nationwide average increase of 81% in hot days is anticipated by the end of the century, with the Guinean zone experiencing the highest relative rise. Moreover, there is a notable intensification of heat waves, with the Warm Spell Duration Index indicating a substantial increase in the duration of heat waves across various regions, particularly in Mono. Studies focusing on the Extreme Temperature Trends in the Beninese

Niger River Basin have also highlighted a significant warming trend, with projected temperature increases of about 0.45˚C per decade for both RCP 4.5 and RCP 8.5 scenarios.

While rainfall projections in Benin have better consistency seasonally than annually, both RCP scenarios suggest a slight increase in total precipitation levels. The Sudanian zone is expected to experience the highest increases, up to +9% and 10%, while marginal increases are anticipated in the southern regions. However, there is potential for more irregular rainfall patterns, with an increase in the magnitude of extreme rainfall events, particularly in northern departments such as Atacora and Alibori, where these changes are more pronounced and consistent.

Projected Precipitation change (2020-2039, 2040-2059, 2060-2079 and 2080-2100 RCP 4.5 and 8.5) (Source: https://climateknowledgeportal.worldbank.org/)



Map 6: Projected Precipitation Change (2020-2039, 2040-2059, 2060-2079 and 2080-2100 RCP 4.5 and 8.5)
Source : Climateknowledgeportal.worldbank.org

Projections indicate changes in infra-annual rainfall variability, with anticipated decreases during January-March and April-June, and increases in rainfall expected during July-September and October-December. These patterns suggest a delayed onset of the rainy season. Coupled with a potentially longer dry season and shorter rainy seasons. There may be more intense rainfall events, leading to an uptick in the frequency and severity of floods. Additionally, these climate impacts are reported to result in reduced agricultural productivity, damage to public infrastructure, and diminished availability of natural resources and ecosystem services.

Table 1: Summary of key climate variable per Atacora and Mono Department

Index	RCP 4.5				RCP 8.5			
	2020-2039	2040-2059	2060-2079	2080-2100	2020-2039	2040-2059	2060-2079	2080-2100
Mean Temperature	Mean temperature: 28.68	Mean temperature: 29.21	Mean temperature 29.60	Mean temperature: 29.83	Mean temperature: 28.77	Mean temperature: 29.74	Mean temperature: 29.99	Mean temperature: 32.06
Mean Temperature change (°C)	Atacora: 1.08 Mono: 0.85	Atacora: 1.61 Mono: 1.32	Atacora: 2.08 Mono: 1.66	Atacora: 2.21 Mono: 1.85	Atacora: 1.09 Mono: 0.95	Atacora: 2.05 Mono: 1.83	Atacora: 3.29 Mono: 2.89	Atacora: 4.29 Mono: 3.87
	Higher increases in temperatures are expected in the Sudanian zone of 2.2ºC. The Guinean zone exhibited the least marked temperature increment of 1.8 ºC to 2100				Higher increases in temperatures are expected in the Sudanian zone of 4.3ºC. The Guinean zone exhibited the least marked temperature increment of 3.8 ºC to 2100			
Hot days (TMax>35° C)	Frequency of hot days is expected to increase by 54% on average nationwide by 2100. In the Atacora department the number of hot days is expected to double by 2100. In Mono, the number of hot days is expected to increase from 3.61 to 29.44. The highest relative increase is expected in the Guinean zone.				Frequency of hot days is expected to increase by 81% on average nationwide by 2100. In the Atacora department the number of hot days is expected to triple by 2100. In Mono, the number of hot days is expected to reach similar levels of those of Northern departments. The highest relative increase is expected in the Guinean zone.			
Warm Spell Duration Index	Increases from approx. 70 days to 160 days in the Atacora department. It increases from 104.17 to 241.34 in Mono with similar trends across the Guinean zone.				Increases from approx. 85-90 days to 256-274 days in the Atacora department. It increases from 138 to 324.02 in Mono with similar trends across the Guinean zone.			
Precipitation Change (%)	Increase of 5.35% in Atacora. Lowest in Mono of 2.50%	Highest increase of 10.06% in Atacora. Decrease in Mono by 2.38%	Increase of 8.91% Atacora. Slight increase of 2.38% in Mono	Highest Increase of 11.25% in Atacora. Slight increase of 3.76% in Mono	Increase of 4.41% in Atacora. Increase of 2.46% in Mono	Increase of 3.92% of total precipitation in Atacora. Slight increase in Mono with 2.82%	Increase of 7.51% in Atacora. Slight Increase of 0.45% in Mono	Increase of 8.60% in, Atacora. Increases of 4.99% in Mono
	Overall increases in total precipitation expected in the Sudanian zone. More irregular and weaker trends in the Guinean zone.				Overall increases in total precipitation expected in the Sudanian zone. Sudano-Guinean and Guinean zones present more irregular and weaker trends.			
Consecutive dry days	Slight decreases in the Sudanian zone (-3/4 days to 2100). Higher decreases in the Guinean zone (-20/18 days to 2100).				Slight decreases in the Sudanian zone (-1/2 days to 2100). Higher decreases in the Guinean zone (-8/10 days to 2100).			
Consecutive wet days	Decreases in the northwestern part of Benin (Atacora) from -9 in 2020-2039 to -13 to 2100. A slighter decrease is also expected in the Guinean zone (-5 days to 2100)				Overall decrease in consecutive wet days in all Benin from 37 to 29 days. Highest decreases in Guinean zone (Mono from -9 to -39 days to 2100). Northwestern part of Benin (Atacora) from -16 in 2020-2039 to -24 to 2100			
Average Increase of Largest 1-day Precipitation	Atacora:6.55mm Mono: -3.01mm	Atacora:8.24mm Mono: -3.77mm	Atacora:14.29mm Mono: -2.00mm	Atacora:8.05mm Mono: -4.69mm	Atacora:9.72mm Mono: -7.76mm	Atacora:14.79mm Mono: -3.26mm	Atacora:22.59mm Mono: 14.55mm	Atacora:34.40mm Mono: 22.35mm
	Overall increases in the Sudanian zone with trends suggesting a decrease as moving South toward the Guinean zone.				Overall increases in the Sudanian zone with trends suggesting a first a decrease as moving South toward the Guinean zone and an overall increase (whole country) toward the second half of the century.			

Source: Climateknowledgeportal.worldbank.org

Figure 5 shows the umbrothermal diagram for the Commune of Bopa. According to BAGNOULS and GAUSSEN (1953), a dry month is one in which rainfall is less than twice the average monthly temperature (P<2T). Utilizing these guidelines, the figure below indicate the Commune of Bopa is characterized by a subequatorial climate with four seasons: a long dry season (from November to March), a long rainy season (from March to July), a short dry season (July to August) and a short rainy season (September to November).

The annual rainfall in the commune varies between 54.2mm and 1204.7mm of water. The months of June and September are generally the wettest in the year with respective averages of 173.66mm and 119.01mm of rainfall. From December to March, there is a harmattan or continental trade wind, which is characterized as dry and hot wind.

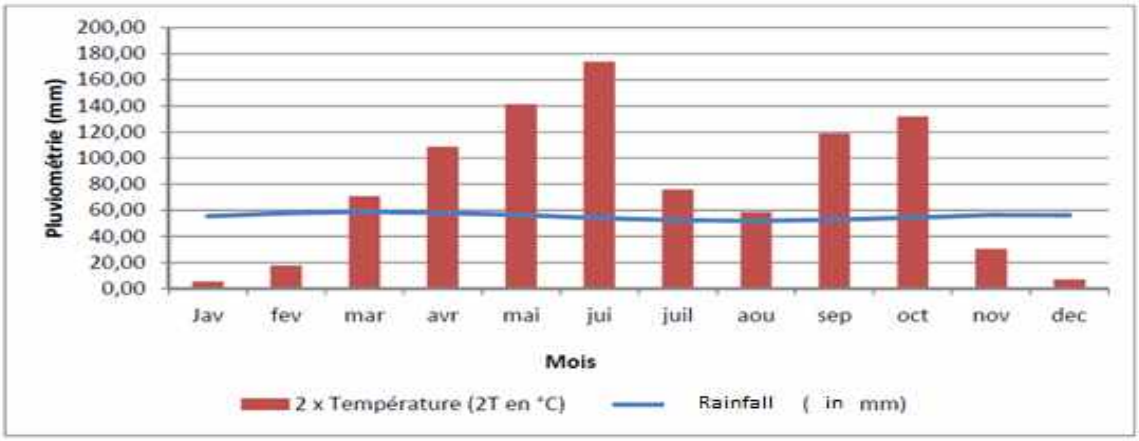


Figure 5 : Umbrothermal Diagram of the commune of Bopa
Source: ASECNA data, 2015.

The climate of Boukombe is tropical Sudanian with two seasons: the rainy season (April to October), dominated by monsoon flows, and the dry season (November to March), marked during the early months by the harmattan. Figure 6 shows the average annual rainfall during the standard climatological period 1981-2010 is 1053.6 mm. August and September are the wettest months (more than 40% of annual rainfall) and March and April are the hottest months.

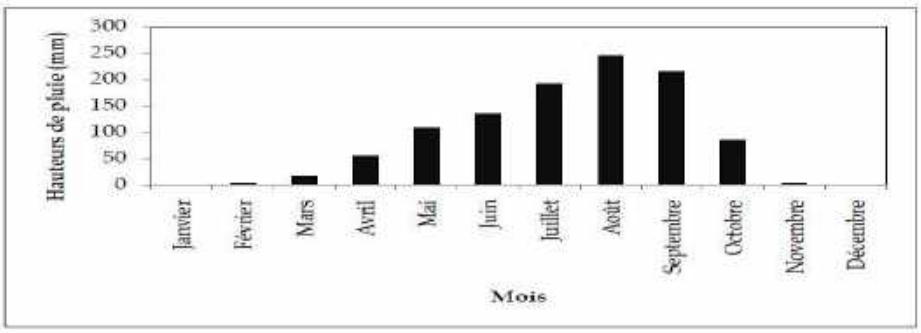


Figure 6 : Rainfall pattern in the Commune of Boukombe (1981-2010).
Source: ASECNA data, 2015

The project areas in the departments of Atacora and Mono, particularly Atacora in the north, face significant exposure to various hazards, both climate-related and non-climate-related.

The table below provides a summary of the hazards, including climate-related issues like heat stress, as well as non-climate-related ones such as earthquakes and tsunamis, for the two project departments in Benin. Atacora is particularly exposed to potential impacts from hazards like heat stress and flooding. While Mono is more vulnerable to flooding. Additionally, both districts face

high exposure to wildfires, often caused by agricultural practices like slash-and-burn and deforestation, as well as exacerbated by droughts.

Table 2: Likelihood of Hazards in Atacora and Mono

	Atacora	**Mono**
Hazards	**Likelihood**	
River Floods	High	High
Urban Floods	Low	High
Water Scarcity	High	Very Low
Extreme Heat	High	Medium
Wildfire	High	High
Earthquake	Very Low	Very Low
Landslide	Low	Very Low
Coastal Flooding	N/A	Medium

Source: ThinkHazard

3. Justification for project localities

The programs developed by Caritas Benin seeks to benefit vulnerable populations in communes identified as most susceptible to the impact of climate change in Benin. The project intends to target agro-ecological zones 4 and 8, in thethe communes of Boukombe and Bopa.

Stakeholder and community consultation missions were organized in the arrondissements of Manta and Natta in the commune of Boukombe and in the arrondissements of Badazoui and Yègodoé in the commune of Bopa, in order to better understand the impactof climate change on community livelihoods.

There are several reasons for the selection of the arrondissements. First, the two targeted communes have not previously been included in Caritas Benin projects for building community resilience to climate change that are offered in the region.

From a demographic point of view, these arrondissements are among the most populated rural arrondissements within the targeted communes (Manta 13,633 inhabitants, Natta 11,239 inhabitants, Badazoui 16,163 inhabitants, Yègodoé 15,237 inhabitants) and are comprised of a greater number of women than men.

Moreover, agriculture is the dominant economic activity in these localities and is the main source of income generation. It employs about 85% of the active population (Boukombe) and 99.5% of the agricultural households that work in the vegetable sub-sector. In the specific case of Bopa, the two selected arrondissements are all located in the black soil zone, which is very favorable to agriculture, but due to the negative effects of climate change, a decline in agricultural yields has been noted. In the commune of Boukombe, food production I substandard.

In Bopa, the main climatic risks are rising temperatures, flooding, pockets of drought, and violent winds. The effects of these risks are felt in the agricultural, livestock, fishing and agri-food processing sectors. The climate change negatively impacts crop yield and financial profitability,

influences livestock mortality. In order to cope with the effects of climate change, the populations have developed a number of local adaptation strategies:

- Modification of sowing periods (earlier than expected or later) ;
- Conversion to alternative crops such as rice for areas that are generally flooded, and Agbodji and soybeans, which are more resistant to flooding as long as plants are not completely submerged;
- Use of indicators such as the flight of the hawk or the leafing out of the iroko to identify the right time for harvesting or sowing, with an accuracy that seems to diminish with time;
- Installation of crops according to toposequences;
- Use of improved seed varieties, particularly maize seed;
- Conversion from agriculture to other income generating activities such as trade and resale.

The main climatic risks facing the commune of Boukombe are rising temperatures, drought,, and high winds. In addition to these risks, there is the delay of rains, their sudden arrival, and their abrupt cessation. These risks impact certain sectors of activity in the commune, such as agriculture, livestock, fishing and food processing.

In the commune of Bopa, the indicators used to monitor climate hazards on the activities of the different sectors are measured, among other things, by degree of impact on: financial profitability; crop yields; mortality of different types of livestock; state of water resources both assessing the rate of water recession and speed in which is it receeding; and level of famine.

Faced with these difficulties, the Bopa populations have developed some adaptation strategies, including:

- Adoption of more climate resilient seeds such as maize (EVTT 90, EVTT 97, SYNEE 2000);
- Conversion to the production of drought-resistant crops such as fonio, a type of cereal grain that has been cultivated for thousands of years in West Africa;
- Creation of market gardening wells reinforced by the AMSANA project;
- Increasing the distance to search for water;
- Construction of bunds for irrigated crops such as rice;
- Composting;
- Improved water management techniques for livestock;
- Use of bark in livestock rations to combat certain diseases.

The table of climatic risks identified by arrondissement and the table of the vulnerability matrix (Tables 3, 4 and 5) are presented below.

Table 3: Climate risks identified by arrondissement of project area

Sector	**Identified climate hazards**			
	hazard 1	**hazard 2**	**hazard 3**	**hazard 4**
Commune of Bopa				
Badazouin	Intense rain/ Flooding	Late rain/ Drought pocket	Excessive heat/ Heat wave	Strong winds/ Increase in frequency and severity of strong winds
Yègodoé	Intense rain/ Flooding	Late rain/ Drought pocket	Excessive heat/ Heat wave	Strong winds/ Increase in frequency and severity of strong winds

Commune of Boukombe				
Manta	Rarity of rain/drought	Late rain/drought pocket	Excessive heat/heat wave	Strong winds/ Increased frequency and severity of strong winds
Natta	Rarity of rain/drought	Late rain/drought pocket	Excessive heat/heat wave	Strong winds/ Increased frequency and severity of strong winds

Source: Field surveys, March 2021

Table 4: Climate Vulnerability matrix in the Commune of Bopa

Climate variable	Hazard	Sensitivity element	Impacts
Flooding	Increase in the frequency of floods, which occur mainly from April onwards (over the past ten years flooding occurred almost annually, compared to a total of three times over the past 30 years) This indicates a trend of increased frequency or intensity of these events within a relatively short timeframe, suggesting potential changes in climatic conditions or environmental factors.	Crop production (priority crops: maize, soya, beans, selected palms) other crops: sugar cane, tomatoes and Processing activities of cassava into gari, maize into flour and patties, palm fruit into palm oil, soap and liquor (sodabi), soybean into milk and cheese etc.	
		● Hydro-morphic soils (67% of the soils of the commune) ● Position of farms (e.g. in depressions) ● Soil waterlogging due to excess water from artesian wells ● Delay in the availability of improved seeds (in the case of corn) ● Absence of seed producers in the commune	● Crop destruction estimated at 75% on average. ● Maize: destruction of fields and loss of about 100% in case of flooding (300,000 to 600,000 CFA for good years against 0 for bad years). ● Soybeans: destruction of soybean fields and 100% loss when intense rains occur at harvest time. ● Crop destruction Loss assessment has increased between40%-100% loss 30 years ago, to 60%-100% loss (for the past 10 years) for crops such as corn. ● Limited availability of soybean raw material for processing cheese and milk. ● Low availability of raw materials from agricultural production (maize, cassava, soybean, oil palm) for processing activities. ● Increase in food insecurity.
		Animal production (poultry, rabbits, goats, pigs and bees)	
			● Increased prevalence of avian diseases. ● Increased mortality - between 50%-100%. ● Restricted mobility and increased stress. ● Low availability of feed due to destruction of crop production by floods and for feed production. ● Limited availability of cassava processing residues for pig feed due to low yields in cassava fields. ● Low availability of feed due to flooding and feed production. ● Increased production costs due to the purchase of feed for mixed breed pigs. ● Proliferation of pathogens leading to the death of livestock. ● Mortality rates (poultry and goats) and epidemics. ● Proliferation of harmful germs.
	Increased intense runoff		
		● Flooding watercourse with sediment and branches of acadja. ● Destruction of mangrove plantations. ● Use of prohibited fishing gear	● Decrease in the depth of Lake Ahémé due to silting. ● Destruction of spawning areas. ● Decrease in fish catch estimated at 66- 75%. Over the past fifteen years, a night of fishing has brought in 200 to 1000 FCFA compared to 3000-4000 FCFA in the 1980s)
		Crop production (priority crops: maize, soybean, bean, selected palm) other crops: sugar cane, tomato, etc.	

Climate variable	Hazard	Sensitivity element	Impacts
Late rains(30 years ago, the first rains began in February; over the last 10 years, rains are beginning in the end of March, and sometimes later)	Increased duration of pockets of drought (today drought durationfrom 2 to 4 weeks) / Random modification of the rainy season	The endogenous methods of seasonal forecasting no longer make it possible to predict the seasons (this is the case, for example, of the "Gangan" and "Holih" birds that announce the beginning and end of the rains, which 30 years ago enabled farmers to know when to sow and harvest. Similarly, despite the traditional practice to make sacrifices to deities to attract the rains are no longer effective.	● Random modification of the agricultural calendar (in the past, maize was sown around February 15th and harvested in April; today, sowing is taking place after March. ● Increased water stress on crops. ● Even rice (April to June), adopted because of the intense rains in April, is affected by pockets of drought. ● Proliferation of invasive plants ("azuimanh" in local language) that affect the corn crop. ● Decrease in crop yield.
Increased temperature	Increased temperature/Heat waves (frequency and severity of excessive heat)	Crop production (corn, rice, soybeans, etc.)	
			● Increased frequency of crop watering. ● Decreased productivity of off-season crops - estimated at 40%.
		Animal production (poultry, goats and pigs, fry)	
			● High mortality after farrowing (rabbit and poultry). ● Goat mortality estimated at 70%. ● Increased stress in pigs and rabbits. ● High mortality of pigs. ● Decreased productivity of fish.
Strong winds	Increased frequency and severity of strong winds	Crop production	
		● Slash-and-burn farming. ● Driven hunt ● Straw roofing of houses.	● Increased frequency of fires. ● Destruction of homes and harvested products.

Source: Field survey data, March 2021

Table 5 : Climate vulnerability matrix in the Commune of Boukombe

Climate variable	Hazard	Sensitivity element	Impacts
Decreased rainfall	Seasonal drought Decreasing precipitation with increasing need)	On water resources	
		Delayed onset of rains, scarcity and randomness of rains prevent farmers cannot predict when to to plant.	● Compared to the 1980s, several streams have dried up, the water table has decreased. ● Close to the the rivers was flush (about 1 m from the ground) and today is decreased to about 60 m. ● Partial filling and rapid drying up of dams (e.g. Dipoko-Fontri dam) ● Lowering of the static groundwater level. ● Increased distance required to fetch water, increasing the demands on women who have to wake up earlier and walk further(today it is estimated to be four times the distance) ● Very low water availability and poor water quality (unclean water) for domestic and socio-economic uses including schools.
		On crop production Priority crops in Manta: corn, fonio, sorghum, rice, market gardening Priority crops in Natta: sorghum, maize, fonio, soybean, market gardening and processing	
		Decreased precipitation and reliability of rains impact on crop yields.	● Decrease in the production of sorghum whose robust stems are used to fence the market gardening farms against the cattle. ● The sowing of fonio, which used to be done in April (because of the first rains), is now done in June (and by "chance" – without understanding of precipitation patterns). ● Proliferation of worms and invasive plants (striga) that affect crops. ● Decrease in maize production estimated at 50-00%. (0 to 3 bags/0.25 ha comparedto 6 bags/0.25 ha previously). ● Decline in soybean production estimated at 50- 90% (1 to 5 bags/ha compared to 8 bags/ha previously). ● Low availability of resources for compost production and manufacturing. ● Limited availability of water resources for watering vegetable crops. ● Complete cessation of market gardening activities since 2016, whereas 10 years ago market gardening was the norm. ● Low availability of raw materials (fonio, rice, cassava) for agriculture processing activities. ● Decline in fonio processing capacity, estimated at 66.6% (during times of water, 6 bags are processed satisfactorily; when there is insufficient water, as has been the case in recent years, only 2 bags are processed, and this is with an unsatisfactory rate of cleanliness).

Climate variable	Hazard	Sensitivity element	Impacts
		Animal production (e.g. poultry, goats, cattle)	
		● Decreased precipitation. ● Distant watering holes.	● Limited availability of water resources for livestock watering. ● Scarcity of fodder causes difficulties in feeding livestock. ● Difficulty in feeding and watering leads to a gradual loss of interest in livestock production. ● Conflicts of water and land use due to the fact that people and herders share the land (DICON1). ● Increased animal mortality rate. ● Decrease laying capacity of guinea fowl (which represent 75% of the poultry raised and poultry occupies 80% of the farm). ● Increase in guinea fowl mortality (estimated at 80-100%)
			On fisheries production
		● Pesticide use leach into runoff water that is discharged into water points and streams harmingaquatic life.	● Decline in fish production over the past ten years compared to the 1980s and 1990s when fishing was abundant even near Boukombe. ● Fishing is disappearing in the Commune ● Low availability of water resources to maintain fish ponds in water ● Increased production costs due to the purchase of water for fish farming ● Increase in the mortality rate of fish ● Decline or even progressive disappearance of fishing activity.
	Delayed onset of rains Increase length of pockets of drought (30 years ago, at the beginning of the season, pockets of drought lasting no more than 2 weeks, as opposed to now lasting at least 2 to 3 weeks at the beginning of the		Crop production, priority crop
		● Increased length of pockets of drought (the past ten years have experienced pockets of drought for two weeks during the rainiest month of August, whereas thirty years ago, the month of August did not record any pockets of drought. ● Shift of the beginning of the rainy season to June and the peak of the season to September ● Shift of seasons : September becomes the rainiest month instead of August	● Annual decrease in yields of around 10% for various crops, the most affected of which are corn, sorghum, fonio, rice, legumes (cowpea, soybeans and pigeon peas). ● Increased mortality of African locust bean, shea and palmyra trees (which die on their own) ● The sowing of fonio, previously done in April based on the first rains, is now delayed till June (and by "chance" – without understanding of precipitation patterns). ● Impossibility of growing vegetables after January because surface waters dry up, resulting in a 60% loss ● Approximately 84% loss for rice crop yield (before 6 bags/0.25 ha and today 1.5 bags/0.25 ha)
			On animal production
			● Disappearance of several avian species, including oxpeckers, crows and birds that herald the end of the rainy season and are used endogenously for seasonal forecasting

Climate variable	Hazard	Sensitivity element	Impacts
	season for the last ten years).	● Shift of the beginning of the rainy season (about 30 years ago, the beginning of the season was in April or even early May; for the past ten years, the rains have not settled until June, the month of planting) ● Precipitation is unpredictable, decreasing agricultural planning ability.	
Temperature	Increase in the frequency and severity of excessive heat (heat wave)		● High mortality of poultry, especially guinea fowl, goats, cattle. ● Poultry are left to roam to feed and thus subject to excessive heat.
Strong winds	Increasing heavy winds compared to 30 years ago.	High winds/ Increase in frequency and severity of high winds (Previously, strong winds were observed at the beginning of the season, allowing mangoes and shea nuts to fall and facilitating harvesting) Strong winds/ Increase in the frequency and severity of strong winds (increasing over the past ten years, compared to thirty years ago. Previously winds of this category were hardly noticeable except at the beginning of the rainy season to announce the arrival of the rains.	● More pronounced uprooting and destruction of crops (e.g. Sorghum). ● The wind of the past was not as destructive as today's wind, which makes unripe shea and African locust bean fall, thus hindering harvesting.

Source: Field survey data, March 2021.

These data are supported by the results established by the PANA 1 project in its vulnerability assessment report in the commune of Bopa and the results of the vulnerability study conducted under the Benin Green Climate Fund Readiness Project (BCP-GCF, 2017).

3.1.Future climate variability in the project areas

In general, the climate projections carried out under the RCP 2.6, RCP 4.5 and RCP 8.5 scenarios at the 2030, 2050, 2070 and 2080 horizons show a mixed evolution of precipitation and an increasing trend in temperatures in the Bopa and Boukombe communes' region.

With regard to rainfall, according to the outputs of the CSIRO-mk3.6.0 model used in the context of the work to prepare Benin's Third National Communication on climate change, in the commune of Bopa, rainfall in the wettest months would remain practically unchanged until 2080, all climate scenarios taken together; rainfall in the wettest months would be significantly lower than the 1981-2010 climate normal, particularly during the second rainy season. (see Figure 7).

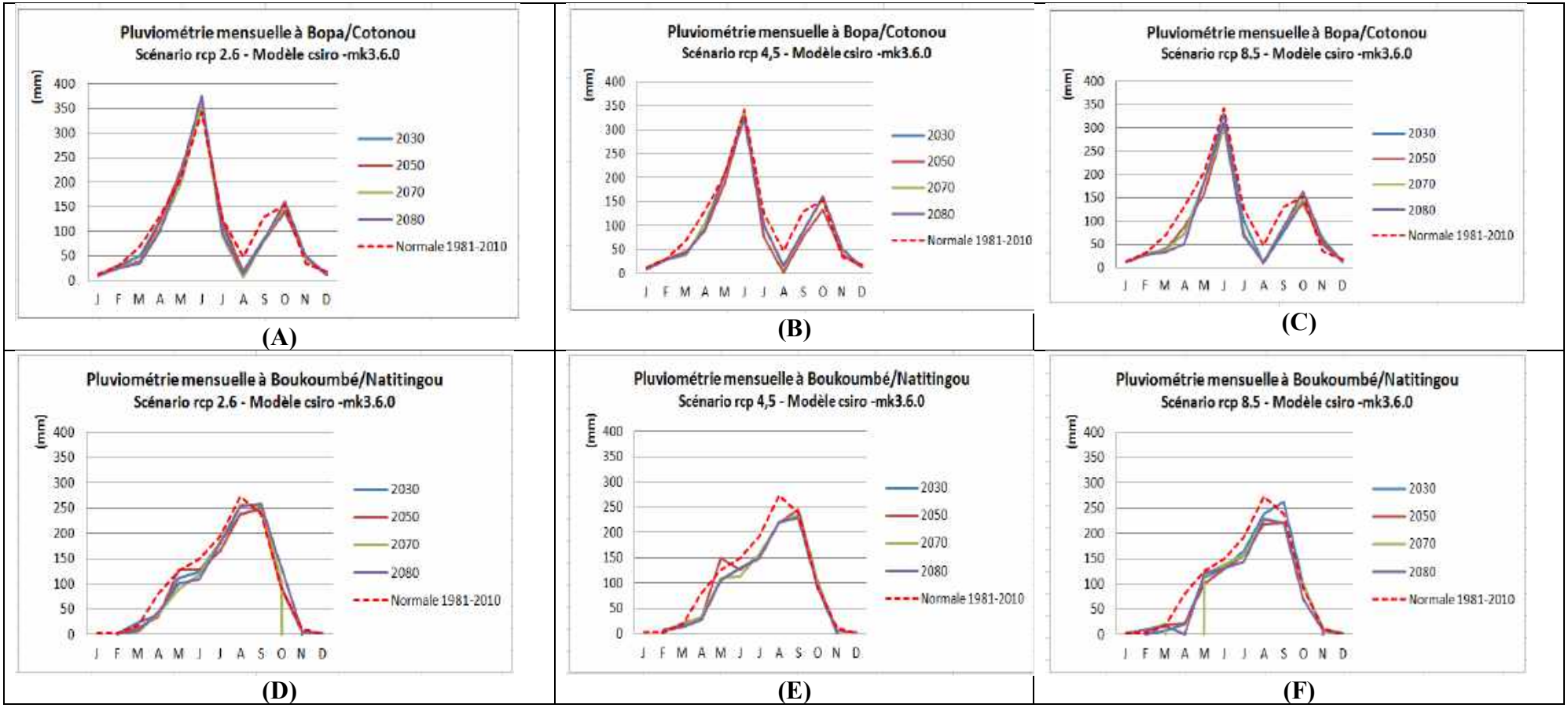


Figure 7: Monthly rainfall of the climate normal (1981-2010) and rainfall projection according to the CSIRO Mk3 6.0 climate model under the RCP.2.6, RCP.4.5 and RCP.8.5 scenarios in the regions of Bopa and Boukombe
Source : Synoptic stations of Cotonou airport and Natitingou

Concerning temperatures, the upward trend observed during the past decades will continue in the future, especially for monthly maximum and minimum temperatures as shown in Figures 8 and 9. Deviations from normal, which hardly reach 2° in the optimistic scenario RCP 2.6, could exceed 5°C during the months of March-April in Boukombe in the pessimistic scenario RCP 8.5 (Figures 8 and 9).

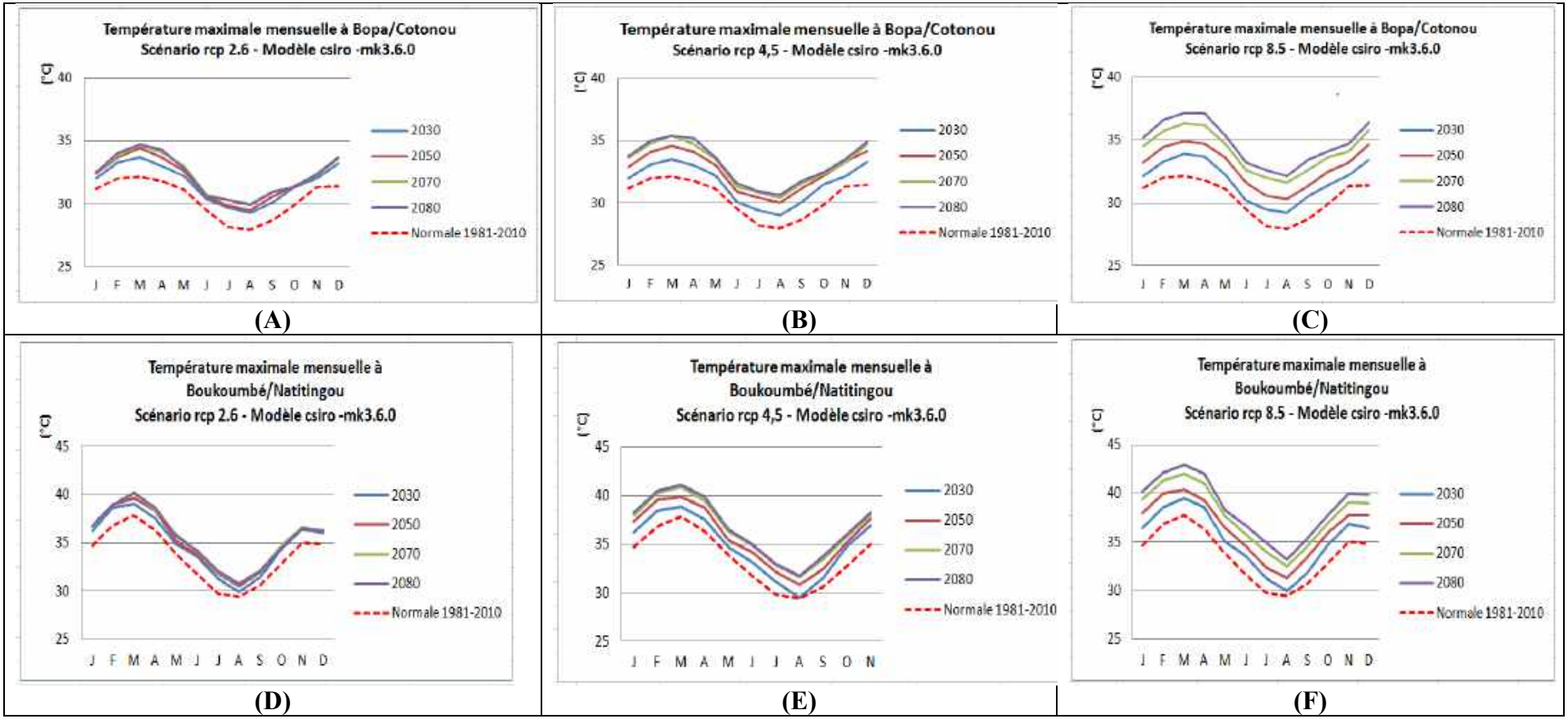


Figure 8: Monthly maximum temperature of the climate normal (1981-2010) and projection of monthly maximum temperatures according to the CSIRO Mk3 6.0 climate model under the RCP.2.6, RCP.4.5 and RCP.8.5 scenarios in the Bopa and Boukombe regions
Source : Cotonou airport and Natitingou synoptic stations

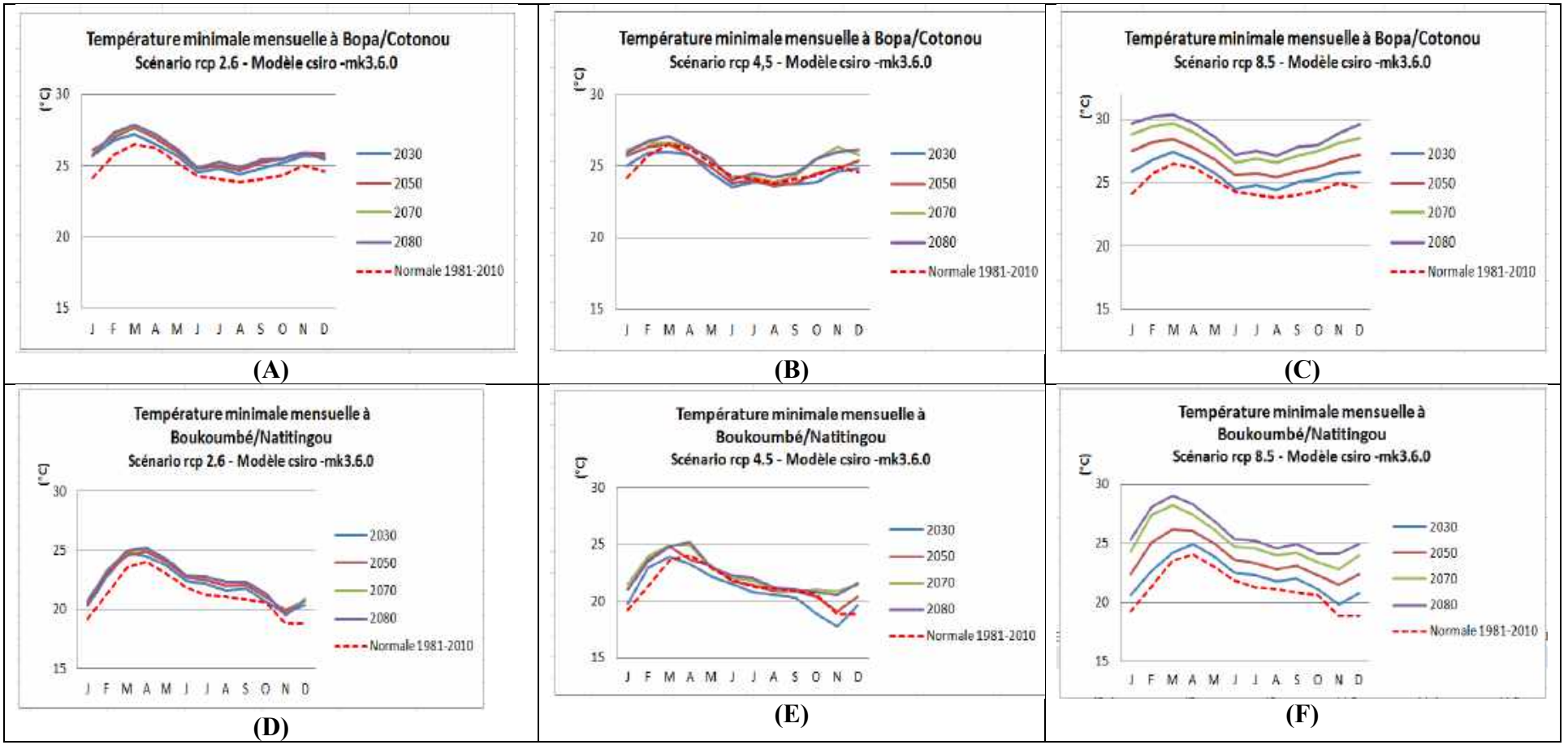


Figure 9: Monthly minimum temperature of the climate normal (1981-2010) and projection of monthly minimum temperatures according to the CSIRO Mk3 6.0 climate model under the RCP.2.6, RCP.4.5 and RCP.8.5 scenarios in the regions of Bopa and Boukombe

Source : Synoptic stations of Cotonou airport and Natitingou

The analysis of future climatic variability thus reveals (i) a tendency to maintain rainfall in the wettest months and a rainfall deficit in the driest months in the Commune of Bopa, (ii) a generalized rainfall deficit in the first phase of the agricultural season in Boukombe, and (iii) an increase in minimum and maximum temperatures in the two Communes.

The downward trend in rainfall in the months that are usually less rainy, particularly those of the short rainy season, will make it increasingly difficult to meet the water needs of crops in the second agricultural season in Bopa. In Boukombe, the rainfall deficit will affect the entire active vegetation phase of the crops and will require adaptive measures for the success of the commune's only agricultural season. However, it should be noted that according to a recent analysis of rainfall in Boukombe, the rainfall deficit would be relatively low by 2050 on an annual scale and under the RCP 4.5 scenario, not exceeding 3% (Akponipkè et al., 2020)[22].

The persistence of the rising temperature trend in the two Communes will lead to an increase in potential evapotranspiration and difficulties in supplying water to the population, livestock and crops.

3.2.Vulnerability analysis and adaptation initiatives in the project areas

According to the perception of the people interviewed during consultation, several factors make Beninese communities more vulnerable. These include poverty, which prevents them from having access to resources and opportunities to prepare for or adequately deal with the occurrence of a climate related disaster; food insecurity, which is related to problems of food availability and accessibility; and environmental degradation, deforestation and irrational land use, which create precarious conditions that aggravate the effects of disasters. In addition, the population at risk lacks education and access to leaving them unaware of good practices for survival in the event of climate hazards and disasters.

A gender analysis, including gender impact and climate change was conducted and highlights that women and young people constitute the most vulnerable social categories in addition to children under the age of five in relation to the harmful and perverse effects of extreme weather and climate change.

The populations of the project localities have varying degrees of vulnerability to the climatic and environmental risks described above, with increasing potential impact on economic activities of vulnerable groups due to preparedness, living conditions and awareness. According to the sectoral documents consulted (Plan de Development Communal, Plan de Contingence Communal) and the people interviewed in both Boukombe and Bopa, livelihoods (agriculture, livestock, fishing), food security, and water resources are the most at-risk, and the social groups most affected are small-scale farmers, including women, youth, minority groups, livestock breeders, and fishermen. The impacts of climate risks further affects them by soaring food prices, food insecurity, malnutrition, undernourishment, reduced incomes and increased poverty.

In both Boukombe and Bopa, the groupsmost vulnerable to climate change remain similar as highlighted by NAPA (2008) and NAP (2022). Indeed, in the northern agro-ecological zones, watersheds, food crops, water resources, small-scale farmers, herders, emerging market gardeners and farmers, and fishermen are highly exposed to climate risks. The same is true in the southern agro-ecological zones for food crops, land, water resources, human health, biodiversity, small-scale farmers, fishermen and pastoralists.[23] This means that climate change

[22]Akponikpè P.B.I., P. Tovihoudji, B. Lokonon, J. Amègnaglo, R. Yégbèmey et E. Kpadonou (2020). Etude de vulnérabilité sectorielle face aux changements climatiques au Bénin : Extension au Pôle de Développement Agricole III (PDA III, Atacora-Ouest). Secteur : Agriculture. Rapport Final. Projet d'Appui Scientifique aux processus de Plans Nationaux d'Adaptation (PAS-PNA). GIZ – MCVDD, Cotonou. 83 p.

[23]MEPN (2008). Programme d'action nationale d'Adaptation aux changements climatiques du Bénin (PANA-Bénin), Cotonou.

is a permanent threat to the development of Benin's communes. Thus, reducing the impacts of climate change on vulnerable livelihoods requires that appropriate adaptation techniques be developed to ensure sufficient agricultural production to guarantee food security in the most exposed localities.

The main food crops grown in the communes of Bopa and Boukombe are cereals, pulses, tubers and root crops, and market garden crops. In recent years, the relative balance of production or annual sown areas has been broken in favor of more resilient food crops or those benefiting from adaptation measures. In Bopa, for example, recurrent floods that destroy the efforts of producers in the rice-growing basins have led to a drastic reduction in sowing, or even to the abandonment of the crop (Development Plan 2018-2022).

In the commune of Boukombe, rice production, which benefits from a few rudimentary developments with water control, as part of the endogenous adaptation strategies developed by local communities, has supplanted traditional cereals as of the 2013-2014 season (DDAEP/Atacora, 2021). Sorghum, which is more drought tolerant than maize, has seen a steady increase in production since 2011. Fonio, which is well adapted to the ecology of the region, is maintained with sustained production levels.

According to projections to 2025, all three agricultural sub-sectors (crop, livestock and fisheries production) are vulnerable to climate change, but to varying degrees.

The government, with support from the Global Environment Facility (GEF) and UNDP, developed and implemented the NAPA1 project (2010-2014), whose interventions covered nine villages in nine communes. This project aimed to strengthen the capacities of farming communities to adapt to climate change in the four most vulnerable agro-ecological zones (1, 4, 5, 8) of Benin has achieved convincing results that have had a very positive impact on the livelihoods and strategies of vulnerable beneficiary groups.

In the commune of Bopa, the conclusive results obtained by the NAPA1 in the village of Sèhomi deserve to be duplicated in other villages with the same agroecological characteristics. Similarly, in this commune, Caritas Benin implemented a USAID-funded project to strengthen community resilience to the adverse effects of climate change (C-RAFT) between 2015 and 2017. This project focused more on community preparedness and risk awareness but did not focus on people's adaptation to the adverse effects of climate change. In Boukombe, Caritas Benin is building the capacities of rural women for their economic empowerment. It has also implemented for the 2017-2018 period, a Support Project for Food Security and Women's Empowerment (PASAAF) and a Project to Improve Food Security through the Promotion of Agroecology.

There is also the Sustainable Livelihoods Project (PMSD in french) supported by the Government of Benin, the Global Environment Facility (GEF) and the United Nations Development Program (UNDP) which has supported vulnerable local communities in the villages of Sèhomi and Agbodji in the Commune of Bopa for resilient agriculture and livelihoods, to make them less vulnerable to climate change. This support has enabled beneficiary farmers to adopt resilient production techniques, improve their agricultural yields and incomes. The majority of female beneficiaries have also seen a marked improvement in their incomes

We should also note the project Strengthening the Resilience of Food Security in the Face of Climate Change in the Commune of Houéyogbé (P2RSA2CH) (2023 – 2028) funded by the FNEC and whose promoter is the Organization for the Development of Basic Initiatives (ODIB). This project aims to contribute to improving the food security of vulnerable populations in the Commune of Houéyogbé (Department of Mono), in the face of the adverse

effects of climate change. Specifically, it will build the capacity of vulnerable communities on locally proven resilient practices and technologies for increasing production and incomes through targeted agricultural speculation. The major actions planned to contribute to reducing the vulnerability of these populations to the effects of climate change concern the training of producers on restoration techniques and sustainable land management, support for the dissemination and application of restoration and sustainable land management practices (extension plot and support for scale-up), training and monitoring of the application of adapted technical itineraries, support in kits of small equipment and resilient seeds (1 sprayer, biofertilizers, biopesticides, 1 complete composting kit, 10 kg of certified seeds and improving plants with high nutritional value), support for the development of Agricultural Business Clusters on soybeans and cassava as well as training on the processing and valorization of soybean and cassava derivatives.

The latest initiative is related to the project "Strengthening the Resilience of Mangroves in Southern Benin" implemented to increase the resilience of mangrove ecosystems and the agriculture, forestry and fisheries communities that depend on them to climate change and support the conservation of biodiversity and ecosystem services in mangrove landscapes of Ramsar Sites 1017 and 1018. This project is being implemented by the Ministry of Living Environment and Transport, in charge of sustainable development (MCVT) in partnership with the Food and Agriculture Organization (FAO). This project aims to preserve wetlands of international importance, Ramsar sites, in the south of Benin, covering the coast, the departments of Atlantique, Ouémé and Mono, as well as part of the departments of Couffo. These sites encompass all of Benin's mangrove ecosystems.Upon evaluation of these different initiatives, communities expressed the need to be supported to better adapt to the increasingly pronounced drought and flooding in these regions for a sustainable improvement in household food security. This is why the present project plans not only to reinforce the achievements of the previous interventions but also to accompany the vulnerable populations in the identification and adoption of local strategies of adaptation to climate change.

The local communities of the villages of Manta and Natta for the Commune of Boukombe and Badazouin and Yegodoe of the Commune of Bopa concerned by this initiative, whose promoter is Caritas-Benin, have not yet received substantial support in terms of reducing their vulnerability to the adverse effects of climate change. The successful experiences of these different initiatives that have been carried out in the areas surrounding the project and in particular with similar communities will be further capitalized for the benefit of vulnerable local communities in the sites of this project initiated by Caritas-Benin.

B. Project/Programme Objectives:

List the main objectives of the project/programme.

The main objective of the project is to improve food security, enhance the resilience of vulnerable communities and their agricultural production systems to the effects of climate change in the communes of Boukombe and Bopa.

Specifically, it will Strengthening the resilience of vulnerable households through economic empowerment through the development of income-generating activities (IGAs) Sustainable improvement of the nutritional status of children under 5, pregnant and lactating women from vulnerable households by promoting new food consumption patterns based on local products in the communes.

C. Project/Programme Components and Financing:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.

The project is comprised of the following three components:

Component 1: Strengthening the resilience of local agricultural production systems to the effects of climate change
Component 2: Economic empowerment and improved nutrition of vulnerable households
Component 3: Capitalization, dissemination of good practices and lessons learned and sustainability

The project outcomes are aligned with the Adaptation Fund's Strategic Results Framework in the following areas:

- Outcome 1: Reduced exposure to climate-related hazards and threats;
- Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets;
- Outcome 5: Increased ecosystem resilience in response to climate change and variability induced stress;
- Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas;
- Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies.

These closely related components are presented in Table 6 below:

Table 6 : Components of the project.

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount ($ US)
Component 1. Strengthening the resilience of local agricultural production systems to the effects of climate change	1.1. Farmers adopt restoration and sustainable management practices	375 producers, at least 50% of women of SILC Group whose agricultural production systems resilience is strengthened	1,094,691
	1.2. The populations have easy access to materials/equipment and certified seeds	375 producers, at least 50% of women of SILC Group increase in yields of the main agricultural crops by 20% to 30%	
	1.3. Resilient water mobilization, storage and distribution of water are built	Installation of climate change resilient infrastructures (2 solar borehole and water reservoir) for the promotion of agriculture and livestock	
Component 2. Economic empowerment and improved nutrition of vulnerable households	2.1. Producers have easy access to the market and and optimize the timing for the sale of harvested products	375 producers, at least 50% of women of SILC Group enjoying economic autonomy after the end of the project	1,057,578

	2.2. Producers engage in other income-generating activities (IGAs) that strengthen their resilience	375 producers, at least 50% of women of SILC Group who have increased their incomes	
	2.3. The population adopts good food practices based on local products with high nutritional values	375 producers, at least 50% of women of SILC Group adopt good food practices based on local products with high nutritional values	
Component 3. Capitalization, dissemination of good practices and lessons learned and sustainability	3.1. Climate change adaptation measures are taken into account in the activities of the deconcentrated structures	70 people at least 60% are women sensitized on gender-sensitive climate change adaptation measures	418,059
	3.2. The good practices promoted are documented and disseminated	5 best practices in climate change adaptation that have taken into account Gender capitalized and disseminated	
	3.3. The community early warning system is functional	2 functioning community early warning systems	
4. Project/Program Execution cost (9.5%)			**244,181**
5. Total Project/Program Cost			**2,570,328**
6. Project/Program Cycle Management Fee charged by the Implementing Entity (if applicable) (8.5%)			**239,233**
Amount of Financing Requested			**3,053,742**

D. Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

Table 7: Projected Calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	June 2025
Mid-term Review (if planned)	June 2027
Project/Programme Closing	June 2029
Terminal Evaluation	September 2029

PART II: PROJECT/PROGRAMME JUSTIFICATION

A. Project components, concrete adaptation activities.

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

The project aims to improve food security through improved resilience to climate change impact on the agricultural production systems for vulnerable communities in the municipalities of Bopa and Boukombe.

The project executing entity Caritas Benin, part of the larger Caritas Internationalis network, is a humanitarian and development organization that operates in Benin, focusing on poverty alleviation, community development, and empowerment initiatives. Caritas will utilize the previously established Savings and Internal Lending Communities (SILC groups) in the project area as the structure for demonstration projects. SILC groups are community-based savings and microfinance groups that are self managed and empower members, particularly those in low-income or rural communities, to save money, access credit, and build financial resilience.

Through regular contributions to a common fund, SILC group members, are able to then provide this savings as loans to group members who need financial assistance for various purposes, such as starting or expanding small businesses, covering emergency expenses, or investing in education or healthcare.

SILC groups operate on a rotating savings and credit basis. Members take turns borrowing from the group's savings pool, with each member entitled to a loan at a predetermined interest rate. The interest earned from loans is typically redistributed among group members as dividends or used to cover group expenses.

Beyond financial benefits, SILC groups foster social cohesion and mutual support among members, as well as collectively addressing community needs.

Caritas Benin uses SILC groups to ensure the sustainable achievements of its interventions, structuring them transversally throughout all of its projects. The project area SILC groups have been fully set up and will receive training and supported until their maturity and are monitored by community relays.

Acting as demonstration projects, SILC groups will showcase the project's effectiveness in improving food security; SLM and soil restoration; resilient agriculture through adaptive crop selection; certified seed use; enhanced nutrition through diversification and education; and enhance climate resilience within the two project areas.

The project is composed of three interdependent components.

- Component 1: Strengthening the resilience of local agricultural production systems to the effects of climate change.
- Component 2: Economic empowerment and improved nutrition of vulnerable households.
- Component3: Capitalization, dissemination of good practices and lessons learned and sustainability.

The main adaptation activities included in the first component focused on the resilience of local agricultural production systems to the effects of climate change are presented by concrete expected results.

Component 1: Strengthening the resilience of local agricultural production systems to the effects of climate change.

This component aims to bolster climate resilience of agricultural production, particularly among vulnerable small-scale farmers. It will achieve this by assisting smallholder farmers in accessing and sharing proven resilient seeds for specific high nutrition crop varieties, critical agricultural equipment, advocating and training for land restoration, Sustainable Land Management (SLM) techniques, and constructing climate resilient means for obtaining, storing and distributing water. Through this effort, farmers will be aware of climate change and its impact, encouraged to cultivate climate-resilient crop varieties, trained on adaptive practices while embracing resilient practices to maintain the ecological balance of their lands and surrounding ecosystems.

Project beneficiaries in the two participating rural communities will actively participate in selecting and prioritizing crops to maximize the potential for long-term community adoption and increase the resilience of the agricultural system. Emphasis will be placed on staple food crops with high nutritional value, crucial for vulnerable households' sustenance.

An initial menu of eligible crops will be considered during the initial consultations of the implementation stage with a focus on crops that will contribute to food security. A menu approach for crops will enable further prioritization and validation before the wide dissemination of the most relevant crops. This will also ensure full community support, necessary for sustainability.

The final selection will be undertaken using a community-driven process and guided based on eligibility criteria, to demonstrate link to resilience and adaptation. Selected food crops shall need to have a strong resilience attribute and demonstrate a significant contribution to the food security of local communities. A transparent process, guided by clear criteria, will ensure community-led identification and selection of these crops. Expert validation will confirm the suitability of resilient seed varieties.

Seed dissemination, uptake and sustainable integration of the new cultivars in the agriculture production system will be facilitated by the project through training and monitoring Project Management Unit (PMU), which will be comprised of an equal number of men and women.

Outcome 1.1: Enhanced climate resilience through restoration and sustainable land management practices for vulnerable small-scale farmers.

This outcome will be achieved through: (i) a selection and validation of climate resilient crops; (ii) the dissemination of climate-resilient agricultural practices and (iii) the implementation of land and ecosystems conservation through nature-based solutions to reduce climate-related impacts.

Activity 1.1.1: *Support of the dissemination and application of restoration and sustainable land management practices*

This activity takes into account several aspects, including (i) informing different stakeholders about climate change, its manifestations, and means of response, depending on their level of involvement in the project, and (ii) sustainable land management methods and restoration techniques.

A baseline on the level of land degradation to be restored will be developed at the beginning of the project. The results will be validated by the stakeholders. Posters and brochures on the most appropriate techniques for restoration and SLM will be designed and published in French and three local languages to all vulnerable communities in the four arrondissements of the project. Agricultural experts will use them to raise awareness among farmers in the districts.

Activity 1.1.2: *Technical assistance to apply adaptive agricultural production techniques including operationalizing soil restoration and SLM*

In response to the inadequacy of traditional subsistence agricultural production techniques in the face of Benin's current climate reality, an alternative inclusive adaptive approach, that project communities were trained on in the previous activity, will be implemented. This activity will provide support in the application and operationalization of these adaptive methods to promote agriculture production and food security using climate resilient techniques.

The project will provide adaptive agriculture training for 40 trainers setting gender inclusive targets of an equal number of males and females. Locally cultivated plants will be utilized for these adaptive techniques. The trainers will be community members who provide technical services to support resilient agricultural development at the local level. Their role will be to provide training on restoration of soil fertility and land management practices to 375 community members within the 15 SILC groups from the municipalities of Bopa and Boukombe. The SILC groups will in turn provide support to the communities for the implementation of these acquired techniques. This on the ground support and community engagement will allow them to identify additional capacity needs which they will be responsible to report to the PMU.

Additionally, 15 Farmers' Field Schools (FFS) will be established for each of the established SILC groups in the project intervention areas. These FFS will serve as a practical learning platform where local farmers can gain hands-on experience and knowledge through active participation. Agricultural technicians responsible for establishing the FFS will work in coordination with closely collaborate with SILC groups with the goal of training local farmers in the project communities. The technical training and education methods used to manage these FFS will be reviewed and approved at the level of the Arrondissements or Town, ensuring that the approach aligns with local needs and contexts.

Outcome 1.2: The project populations has easy access to agricultural materials/equipment and certified seeds.

Activity 1.2.1: *Provision of small agricultural kits and resilient seeds*

15 kits of small agricultural tools and resilient seeds will be provided to 15 groups of SILC groups to facilitate SLM, enhanced soil fertility and resilient farming practices. The SILC groups will act as demonstration small scale agriculture pilot projects with the goal of scaling up in the two project communities and project replication in other areas of the country.

Thus, this component takes into account providing:

- Farm equipment such as hoes, cutters, rakes, pots, sprayers, biofertilizers, biopesticides, and composting kits to each SILC group.
- Resilient seeds: sufficient quantity of resilient seeds and improved plants with high nutritional value to be utilized bu the demonstration project
- Establishment of demonstration community market garden in Bopa.

Productivity gains achieved despite the effects of climate change should motivate farming households to sustainably adopt the use of certified resilient seeds and incorporate good practices beyond the project implementation period.

Outcome 1.3: Resilient water mobilization, storage and distribution systems are constructed.

Two solar-powered boreholes and one water reservoir will be made available in three districts of Bopa and Boukombe to provide access to water for agriculture purposes. This will improve the availability of water resources for market gardening, agricultural production and increased food security.

Activity 1.3.1 *Construction of two solar powered boreholes in Bopa and rehabilitation of a water reservoir in Boukomb*e

Farmers, market gardeners, women processors, household water collectors, shepherds and livestock animals are the direct beneficiaries of this activity. Approximately 300 people (200 women and 100 men) will benefit from water mobilization.

Component 2: Economic empowerment and improved nutrition of vulnerable households

This component will provide activities for economic empowerment through training and support to implement the warantage process to allow SILC groups to act as demonstration project showcasing the practical application and benefits of selling harvest at the optimal time to increase profitability. Additionally, economic benefits will be derived through community driven inclusive diversification of climate resilient, innovative, income-generating activities, such as sustainable beekeeping in Boukombe and fish farming and market gardening in Bopa. Improved nutrition will be driven by training on cultivating high nutrition crops and dissemination of good food practices based on diversified local products with high nutritional value.

Outcome 2.1: Producers have easy access to the market and optimize timing for the sale of harvested products

Activity 2.1.1: *Implementation of a warrantage process with SILC groups*

The project aims to enhance the resilience of SILC groups through the implementation of a robust warrantage system. Additionally, support will be provided to formalize these groups, ensuring they can access socio-administrative resources effectively. As part of this initiative, warehouses with a capacity of 500 tonnes will be constructed in each of the four project districts. Community members will receive assistance for installing and maintaining these structures, along with technical and material support over a four-year period. Furthermore, logistical support will be provided for organizing 15 annual warrantage meetings facilitated by the SILC groups.

Outcome 2.2: Community members engaged in other income-generating activities (IGAs) that strengthen their resilience.

Activity 2.2.1: *Support for the development of innovative and climate change resilient IGAs.*

A comprehensive diagnostic study will be conducted to analyze income generating practices within the SILC community groups and specific challenges and opportunities. This study will focus on integrating various income-generating activities such as beekeeping, market gardening, and fish farming into existing farming systems, along with resilient agriculture production techniques. Following the study, community members will undergo training on agreed-upon options and techniques. Additionally, they will receive three income-generating

activity installation kits and quarterly advisory support to assist them in implementing these production activities effectively.

Outcome 2.3: Project community adoption of good food practices based on local products with high nutritional values.

Activity 2.3.1: *Behavior Change Communication (BCC) on good food practices*

Food insecurity at the community level reflects uncertainties or limitations in accessing safe and nutritious food, impacting individuals' ability to meet their dietary needs adequately. In the project areas, the adverse effects of climate change on agriculture exacerbate these challenges, leading to reduced food production, quality, and accessibility. This initiative aims to address these issues by providing training to community members on adopting resilient food practices to enhance food security.

Through a thorough diagnostic study of local food practices and the nutritional value of local vegetables, the project will identify and promote resilient food practices. The findings from this study will inform the development and distribution of educational materials, including posters, brochures, and other awareness tools in both French and local languages. These resources will empower SILC group leaders and community relays to effectively disseminate information and promote positive behavior change.

To facilitate sustainable change, the project will conduct five training and awareness sessions within each SILC group. By promoting the adoption of improved food practices, we aim to enhance food security and resilience within the community, mitigating the impact of climate change on agricultural productivity and ensuring access to nutritious food for all.

Activity 2.3.2: *Support for the formulation of balanced food rations based on local products.*

The populations that do not have permanent access to local agricultural products, due to the effects of climate change, have difficulties to compose balanced and/or rich food rations. This activity will focus on training the population on the formulation of balanced food rations based on the main local agricultural products with high nutritional values, in order to improve the food security situation in the Communes of Bopa and Boukombe.

Four cooking demonstration sessions will be organized in each SILC group. The evaluation of the level of adoption of good food practices in the groups and support in terms of advice will be the subject of three formal sessions according to methods to be agreed upon at the outset.

This activity aims to address the challenge faced by populations in accessing balanced food rations due to the impacts of climate change on local agricultural production. By providing training on the formulation of balanced food rations using locally available agricultural products with high nutritional value, the project seeks to enhance food security in the Communes of Bopa and Boukombe.

To achieve this, the project will organize four cooking demonstration sessions in each SILC group, where community members will learn practical skills for preparing balanced meals using local ingredients. Additionally, we will conduct three formal evaluation sessions to assess the adoption of good food practices within the groups and provide tailored support and advice as needed.

Through these activities, we aim to empower communities to make informed dietary choices, improve their nutritional intake, and strengthen their resilience to food insecurity in the face of climate change challenges.

Activity 2.3.3: *Support for cultivation and development of local agricultural species with high nutritional value*

In the context of climate change coupled with food insecurity, new food practice initiatives need to be developed. Such initiatives like the production of local species of plants with high nutritional values and resilient to climate change.

Each SILC group will receive five days of consultancy to assist with the technical preparation and demarcation of home gardens within the villages. The project aims to establish 375 home gardens to benefit households in the community.

Component 3: Capitalization, dissemination of good practices and lessons learned and sustainability

Outcome 3.1: Climate change adaptation measures are taken into account in the activities of the deconcentrated structures

This means providing training and skills development for local elected officials, executives of decentralized administrative structures, and sector managers. The objective is to equip them with the knowledge and tools necessary to incorporate climate change adaptation measures into the Annual Investment Plans (AIPs). This integration ensures that investments and initiatives at the local level take into account the challenges posed by climate change and aim to enhance resilience and adaptation within communities.

Activity 3.1.1 *Capacity building of local elected officials, executives of deconcentrated structures and sector managers for the integration of adaptation to climate change in the Annual Investment Plans (AIP)*

As climate change affects all sectors and actors, regardless of their economic or geographic distinctions, every institutional and community actor must shoulder their responsibility and contribute to mitigation efforts in order to address this global challenge effectively. This includes local, communal, and national decision-making bodies. The goal is to equip these decision-makers with the necessary knowledge and skills to integrate climate change adaptation (CCA) into development strategies and annual implementation plans. Over the course of the project's second, third, and fourth years, forty local elected officials, executives of decentralized state structures, and sector managers in the municipalities of Bopa and Boukombe will receive training on integrating CCA into their annual implementation plans.

Activity 3.1.2 *Strengthening local structures for collecting information for better management of the effects of climate change at the local level*

At the heart of the vast challenge of climate change lies the intricate interplay between global phenomena and their local impacts on both natural ecosystems and human communities. Recognizing this dynamic, this activity aims to strengthen the ability of local structures to gather vital climate change information. This information serves to bolster the management of climate change effects and ensures the meaningful engagement of all stakeholders, who are crucial for sustaining our progress. Working in tandem with Benin's Early Warning System (SAP-Benin) and its established communication protocols (MON), this activity aims to empower 40 representatives from local stakeholder groups. Through their participation in two comprehensive training workshops, these actors will acquire the skills and knowledge needed to effectively collect and utilize information for climate change adaptation management.

Outcome 3.2: The documentation and dissemination of good practices promoted.

Activity 3.2.1: *Establish database and knowledge management system*

The successes achieved by the project in combating the adverse effects of climate change in select pilot sites within the Communes of Bopa and Boukombe serve as valuable sources of inspiration. The value of the successes are not confined to their respective locations but can be shared with stakeholders across similar communes or within the same agro-ecological zones. To facilitate this knowledge exchange, the activity aims to compile databases and knowledge related to the project's achievements and disseminate best practices through various channels.

One avenue for sharing project experiences involves hosting site visits by local development professionals and welcoming pupils and students for field trips or internships. Furthermore, local radio and television broadcasts, public lectures, and seminars to disseminate information will be widely utilized. Additionally, we aim to ensure that project results are accessible to universities, research centers, and humanitarian organizations, including Caritas Africa and Caritas Internationalis. This activity will include organizing seminars for the stakeholders to appropriate the project's results, and experiences gained will be disseminated through platforms such as Caritas Benin and FNEC in French, English, and local languages, and included in national climate change databases.

To foster accountability and knowledge sharing, workshops will be conducted and disseminate good practices annually at the municipal level. Furthermore, during the final two years of the project, we will organize national-level events. At the grassroots level, we will organize community events in villages and districts, leveraging local media assistance to ensure the dissemination of best practices reaches the widest audience possible. Through these concerted efforts, we aim to maximize the impact of our project and contribute to broader climate resilience initiatives.

Outcome 3.3: The community early warning system is functional

Activity 3.3.1: *Strengthening community-based climate disaster management mechanisms at the local level*

This project activity aims to enhance the functionality of village committees established by the National Civil Protection Agency (ANPC) to bolster their capacity in managing climate-related risks in the Communes of Bopa and Boukombe. Currently, these mechanisms are not operating optimally within these communes.

The activity will involve sensitizing and training institutional executives, research institutions, and other stakeholders to facilitate the transfer of responsibilities and national support resources to local actors. This transfer aims to enhance the effectiveness of interventions, particularly in terms of climate change adaptation processes.

During the first year of the project, two workshops will be conducted in Bopa and Boukombe, each involving 40 participants per commune. These workshops will focus on revitalizing the community alert system and disseminating alerts at the village level. The objective is to strengthen the alert network by engaging both men and women members of SILC groups, particularly as these groups become formalized.

B. Economic, social and environmental benefits.

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

The implementation of this project will have definite benefits that can be grouped around each of its main dimensions (social, economic, food and nutrition security, environmental, community and/or institutional, gender sensitive).

At the social level, the general interest of the community is at the heart of the actions planned. Equal access to resources and gender equity will strengthen human capital. Taking into account the specific needs of vulnerable groups, taking into account the culture of the area, guarantees a quality intervention. The project will generate jobs for the population, especially for young people and women. These jobs will be direct or indirect, seasonal or annual, and will be created in agricultural product processing units, market gardening operations and other high value-added agricultural sectors. In addition, thanks to the project, better intra-community solidarity and cohesion between members of the groups will be developed, which will increase their resilience to climate change.

The application and generalization of the SILC (Community Savings and Internal Credit) approach to mitigate the social effects of climate risks on rural communities in the communes of Bopa and Boukombe will not only strengthen the solidarity and cohesion of poor households, particularly those headed by women, but also create conditions for the development of their managerial capacity and their social security.

Gender Assessment and Action Plan

Gender and social inclusion considerations are cross-cutting taking into account particularly in the activities of this project. Article 26 of the Basic Law of Benin, a national law orienting all interventions,states

that “the State guarantees equality to all before the law without distinction of origin, race, sex, religion, political opinion or social position. Men and women are equal in law. The State protects the family and particularly the mother and the child. He watches over the disabled and the elderly”.

The analysis of the Municipal Development Plansof the municipalities covered by the project showed several social disparities. In Bopa, the diagnosis showed that the weight of socio-cultural and religious constraints forced woman to stay and remain at home under the submission of the man. This perpetuates the virtual absence of women in local decision-making bodies. There are no female elected officials in theseventeen municipal council and district heads of Bopa.

Overall, gender inequalities appear to result in women having poor access to and control over land, difficulty to access and control production factors and income, low involvement in local authorities or local decision-making. When it comes to decision-making, including at home, men mostly make decisions alone without consulting women.

In Boukoumbé, several disparities still impede the accomplishment of the vision of the Municipality which aims to be, by 2030, well governed, resilient to climate change, with improved food and nutritional security, based on the promotion of economic and cultural activities that promote women's empowerment and youth employment. According to housing

and population census (RGPH 4) data, women represent nearly 51% of the population of the commune of Boukombe and work in several sectors of activity, notably in agriculture and processing. However, women face various forms of violence that hinder their empowerment. From 2012 to 2017, there were 193 cases of reported violence and 182 cases of pregnancy in schools. The main causes of this situation are marital conflicts, lack of monitoring of children, sex education considered a taboo, impunity of perpetrators of acts of violence, illiteracy, low level of education, forced and premature marriages. Furthermore, in the field of agriculture and processing, women's activities receive very little support. Women are marginalized in terms of access to production factors (fertile land, agricultural inputs and equipment, etc.)

The Child Protection System (CPS) reports an average of 30 cases of violence against women annually, alongside 23 pregnancies occurring within schools. This occurs within an educational landscape already marked by unequal access for various demographics, including girls, boys, Fulani, and disabled individuals, leading to disparities in retention rates (with a dropout rate of 16%, comprising 14% for boys and 19% for girls). Social protection efforts fall short, with 343 Orphans and Vulnerable Children (OVC) lacking adequate support.

In terms of healthcare, traditional beliefs weigh heavily on community members, resulting in reluctance to access medical services. Furthermore, socio-cultural constraints and limited information contribute to inappropriate food utilization among the populace. Research suggests that approximately 49% of women and 46% of children experience low dietary diversity, reflecting underlying challenges in nutritional practices and access to diverse diets.

Politically, women are very poorly represented due to their low level of education and lack of leadership. There are no women in the roles of the17 Municipal Councilors.

Table 8: Profile of economic activities practiced

Localities	Agriculture							Transformation							Breeding						
	M	W	T	%W		%YM	%DP	M	W	T		%YW	%YM	%DP	M	W	T	%W	%YW	%YM	%DP
Bopa/ BADAZOUIN	34	78	112	58,93		16,07	0,89	10	77	87			11,49	5,74	-	-	-	-	-	-	-
Bopa/ YEGODOE	76	80	156	51,28	-	25	-	53	193	246		51,28	0,81	-	-	-	-	-	-	-	-
Boukombe/ NATTA	55	34	89	38,2		61,8	-	-	-	-	-	-	-	-	63	8	71	11,27	-	-	-
Boukombe/ MANTA	13	4	17	26,67	-	76,47	-	-	20	20			-	-	19	-	19	-	-	-	-
TOTAUX	178	196	374			179,34	0,89	63	290	353			12,3	5,74	82	8	90	-	-	-	-

M = Men; W = Women; YW = Young women; YM = Young Men; T = Total; % = Proportion, DP = Disabled People
Source: Fieldwork, 2023

Table 9: Gender distribution of activities by group/association Group

	Bopa		Boukombe	
Activities	**%Men**	**%Women**	**%Men**	**%Women**
Agriculture	41,04	58,6	64,15	35,85
Transformation	18,92	81,08	0	100
Breeding	0	0	91,11	8,89

Source: Fieldwork, 2023

Analysis of economic activity distribution reveals the active participation of men, women, and youth in all production activities. However, there's a notable concentration of women in agricultural activities and the processing of agricultural products. For instance, in Bopa, women comprise 59% in agriculture and 81% in product transformation, while men account for 41% and 19%, respectively. In contrast, Boukoumbé sees 64% men and 36% women in agriculture, with 100% women in processing and 91% men in breeding.

A deeper dive into the literature underscores the limited presence of women as cash crop farm managers. Women play a leading role in food crop production, processing, and marketing. Within family farms, their roles encompass various tasks from sowing to harvesting and transportation, while men typically handle clearing, plowing, and storage activities. Additionally, women often manage plots dedicated to household food production.

Reproductive activities predominantly fall within women's domain across different groups, remaining unchanged throughout the seasons. This gendered division of labor underscores the intricate dynamics shaping agricultural production and household responsibilities within the community.

Table 10: Gender distribution of workloads on farms

Workloads	% of women	% of men	Constraints encountered in production	Impact on production/productivity
Market gardening				
Clearings and preliminary works	30%	70%	Access to agricultural land The nature of the relief, the inadequate equipment	Poor optimization of agricultural space, Yield loss
Preparing the seedbed	40%	60%	-	-
Sowing	50%	50%	Seed availability	
Watering	50%	50%	Water availability	Poor growth or even loss of seedlings
Weeding and maintenance	40%	60%	Inadequate equipment	Poor quality interviews leading to poor performance
Harvest	70%	30%	The impassability of the tracks, the lack of equipment	Loss of part of the harvest
Marketing	80%	20%	Low yields	Sale of harvests, difficult flow of products
Perennial crops				
Clearings and preliminary works	30%	70%	Access to agricultural land The nature of the relief, the inadequate equipment	Poor optimization of agricultural space, Yield loss
Preparing the seedbed	40%	60%	-	-
Sowing	50%	50%	Seed availability	
Watering	50%	50%	Water availability	Poor growth or even loss of seedlings
Weeding and maintenance	40%	60%	Inadequate equipment	Poor quality interviews leading to poor performance
The cut	20%	80%	Inadequate equipment	
Marketing	50%	50%	Low yields	Sale of harvests, difficult flow of products

Source: Fieldwork, 2023

Comments: Table 10: summarizes the statistics relating to the expression of the people met on the gender distribution of productive tasks. It emerges from the literature that both domestic and productive tasks are distributed between men, women and children, girls and boys, as follows:

Complementary activities between men and women in the context of production activities which are based on both objective and subjective factors. In the first case, activities which

require more energy are reserved for men and in the second case, certain tasks would be assigned which would not require specific intelligence to be carried out. In the case of groups/associations for example, Men would take care of preparing the crop plots for cutting and burning while women would carry out the collection and removal. While men would do the plowing, they would be in charge of fertilizing and sowing, tasks that they would have to finish the same day before moving on to others. They would also be responsible for the daily irrigation of the fields and the supply of related water during the cultivation period, repeatedly, within the limits of the cultivated areas. Men manage work related to harvest storage. Women also take care of their individual field for those who are "endowed" with it; but if necessary, they should take charge of it only once their responsibilities in the household field are accomplished. These would mainly be market garden crops, intended for household consumption. In addition, all work in the fields would generally be done manually, with traditional tools, for both women and men.

Productive activities involving men and women: this is the case for the activities of collecting, crushing nuts, selling heating oil, etc.

Reproductive activities exclusively reserved for women: For all groups, reproductive activities remain exclusively female responsibilities and invariable in all seasons. They must therefore combine these tasks with those of production, including domestic work and childcare. Women find themselves throughout the day with little time for themselves. These would take them a minimum of 13 hours of time per day, rising to over 18 hours, as they were performed at once. It should be noted that the burden of work falling on women is enormous; which wipes out his time for rest and leisure.

Table 11: Access and Control of Resources

Main Resources Used	Access		Control (who has the power to decide?)
	Access conditions	Who uses it?	
Natural resources			
- Land	Inheritance, donation, rental and purchase	Men and women	Men
- Water	Wild exploitation, irrigation, drilling, water reservoirs	Men and women	Men and women
Material resources			
Means of transportation	Purchases, rentals, assistance	Men and women	Men and women
Water points	Purchases	Men and women	Men and women
Agricultural tools	Purchases, rental	Men and women	Men and women
Inputs	Purchasing, Composting	Men and women	Men and women
Human ressources			
Access to Training	Being part of an association, the theme	Men and women	Men and women
Access to technologies	Faire partir d'une association, la thématique	Men and women	Men and women
Financial ressources			
Access to credits	Material, financial and human capacities, associations	Men and women	Men and women
Access to tontines/savings	Financial capacities, associations	Men and women	Men and women

Access to other sources of income			
Life in community			
Participation in community activities	Associations	Men and women	Men

Source: Fieldwork, 2023

Access and Control of Resources

In most cases, it appears that women do not control access to resources such as land and more generally to the means of production. They are also very little visible in decision-making bodies, which limits their access to services, credit, inputs and opportunities created by development projects. These limits have negative effects on productivity, production but also sustainability and the ability of women to participate fully in the development process. This question of access and control, predominant in the land question, is also relevant in production activities. On the issue of land despite the reforms undertaken by the Beninese legislator in the land code, the weight of traditions continues to hinder women's rights; they are confronted with socio-cultural constraints resulting from the patriarchal system which limit their access to assets and productive resources, thus reducing their economic autonomy, their income, and even their purchasing power. In 2017, 36.4% of men owned land compared to only 13% of women. Additionally, women are less likely to own a financial asset in the form of a bank account or to own assets such as cell phone.

Table 12: Structure of decision-making power

Type of decision	Who makes the decision?		
	Woman only?	Man only?	Man and woman ?
Decision within households			
children Education			x
Financial management		x	
Domestic activities			x
Health			x

Source: Fieldwork, 2023

Based on the group discussions, the question of authority and power was not addressed. However, it should be noted that within households' decision-making does not belong to the woman; we note that women do not have the capacity to make decisions that concern their own life. When the decision concerns financial management it is made by the man only. But for other decisions concerning the household the decision often falls to both the man and the woman; sometimes his opinion is not even required.

Knowledge of climate change and its effects according to gender

Based on the responses obtained during the interview of the different groups, it appears that the men, women and young people have a good knowledge of the phenomenon of climate change, its manifestations and its effects.

Table 13 highlights the needs expressed by the people met according to their specific constraints. It essentially emerges that people met expressed three (03) main needs, namely: 1°) strengthening their capacities; 2°) facilitation of access to land; 3°) equipment provision.

These needs are taken into account in a gender action plan which will be attached to this evaluation.

Table 13: Main constraints and needs according to gender

Subject	Man	Woman	Man and woman
Constraints			
Access to land		x	
Access to water resources			x
Access to seeds			x
Access to training			x
Availability of material resources			x
Needs			
Capacity building			x
Facilitate access to land		X	
Equipment supplies			x

Source: Fieldwork, 2023

Table 14: Action plan Gender of the project

Results/Outputs	Activities	Indicators	Goals	Chronogram	Budget	Responsibility
1. Strengthening the resilience of local agricultural production systems to the effects of climate change						
1.1. Farmers adopt restoration and sustainable land management practices/ Increase in yields of main agricultural crops from 20% to 30%	1.1.1. 375 producers, at least 50% of women, will be supported on techniques adapted to the needs of local crops in the context of climate change	Number of women, youth, people with disabilities and vulnerable people supported	1.Promote the principles of fairness and equality in the selection of beneficiaries 2.Valuing local knowledge in land restoration	First year of the project management	Refer to activity 1.1.1. and 1.1.2. of the budget detail	PMU CARITAS FNEC
	1.1.2. Establish collaboration with four (04) farmer organizations and local structures in charge of the agricultural and gender-sensitive sector	Number of collaborations established with a local structure in charge of gender issues				
	1.1.3. Train older women capable of transmitting local traditional knowledge on land restoration	-Number of elderly women integrated and trained				
1.2. Populations have easy access to materials/equipment and certified seeds Increase in yields of main agricultural crops from 20% to 30%	1.2.1. Provide small equipments and resilient seeds for 375 producers, at least 50% of women of Savings and Internal Credit Communities (SILC groups)	Percent of women producers provided of kits of small tools and resilient seeds	Ensure that the principles of equity and representation are respected in order to reach all vulnerable groups targeted by the project	First year of the project management	Refer to activity 1.2.1. of the budget detail	
1.3. Resilient water mobilization, storage and distribution infrastructure is built Installation of climate-resilient infrastructure for the promotion of agriculture and livestock	1.3.1. Enable at least two of the most disadvantaged groups of women to have access to borehole water for their production activities	Number of vulnerable women identified women	Ensure that the principle of equity is applied in the choice of beneficiaries	2nd year of the project	Refer to activity 1.3.1. and 1.3.2. of the budget detail	
	1.3.2. Support groups of women and young people who have benefited infrastructures on maintenance and establish specific needs.	Number of women and young trained on maintenance of equipments	Ensure that the principle of equity is respected	2nd year of the project		
2. Economic empowerment and improved nutrition of vulnerable households						
2.1. **Producers have easy access to the market and optimize the timing for the sale of harvested products** 2.2. **Producers engage in other income-generating activities (IGAs) that**	2.1.1. Strengthen the warrantage system for the benefit of at least 50% women in the 15 SILC groups	Document establishing the criteria for access to warrantage accessible to people	Ensure that people access to microcredit is improved	2nd year of the project	Refer to activity 2.1.1. of the budget detail	PMU CARITAS
	2.2.1 Provide 2/3 income-generating activity installation kits to the women of vulnerable women and young, as well as quarterly	Percentage of vulnerable women who have increased their incomes	Ensure that the principle of equity is applied in the choice of beneficiaries	2nd and 3rd years of the project	Refer to activity 2.2.1. of the budget detail	

Results/Outputs	Activities	Indicators	Goals	Chronogram	Budget	Responsibility
strengthen their resilience Increase in income of vulnerable agricultural households	advisory support to facilitate the implementation of production activities					PMU CARITAS FNEC
2.3. **Communities adopt good eating practices based on local products with high nutritional values** Improvement in the nutritional status of children under 5, pregnant women and nannies in vulnerable households	2.3.1.1. Implement an inclusive communication strategy targeting households by area including women mothers of children under 5 years old, pregnant women and nannies, including women heads of household.	Number of households members of SILC Group which adopted good food practices based on local products with high nutritional values	Ensure that the principle of inclusion is respected and that planned communications will reach the right people	3rd and 4th years of the project	Refer to activity 2.3.1., 2.3.2. and 2.3.3. of the budget detail	
	2.3.1.2. Take into account the educational level of beneficiaries and local languages when setting up communication materials	Number of materials produced in local languages	Ensure that the principle of inclusion is respected and that planned communications will reach the right people			
3. Capitalization, dissemination of good practices and lessons learned and sustainability						
3.1. Gender and Climate change adaptation measures are taken into account in the activities of decentralized structures and NGOs	**3**.1.1. Organising awareness-raising on gender and climate change for women working in decentralised structures	Number of women working in decentralised structures and NGOs with a good knowledge of gender-sensitive climate change adaptation measures	Contribute to improving the knowledge of political-administrative actors on gender and climate change synergy	4th year of the project	Refer to activity 3.1.1, 3.1.2 of the budget detail	PMU CARITAS FNEC
3.2. Capitalization and dissemination of good practices	3.2.1. Document and disseminate good practices in local languages by area	number of best practices in climate change adaptation that have taken into account Gender capitalized and disseminated	Ensure that all beneficiaries have been taken into account	5th year of the project	Refer to activity 3.2.1. and 3.2.2 of the budget detail	

Source: Fieldwork, 2023

On the economic level the new practices acquired, coupled with capacity building, will allow the populations to face the negative effects of climate change and, through this, to improve productivity and production for a better economic profitability. In the same way, the economic conditions of the producers, when they are improved, will allow through the process of payment of taxes and or royalties (especially by the market), an improvement of the economic status of the Commune. The adoption and development of new crops and animal breeds that are resilient to climate change will allow producers to make their farming systems more profitable. The expansion of initiatives of this nature will promote economic flows that are potentially beneficial to the Commune.

In terms of food and nutritional security, the various techniques learned by the beneficiary populations, as well as the support they will receive, will enable them to be sufficiently equipped to deal with the effects of climate change. They would have developed appropriate reaction capacities in the face of specific critical situations, including the reception of early warning messages, to limit the negative impacts on food production. From the smallest producer, to the institutional bodies, measures will be taken to fight against the reduction of the food insecurity rate in the area.

At the institutional and communal level, the dissemination of knowledge will enable the population and the various stakeholders to have basic knowledge of climate change, its manifestations and the strategies to adopt to reduce its effects. The attention of national and sub-national decision-making bodies will be drawn to the strengthening or the implementation of proactive strategies and application modalities in the form of guidelines to be followed in case of announced manifestations of extreme weather and climate phenomena. It will be necessary to strengthen the institutionalization of early warning systems in the sense of decentralization with increased accountability of departmental and communal authorities, including the inclusion of operating and intervention costs in the Annual Investment Plans of the Communes. The main advantage is to bring the decision-making centers closer to the intervention centers for greater efficiency. To this end, it will be necessary to resize the National Platform for Disaster Risk Reduction and Adaptation to Climate Change and the National Civil Protection Agency (ANPC) in order to strengthen preventive measures and improve the involvement of local actors and technical expertise, land restoration, sustainable land management, soil improvement benefits.

On the environmental level, the project will contribute to the conservation of biodiversity and the fight against erosion through the introduction of endangered forest species useful to local communities. Environmental and social impact studies will be carried out before the implementation of climate change resilient infrastructures in order to identify measures to avoid or minimize negative impacts. The various measures that will be taken will allow the reduction of recurrent extreme events such as floods. Similarly, the application of climate-resilient production techniques and sustainable land and water management techniques will definitively have benefits in terms of soil improvement and land restoration. They will considerably improve the living conditions of populations and the development of green spaces in human settlements and highly anthropized ecosystems.

C. Cost-effectiveness.

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

The analysis of the profitability of this project refers to the solid experience of the promoter Caritas Benin reflected in the aspects taken into account in the different components.

Through Component 1 on strengthening the climatic resilience of local agricultural production systems, and affecting the direct beneficiaries who are the most vulnerable populations, the project will contribute directly to strengthening the capacities of the target populations.

Component 2 on economic empowerment and improved nutrition of vulnerable households aims to strengthen the economic capacity of poor farming households, encourage the adoption of more resilient crops and provide training on the methodology for designing and developing rich and nutritious food rations based on local products. These actions directly affect vulnerable populations, so as to bring about a change in their behavior that will help correct the effects of food insecurity, the effectiveness of the interventions and the profitability of the project for the beneficiaries. In addition, the establishment of SILC groups facilitate initiative-taking by members and their economic empowerment.

As for component 3, on capitalization, dissemination of good practices, lessons learned and sustainability, it will allow the beneficiary populations to add their share of contribution to the fight against the harmful effects of climate change and to the strengthening of the efficiency of local and national interventions.

Cost Benefits analysis

The section provides preliminary information about the project. It covers issues related to the timing of the project financial impact analysis and the structure of the project's budget.

The project will be implemented over 5 years. Investments flows will start during the first year after the first semester of the project start. This will concern acquisition of kits and farming inputs such as seeds, storage facilities, farming equipment).

The equipment acquired and overall investments made by the project have the following average lifespan:

Table 15: Equipment acquired and average lifespan

N°	Equipment labeling	Lifespan
1	Solar panels	25
2	Water storage facility	15
3	Borehole	20

Source: Fieldwork, 2023

The project prioritizes options that have a longer lifespan (about 20 years on average). Determining the life of the project is an essential part of the financial and economic analysis, which significantly influences the profitability and determines the choice of investment resources implemented. This analysis is carried out within the framework of a slightly drab scenario and assumes a project life of 5 and 20 years.

The grant proceeds requested from the Adaptation fund for this project will be used to sort various budget lines. The overall amount requested is estimated to US$ 3,053,742 with 48% dedicated to capacity building and workshop; 23% for investment and 29% for operating costs including project oversight and implementation costs. The table below presents the detailed budget's structure by component.

Table 16: Structure of the budget by component

Components	**Montant**	**%**
Component 1 : Strengthening the resilience of local agricultural production systems to the effects of climate change (corn, cowpeas, soya, cassava, market gardening, etc.)	1094691	42,59%
Component 2 : Economic empowerment and improved nutrition of vulnerable households	1141638	44,42%

Component 3 : Capitalization, dissemination of good practices and lessons learned and sustainability	**397885**	15,48%
Project executive cost		9.5%
Implementation fee		8.5%
Grant Amount		100%

Source: Fieldwork, 2023

The baseline scenario is the scenario where farmers are using their primary traditional knowledge, methods and tools with little resilience to the adverse effects of climate change. Losses are most and their livelihoods and welfare are threatened. During the baseline scenario, no investment costs are encountered. I=0.

In baseline scenario, farmers observe losses. No benefits and no gain to sustain the activities. They mainly suffer from the consequences of climate change. They have no significant means of neither for mitigation, nor for adaptation. More importantly, they are vulnerable and less resilient.

With the project, outputs 1.1, 1.2, 1.3, 2.1, 2.2, 2.3 and 3.1 are likely to generate Benefits for the farmers.

Output 1.1

The direct benefits of use of the adopted practices are about 20% of their revenue, compared with the non-project scenario.

Output 1.2

With the easy access to tools and certified seeds, the producers are likely to improve their farm yield up to 30% from the non-project scenario. This will also infer on community livelihoods with large access to agricultural products.

Output 1.3

The construction of water storage will help the community in permanent access to water which will improve the cropping activities in crop diversification and in yield of gain available.

Output 2.1

The access to market will reduce the post-harvest losses which are estimated at 40% of the losses.

With more resilient storage facilities, the losses will be reduced to up to 10%. With an additional bargain power of the producers who will benefit from a good status of their products. This will also increase their income, and impact on their welfare and livelihoods. The market price will improve by 10% of the price of the non-project scenario.

Output 2.2

The diversification of farmers will induce a generation of new sources of income. These new sources of income will contribute in increasing the purchasing power of farmers and reduce their vulnerability to climate change adverse effects. In fact, farmers can diversify their food diet, improve in food security and improve their welfare by 10 to 20%.

Output 2.3

The improvement of new cultivars and agricultural yield, will enable farmers to adopt good foods practices. This will reduce the prevalence of diseases and improve in household food security and livelihoods. Generally medical care can demand up to 100% of the household

income. With the improvement of foods security, the household can save up to 80% of the expenses for health care.

Output 3.1

The general awareness system will contribute to prevent from climate disaster phenomenon and assist in safeguard and protection. This will impact on risk reduction and improve safety. The losses are generally important in the non-project scenario. This may reduce the losses by 50%.

The table 17 present the profitability analysis of the project.

Table 17: Project profitability analysis

Components of the project	Component Cost (US$)	Approximate landmass (km²)	Approximate number of beneficiaries	Benefits	Variant of the project proposals
Strengthening the resilience of local agricultural production systems to the effects of climate change (maize, cowpeas, soybeans, cassava, market gardening, etc.)	**1,094,691**	560	2,000	Farmers adopt restoration and sustainable land management practices. They also benefit from resilient structures for water and seeds mobilization, storage and distribution and from climate-resilient infrastructures to promote agriculture and livestock activities	A variant could be the introduction of new, more productive crops at the risk that they fail to adapt to local conditions
Economic empowerment and improved nutrition of vulnerable households	**1,057,578**	300	4,000	Vulnerable farming households increase their income through innovative activities that build their resilience in the agricultural sector. They also adopt good food practices based on local products with high nutritional values for children, pregnant and nursing women	The alternative here could be the proposal of commercial activities that would focus on increasingly less available agricultural products and force rural women to migrate to the city where nutritious food is more expensive for women, children and the elderly
Capitalization, dissemination of good practices and lessons learned and sustainability	**418,059**	700	200 direct beneficiaries (thousands of indirect beneficiaries)	Measures are in place for the sustainability of the project's achievements, the inclusion of climate change adaptation measures in local development plans and the dissemination of good practices. In particular, local committees in charge of climate disaster prevention and active disaster response are functional	The variant is to limit ourselves to Arrondissement of Badazouin and Yegodoè (Bopa) and Manta and Natta (Boukombe), thus limiting the possibility of scaling up in the other Arrondissements and vulnerable communities of the two Communes

Source: Fieldwork, 2023

In sum, all of the planned activities (capacity building, water reservoir development, equipment supply, economic security, etc.), coupled with the knowledge dissemination strategy, constitute an innovation and an added value that will allow the populations to perpetuate the potential benefits of the project, with a better understanding of climate change, its manifestations and the means to reduce vulnerability to these effects.

D. Consistency with national or sub-national development programmes

Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where applicable, the National Adaptation Plan (NAP), national or sub- national development plans, poverty reduction strategies, national communications or action programmes, or other relevant instruments, if they exist.

The project is consistent with both national, international and regional strategies and plans – including Benin's National Development Plan 2018-2025, the nationally determined Contributions, National Climate Change Adaptation Plan, the Regional Program for Agricultural Investment, Food Security and Nutrition, Sustainable Development Goals, Benin Gender and Climate Change Action Plan as well as Communal Development Plans for Bopa and Boukombe.

Benin's **National Development Plan** for 2018-2025 is organized around four overarching themes: human capital and well-being; economic productivity and competitiveness; the environment, climate change, and territorial development; and governance. This strategic framework underscores the necessity for an integrated approach to addressing contemporary development challenges effectively. By prioritizing these thematic areas, the plan aims to provide a comprehensive and coherent strategy for consolidating and sustaining the achievements of the Government Action Program (PAG) from 2016 to 2021.

The Nationally Determined Contribution (NDC) adaptation strategy in Benin, updated in 2021, aims to enhance the resilience of communities and ecosystems to climate change by mainstreaming adaptation measures into existing policies and implementing targeted actions. This includes prioritizing sustainable forest management, sustainable agriculture, and strengthening institutional frameworks to support climate-resilient development.

In the agriculture sector, objectives encompass diversifying and promoting high value-added agricultural sectors, alongside modernizing resilient agricultural infrastructure to improve food and nutritional security amid climate challenges. The project underscores the importance of sustainable agricultural practices, promoting diversified and resilient agricultural value-chains, and modernizing agricultural infrastructure. Additionally, climate risk-informed ecosystem restoration and sustainable land management efforts are crucial for achieving land degradation neutrality, offering benefits such as reduced soil erosion, improved water quality and quantity, and regulated microclimates. These interventions not only support climate change adaptation but also directly enhance food production, diversify income sources, and strengthen resilient value chains.

Benin's NDC articulates the following priorities for adapting to, and strengthening resilience to, climate impacts to agriculture by 2030:

- ensure diversification and promotion of high value-added, climate-resilient, agricultural value chains, as well as modernizing and enhancing the resilience of farm infrastructure;
- promote suitable systems of agricultural production that is resilient and adapted to climate change for food and nutritional security (climate-smart agriculture); and
- define new agricultural calendars adapted to a changing climate and specific to each of the major agro-climatic zones.

The National Climate Change Adaptation Plan (NAP): Benin's NAP, completed in 2022, has the objective to integrate climate change adaptation into policies, development planning strategies, development programs and budgeting processes in all sectors, both at the national and local levels. Amongst its priority sectors covered by the NAP include agriculture, water resources, health, coastal zones, forestry, energy, tourism, and infrastructure and urban development. The NAP's programmatic approach to climate change adaptation empowers local communities' ability to integrate adaptation and climate resilience into local development planning. The project aligns with this goal through empowering local development and ownership to increase food security in the Communes of Bopa and Boukombe.

The National Action Program for Adaptation (NAPA) aims to integrate climate risk considerations into agricultural development and the bolster climate change adaptation measures for water resources, biodiversity, and human settlements. The NAPA enables the development of a framework for the coordination and implementation of activities to adapt to climate change in the country, capacity building and the synergy of the various programs in the field of the environment through a participatory, community and multidisciplinary approach. Within the framework of agriculture, the program envisages the improvement of food crop production systems.

Benin's 2008 NAPA identified and characterized eight agro-ecological zones, grouping municipalities with similar physical, biological and social vulnerabilities as well as in terms of specific adaptation strategies. The vulnerabilities described in selected agroecological zones have also been taken into consideration for the choice of target areas for the project. The project aligns with the NAPA in the following ways:

- Prioritization of the agriculture sector ;
- Improving access of resources for smallholder farmers, including access to agriculture inputs and financial services ;
- Infrastructure development ;
- Capacity building and knowledge sharing to effectively implement adaptive measures and respond to climate challenges ;
- Mobilizing the required financial resources for financing climate change adaptation.

Government Action Plan (PAG 2016-2023), the main strategic guidepost for socioeconomic development, specifies six areas of adaptation priority, including resilience in agricultural production and water resources.

The Low Carbon and Climate Resilient Development Strategy (2016-2025)[24] aims to address the adverse effects of climate change through adaptation measures, while also responding to the country's desire to contribute to global mitigation efforts. The objective is to contribute to Benin's sustainable development by integrating climate considerations into the country's strategic sectoral plans. Specific goals are to: (i) strengthen the resilience of communities and production systems by increasing the level of food security, the share of agriculture in Benin's GDP, and the degree of climate resilience of local communities; (ii) reduce GHG emissions and enhance the carbon sequestration potential of forest areas, in line with the commitments made in the NDCs; and (iii) protect communities, especially those most vulnerable to natural disasters (women, girls, children, minorities).

The National Climate Change Management Policy (PNGCC, 2021-2030)[25] aims to guide Benin towards becoming a climate-resilient country with sufficient adaptive capacity and appropriate mechanisms to respond to climate risks and ensure low carbon growth, and whose institutions, organizations, businesses and citizens adopt climate-sensitive practices and behaviors. It has three

[24] Government of Benin (2016). Low Carbon and Climate Resilient Development Strategy 2016-2025.

[25] Government of Benin (2020). National Climate Change Management Policy

strategic guidelines: (i) strengthening institutional, individual and material capacities to deal effectively with climate change; (ii) promoting low-carbon, climate-resilient development in all development sectors; and (iii) promoting climate change governance for optimized management and coherent coordination of interventions. The PNGCC also commits to promoting women's leadership in building community resilience and strengthening gender-sensitive national and international climate policies.

Benin has committed to achieving national **Land Degradation Neutrality (LDN)** targets by 2030, aiming to restore 1.25 million hectares of degraded land while intensifying efforts to prevent further degradation. To realize this objective, Benin has outlined specific targets, including the restoration of at least 50% (1.2 million hectares) of degraded land, limiting the loss of non-degraded land to 5% (398,200 hectares), and achieving a net improvement in vegetation cover of 12% (1,364,603 hectares). The strategies and actions required to meet these LDN targets encompass various measures, such as those aligned with the project objectives to engage local stakeholders, promote alternative livelihoods, adopt climate-smart and resilient agricultural practices.

The Strategic Plan for Development of the Agricultural Sector (PSDSA 2025), ratified in 2017, stands as Benin's flagship national agricultural development strategy. With a primary objective to foster investment in agricultural productivity, the plan sets forth the ambitious agenda of "producing more, producing better". Beyond ensuring domestic food security, the PSDSA 2025 endeavors to position Benin as a competitive agricultural producer within the regional landscape. Recognizing the imperative of resilience in the face of projected climate impacts, the plan underscores the significance of agricultural crop and value chain diversification, aligning closely with Benin's NDC.

The Regional Program for Agricultural Investment, Food Security, and Nutrition (PRIASAN), established by the Economic Community of West African States (ECOWAS), aims to comprehensively address various aspects of food security, economic development, poverty reduction, and territorial equality within member states. At its core, PRIASAN seeks to sustainably meet the food and nutritional needs of the population while fostering economic and social advancement and mitigating poverty and inequality across territories and countries. Specifically, the program endeavors to (i) enhance productivity and sustainability across agricultural, forestry, pastoral, and fisheries sectors, while minimizing post-production losses, (ii) promote inclusive and contractual agricultural and agro-food value chains geared towards regional and international markets, thereby promoting regional market integration, (iii) improve access to food, nutrition and resilience of vulnerable rural populations, and (iv) improve the business environment, governance and financing mechanisms of the agricultural and agri-food sector.

Sustainable Development Goals (SDGs): The 2030 Agenda for Sustainable Development underscores the importance of an integrated approach to achieving Sustainable Development Goals (SDGs), aiming to leverage synergies and mitigate potential trade-offs. Land, in particular, plays a crucial role in accelerating progress across numerous SDGs. Benin has developed a roadmap outlining participatory and inclusive activities involving various stakeholders such as government agencies, municipal authorities, civil society, and the private sector, to advance SDG attainment.

The maintenance and restoration of land resources in Benin are pivotal in addressing climate change, preserving biodiversity, and ensuring vital ecosystem services, all while promoting shared prosperity and well-being. Healthy and productive land serves as a catalyst for economic growth and a cornerstone for food security, particularly for the most vulnerable populations. By achieving climate-resilient land restoration and adaptive agriculture practices, Benin can simultaneously advance multiple SDGs, including those related to poverty eradication, food security, health, gender equality, clean water, clean energy, decent work, sustainable cities, responsible consumption, climate action, and partnership for the goals. This comprehensive approach underscores Benin's commitment to sustainable development and underscores the interconnectedness of land management with broader development objectives. The project goal for inclusive land restoration and land management techniques, introduction of climate resistant

seeds, capacity building for adaptive agriculture and improved nutrition, resilient water infrastructure will help Benin to achieve multiple SDGs, including SDG 1, 2, 3, 5, 7, 8, 10, 13, 15 and 17.

As the local target communities are fundamental to the project implementation, the project has ensured its alignment with the Community Development Plans of Bopa and Boukombe.

The Bopa Communal Development Plan 2018-2022 prioritizes enhancing agricultural productivity, strengthening basic infrastructure, improving local governance and resource mobilization, fostering equitable and sustainable development, and promoting decentralized cooperation and gender equality.

The 3rd generation Communal Development Plan (PDC) of Boukombe (2018-2022) focuses on promoting local economic development and youth employment, providing quality basic social services, managing natural resources and adapting to climate change, enhancing local governance and women's leadership, and advancing food and nutritional security. By incorporating these local priorities, the project ensures relevance, ownership, and sustainability, contributing to the holistic development of communities and addressing their specific needs and challenges.

Other national strategies aligned with the project:

- Benin Gender and Climate Change Action Plan ;
- Low-Carbon and Climate-Resilient Development Strategy ;
- Long-Term Low Emissions Development Strategy ;
- National Strategy for the Implementation in Benin of the United Nations Framework Convention on Climate Change ;
- National Plan for Agricultural Investments and Food and Nutrition Security

E. Compliance with relevant technical standards and policies

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

The project is consistent with the Adaptation Fund's environmental and social policy and Benin's environmental and social regulations. Limited negative environmental impacts may result from some activities under Component 1 that will exploit sustainable land management and restoration technologies and resilient water mobilization and storage, distribution, and use structures. However, all relevant agricultural and agri-food processing, water and soil resource management, and environmental and social standards in the country will be met in component 2. The main relevant national laws and regulations are as follows:

- Law No. 2019-40 of November 07, 2019 revising Law No. 90-32 of December 11, 1990 on the Constitution of the Republic of Benin. this law provides in article 27 that every citizen has the right to a healthy environment and the duty to defend it. The State ensures the protection of the environment;
- Law No. 98-030 of February 12, 1999 on the framework law on the environment in the Republic of Benin. This law states in its article 15 that No one must emit, deposit, release, reject or permit the emission, deposit, release, burial or release into the environment of a contaminant beyond the quantity or the concentration provided for by laws and regulations;
- Law n°2018 - 18 of 06 August 2018 on climate change in the Republic of Benin. This law aims at preventing, protecting and managing the consequences of climate change over the people of Benin over the short, medium and long term. The law lays out a

framework to take adaptation measures to protect the air, land, waters and other natural resources;

- Law No. 2018-20 of 23 April 2019 on the pastoral code in the Republic of Benin;
- Framework Law No. 2014-19 of August 7, 2014 on fishing and aquaculture in the Republic of Benin ;
- Law No. 84-009 of March 15, 1984 on food control;
- Law n°2013-01 of January 14, 2013 on the Land and Domain Code in the Republic of Benin, amended by Law n°2017-15 of May 26, 2017;
- Law n° 87-015 of September 21, 1987 on the Public Health Code ;
- Law n° 2010-44 of October 21, 2010 on water management in the Republic of Benin;
- Law n° 2002-016 of October 18, 2004 on the wildlife regime in the Republic of Benin
- Law No. 87-015 of September 21, 1987 on the Public Health Code ;
- Law No. 97-029 of January 15, 1999 on the organization of Communes in the Republic of Benin ;
- Law n° 2011-26 of January 9, 2012 on the prevention and repression of violence against women ;
- Law n° 98-004 of January 27, 1998 on the Labor Code in the Republic of Benin ;

In addition the project is in line with Sustainable Development Goals 1-17. As far as it is contributing to reduce poverty, to let no one behind, to facilitate access to suitable water and sanitation, sustainable employment, clean energy and climate change directly. The others are indirectly impacted: Good health, improvement of educational systems as well.

F. Duplication with other funding sources

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

The "Integrated Program to Strengthen Food Security and Community Resilience to Climate Change in the Communes of Boukombe and Bopa" is a unique initiative in its spirit, approach and territorial location.

The Commune of Bopa has benefited from a large number of development projects of national scope, focused on nutrition and without any formal link to climate variability or change. These include initiatives such as the Community Nutrition Project (PNC: 2011-2015), the Multisectoral Food, Health and Nutrition Project (PMASN: 2014-2019), as well as the Nutrition-Sensitive Agriculture and Small Producers Support Project (PADA-Nutrition) and the Early Childhood Nutrition and Development Project (PNDPE), which are still in progress.

The Commune has also benefited from several climate change adaptation projects such as the Integrated Adaptation Program to combat the adverse effects of climate change on agricultural production and food security in Benin (NAPA 1). This project, implemented between 2011-2016, had the objective to strengthen the agricultural capacities and ability to adapt to extreme climate events and impacts in selected Communes within four vulnerable agro-ecological zones in Benin. This project took place with regard to the Municipality of Bopa, only in the village of SEHOMI, a demonstration village which was able to benefit from agrometeorological information bulletins, a rain gauge station, two trains of four floating cages, four fish enclosures.

Through the project's interventions in the Commune of Bopa, this project will build on the good practices of these two groups of initiatives.

In the Commune of Boukombe, the prioritization of the targets of the Sustainable Development Goals (SDGs) in Benin in 2017, the domestication of the SDG indicators and the spatialization of the priority targets, have made it possible to assign to this Commune, among others, the generic target of SDG 13 relating to the fight against climate change. This is specifically target 13.1 aimed at "building resilience and adaptive capacity to climate-related hazards and natural disasters in all countries". The priority action and the related domesticated indicator are respectively the improvement of the resilience of populations to climate change and the implementation of national and local strategies for disaster risk reduction (MPD, 2017, 2018a, 2018b)

As in the Commune of Bopa, this project is at the multi-sectoral level in Boukombe and will implement activities to adapt to climate change and strengthen the resilience of rural communities and their livelihoods.

The synergy or complementarity links between this project and some past or ongoing projects in the Communes of Bopa and Boukombe are presented in Table 18. Areas where there is complementarity include accessibility of water resources, agricultural production systems, land restoration efforts.

Table 18: Synergy or complementarity with other past or ongoing projects

Projects	Links/Synergy/Objectives	Lessons learned
Commune of Bopa		
Community Nutrition Project (PNC: 2011-2015)	Health and nutrition projects Improve the basic socio-economic conditions of poor communities in the Commune of Bopa	Projects that have not integrated climatic hazards, the impact of which is likely to limit the sustainability of results
Multisectoral Food, Health and Nutrition Project (PMASN: 2014-2019)		
Nutrition-Sensitive Agriculture and Support for Small Producers Project (PADA-Nutrition)	Health and nutrition projects that have taken into account the issue of climate change s Improve the basic socio-economic conditions of poor communities in the Commune of Bopa	Ongoing projects
Early Childhood Nutrition and Development Project (PNDPE)		
Integrated Adaptation Program for the fight against the adverse effects of Climate Change on agricultural production and food security in Benin (PANA 1) 2011-2016	Strengthen the capacities of agricultural demonstration communities in selected Communes to adapt to extreme events and the impacts of climate change in the four vulnerable agro-ecological zones of Benin (Commune of Malanville (Agro-ecological Zone 1), Ouaké and Matéri (agroecological zone 4), Savalou and Aplahoué (agroecological zone 5) and Bopa, Adjohoun, Ouinhi and So-Ava (agroecological zone 8)	The achievements of the project were to have a positive impact on human health (following better nutritional status), the purchasing power of households, as well as the living environment of young people and women from the most vulnerable rural areas of the country, but no activity of the said project had targeted these outcomes
Commune of Boukombe		
HELVETAS project for training and capacity building in poultry production	Agriculture and water sector projects	Reports of climate change not explicit
Local IWRM Support Project (PROTOS PAGIREL, 2006-2011)		
Local Water Governance project in 5 municipalities in northern Benin (GLEauBe, 2009-2014)		
Multisectoral Support Program for Food and Nutritional Security in Atacora (AMSANA, 2015-2020)	Ensure stable availability of food and market gardening products, increase and diversify income and enable better prevention of malnutrition, particularly for vulnerable populations (women and young people)	The project design took into account the problem of adaptation to climate change but implementation problems related to the weakness of technical capacity building activities in terms of efficient management and monitoring of infrastructure and equipment chains resilient have limited results
Water Quality Improvement Project in Benin (QualiEau 2011-2015)	Secure the quality of water in the selected communities and build the capacities of the various actors in the management of drinking water, hygiene and sanitation	Climate resilience building activities are clearly embedded in these projects executed to the satisfaction of stakeholders
Programme d'Appui aux Communes dans la gestion de l'Eau et de l'Assainissement au Bénin (PACEA 2011-2016).	Strengthen and support all public and private actors involved in drinking water management in their effective roles for equitable and sustainable management of WASH services	

Source: Fieldwork, 2023

G. The learning and knowledge management component

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

Project monitoring, evaluation and learning will be under the oversight of the PMU and led by the monitoring and evaluation officer, working closely with the implementation coordination teams and collaborating partners.

The PMU along with the efforts of the Caritas Benin local relays will: (i) produce, organize and disseminate information for strategic management of the project, (ii) document results and lessons learned for internal use and public dissemination on project achievements, and (iii) respond to information needs for reporting on activities and progress.. An M&E manual will outline a simple and effective system for collecting, processing, analyzing, and disseminating data, to be prepared in the first year of the Project.

In conjunction with the mid-term review workshop, relevant lessons learned across the projects can be captured and incorporated to the project.

The trainings planned will build the capacity of various stakeholders on methods and tools for adaptive agricultural practices, SLM, nutrition and environmental conditions at the community level.

The project's monitoring and evaluation activities will be guided by the following: (i) data will be disaggregated by poverty and gender; (ii) implementing partners will have clear responsibilities for monitoring and evaluation, with specific reporting deadlines and a forum for presenting results; and (iii) monitoring and evaluation will be linked to the project's rationale, logical framework, annual work plans, and budgets. The results of the monitoring and evaluation will be used to take corrective or reinforcing actions to improve project management.

Stakeholder outreach sessions and the publication of policy briefs, reports, and press releases on social media will facilitate communication of results and consistent stakeholder engagement.

Project experiences will be systematically tracked and analyzed periodically to determine implementation level of success as well as to share lessons learned for other climate adaptation efforts and to increase understanding about how to structure and implement interventions to be most productive and successful.

The efforts to strengthen resilience of local agricultural production systems and disseminate information on slm, technical production support, will be executed through various channels such as training sessions, social networks and websites in order to produce and share information. Technical support and regular information sharing allows an avenue to share information about adaptive measures

The first factor that will allow the populations to become familiar with the technology is andragogical which is an educational approach intended for adults: the working language will play an important role. All community trainings will be conducted in the local language of the project's implementation area. The documents will be prepared and translated into the preferred local languages. Image boxes, audiovisual aids, role playing and simulations will engage the communities in a manner to increase project ownership within the communities.

The establishment of SILC groups, will allow for the production and sharing of information on financial management, savings and intervention strategies. Communication activities on good practices and support activities are means of producing, sharing and assimilating knowledge. Also, technical support for producing and preparing nutritious food, perhaps including using newly discovered local species, is an excellent means of knowledge acquisition.

The sharing and assimilation of knowledge at the level of decision-making bodies and institutions, also ensures the dissemination of knowledge necessary to strengthen their level of involvement. Thus, good practices will be capitalized, documented and disseminated to stakeholders for the design and implementation of future projects.

H. Stakeholder Consultations

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

The process of identifying adaptation measures and activities, as well as the development of the project document, followed a very participatory approach.

Stakeholders have been identified and categorized. Thus, we distinguish:

- Institutional stakeholders such as:
    - decentralized structures (the municipalities concerned which are the Town Halls of Bopa and Boukombe);
    - deconcentrated structures (Territorial Agricultural Development Agency (ATDA); Departmental Directorate of Agriculture, Livestock and Fisheries (DDAEP); Departmental Directorate of Living Environment and Sustainable Development (DDCVDD));
    - CARITAS Benin;
    - NGOs and
    - development associations;
- Community stakeholders: namely:
    - women's groups,
    - youth groups,
    - producer groups,
    - elders,
    - religious structures.

An interview guide by stakeholder category was developed and administered. Meetings and focus groups were organized according to gender.

The first phase took place during the conception note preparation from 22 to 25 March 2023 and recorded vulnerable communities' perceptions of climate risks and climate change. They specified the changes observed, the frequency of climate extremes, and the period marking the beginning of the observation of these climate changes, as well as the importance of their impacts on their activities. The various initiatives, projects/programs already implemented, underway and planned in the field of climate change and in the target areas were identified with the actors of the sector. During this phase, a total of 168 people were consulted in the communes of Bopa and Boukombe.

During the second phase of consultation, a broader consultation was organized during the period from 24 to 28 April 2023, with a particular focus on gender and vulnerable groups. Thus, focus groups were organized at the level of each targeted district with young people, women, elders and people with identified disabilities. The non-governmental structures consulted are particularly those whose actions take into account gender and the agricultural sector. During this phase, a total of 257 people were consulted in the two municipalities.

The fieldwork provided input on the adaptation measures needed to reduce the climate induced vulnerability of the target communities. This work was corroborated by a meeting of the actors of the sector with Caritas Benin, FNEC, National Designated Authority (NDA) for quality assurance through a workshop that took place on October 03, 2023.

In the Municipality of Bopa, 36 associations with a total workforce of 1,142 people including 54.82% women and 45.18% men were represented and took part in the focus groups in Badazouin and Yegodoe.

In the Municipality of Boukombe, 24 associations with a total workforce of 361 people including 32.13% women and 67.87% men were represented and took part in the focus groups in Manta and Natta.

The associations concern groups of producers, processors, traders, different crops (corn, cassava and its derivatives, soya and its derivatives, oil palm and its derivatives, sorghum, millet, etc.).

The social categories identified concern young men, young women, the category of wise women (over 50 years of age) and the category of wise men (people over 50 years of age). A total of 60 groups and associations representing 1,503 people were consulted, including 742 women, or 49.38%.

These associations and groups already benefit from the support of Caritas Benin.

Table 19: Summary of consultations held in the Commune of Bopa

	Bopa						**Total number of stakeholders enrolled in Bopa**		
	Badazouin			**Yegodoe**					
	M	**W**	**T**	**M**	**W**	**T**	**M**	**W**	**T**
Participants	37	11	48	35	25	60	72	36	108
Proportions (%)	77,08	22,92	100	58,33	41,67	100	66,67	33,33	100
Groups represented and their membership Group	17 associations			19 associations			36 associations		
	M	**W**	**T**	**M**	**W**	**T**	**M**	**W**	**T**
	320	192	512	196	434	630	516	626	1142
Proportions (%)	62,5	37,5	100	31,11	68,89	100	45,18	54,82	100

M: Men; W: Women; T: Total

Source: Fieldwork, April 2023

Table 20: Summary of consultations held in the Commune of Boukombe

	Boukombe						**Total number of stakeholders enrolled in Boukombe**		
	Manta			**Natta**					
	M	**W**	**T**	**M**	**W**	**T**	**M**	**W**	**T**
Participants	33	35	68	26	17	43	59	52	111
Proportions (%)	48,53	51,47	100	60,47	39,53	100	53,15	46,85	100
Groups represented and their membershipGroup	13 associations			11 associations			24 associations		
	M	**W**	**T**	**M**	**W**	**T**	**M**	**W**	**T**
	127	74	201	118	42	160	245	116	361
Proportions (%)	76,5	23,5	100	62,97	37,03	100	67,87	32,13	100

Source: Fieldwork, April 2023

Table 21: BOPA Stakeholders List

Bopa	Institutional Actors	For institutions • Departemental Directorate for Living Frame and Sustainable Development of Mono (DDCVDD-Mono) ; • The Departemental Directorate of Water and Mines of Mono (DDEM-Mono) ; • National Fund for the Environment and Climate (FNEC) ; • Territorial Agency for Agricultural Development (ATDA pole 7) • Municipalities section of Water, Forests and Hunting (SCEFC)			For the Local stakeholders; • The Chief of arrondissement of BADAZOUIN ; • The chief of Arrondissement of YEGODOE • Office staff of the Municipality For the Civil Society Actors (ONGs, association) • GROPERE ONG ; • BUPDOS ONG ; • AVPN ONG ; • APS ONG ; • ONG MORIJA ; • Plan Bénin.
	Badazouin	Youth Group	Womens' groups		Elders group
		• Group Gbètamimin of Badazouin : 32 members at the rate of 17 women, 46,87% men, 53,13 % women • Group Vidjinnankpon of Badazouin centre : 200 at the rate of 80 women : 60 % d'men ou 40% women • Association of students parents Hombètè : 11 at the rate of 3 women, 72,72 % men or 27,28 % women • Group Solayon Hombètè : 32 members at the rate of 31 women : 96, 875% women • Association of farmers of Akplénou : 10 members at the rate of 4 women, 60 % men or 40 % women • Association of farmers of Hombètè : 20 members at the rate ofe 8 women, 60 % men ou 40 % women • Association of photographers of Hombètè : 8 members at the rate of 3 women, 62,5% men 69ither 37,5% women	• Group MAHOUEKPO : 35 members of which 5 men and 4 people with disabilities, 85,71 % women • Group TONAGNON (production of plantain banana and sweet banana) : Size 21 members of 6 men, 71,43 % women • Group MADOKPON (products maize, cassava, cowpea and proceesed cassava into gari) : size 28 members of which 2 men, 92,85 % women • Group GNONNANMEDE (products cassava, maize) : size 30 members of which 5 men, 1disabilitiy women, 83,33% women • Group ALODOALOME (processing of soya into cheese, milk of soya, cake of soya) : 24 members in the Group of which 3 men, 87,5% women		• Group TOFFA : 12 members (4 women/ 33% women) • Group ELAVAGNON : 9 members ((4 women/ 44% women) • Group KONDOKPO : 20 members (10 women/ 50% women) • Group DIEU PEUT TOUT : 5 members (2 women/ 40% of women) • Group ALOLEALOME : 15 members (5 women/ 33% women)
	Yègodoé	Youth groups	Young women's group	Group of wise men/old men	Wise Women Group/old women

		• Association of craftsman of Tohouéta Kpodji : : 54 members at the rate of 36 women, 66,66% women • Association of mechanics of arrondissement of YEGODOE : 10 men only, 100% men • Group of processors of Soya into cheese at Lonfin (group no longer operational due to the lack of means) : 30 people at the rate of 28 women, 93,33% women • Association of motobike taxi drivers of of l'arrondissement of YEGODOE : 18 men only, 100 % men • Association for savings ''Minonhounzon'' of Djékian : 48 members at the rate of 25 women : 52,08 % women • Association of farmers ''Ayidédagni'' of Tohouéta Aklo: 54 members at the rate of of 30 women : 55,55% women • Association des cultivateurs HAVIVI de Vèganmè : 60 members à raison of 45 women, 75 % of women	• ONG NONVIGNON (child hygiène and sanitation, advice to pregnant women) :60 members at the rate of 10 men : 83,33 % women • ONG GBENONKPO (soya processing) : 30 people at the rate of 5 men, 83,33% women • ONG AYIDEKON (Sanitation, Processing) : 40 women only : 100 % • ONG AYIDEDAYI : 40 members at the rate of 10 men : 75 % of women	• Group MAHOUGNON (production of selectionned palm tree, red palm oil processing and marketing) : 27 members of which 3 women, eitheir 11,11% of women • Group Minonhouzon : 30 members, of which 15 women, eitheir 50 % of women • Group GBENONKPO (production of palm nut, processing of red palm oil and marketing) : 15 members of which 2 women, either 13,33%	• Group NONVIGNON of sweeping, de noix de palme en huile rouge : Effectif 42 members uniquement des women : 100% women • Group ESSOGBE de transformation de noix de palme en huile rouge : Effectif 9 members uniquement des women : 100% women • Group SILC NONVISSI de transformation de noix de palme en huile rouge et de soja en fromage : Effectif 30 members dont 4 men : 86,66% • Group NONVIDJEKPO de transformation de manioc en gari, noix de palme en huile rouge : Effectif 11 members dont 3 men : 72,72 % women •Group AYÏHA de transformation de manioc en gari : Effectif 12 members dont 2 men : 75 % of women,

Source: Fieldwork, 2023

Table 22: Boukombe Stakeholders List

Boukombe	Institutional Actors	For institutions • the Departemental direction of Agriculture, Livestock and Fisheries (DDAEP); • The National Fund for Environment and Climate (FNEC); • The Territorial Agency for Agricultural Development) - For the local stakeholders; • the office staff of the municipality. For the civil society (ONGs, association) • CERD BENIN; • CPC.			
	Natta	Youth Group	Womens' groups	Group of Sages	
		• Association of seed companies of Koutchamagou : 25 people at the rate of 7 women : 28 % women ; • Association of breeders of Natta : 38 people at the rate of 8 women : 21,05% women ; • Association of maize farmers of Kouporgo : 32 people at the rate of 9 women : 28,125% women ; • Association of traders of small-ruminants and poultry of Boukombe : 33 men only : 100% • Association of fonion farmers of Kouporgo : 5 at the rate of 3 women : 60 % women • Village Cooperative of soya farmers of Katenga : 27 at the rate of 15 women : 55,55% women	• Group SILC « BATITENA ; • Group « TIBOYAKA » ; • Group « TIBOBENA ».	• Association of rice farmers (men, women, jeunes) ; • of soya farmers (men and women).	
	Manta	Young men Group	Young Women group	Wise men group / Old men	Wise women group/ old women

		• Association of cotton farmers of Boukombe ‘’ICOM’’ : 7 men only • Association of students of Manta ‘’HAEM’’ : 35 students at the rate of of 9 women, 74, 28 % men et 25,72% women • Association of developpement of Manta ‘’ADAM’’ : 7 people at the rate of 2 women 71,42 % men et 28,58% women • Association of craftsmen of Boukombe ‘’Zénan Bénin’’ : 7 people at the rate of 2 women, 71,42 % men et 28,58% women • Coopérative of maize farmers t of Manta, dikpoko village 1 : 11 at the rate of 4 women, 63,63% men et 36,37%% women • Association of traders of poultries and small-ruminants: 19 men only, 100% men • Association of community development of Koutango of Manta : 15 people at the rate of 4 women ,73,33% men et 26,67% women • Association info foot of Manta : 9 people at the rate of of 2 women, 77,77% men et 22,23 % women • Association for Manta restoration : 5 at the rate of 1 woman, 80 % men et 20% women • Association of car drivers of Manta : 16 men only : 100% men		• Association of wise: 35 members of which 16 women : 45,71 % women	• Group SILC « BASSA » who counts 15 members of which 14 women et 1 man (secretary) : 93,33% women • Group « TIYOTITOITOUBOU » count 20 members exclusively of women, the Group process shea butter

Source: Fieldwork, 2023

By leveraging field data, the project was able to develop vulnerability matrices for the project communities. These matrices underwent rigorous scrutiny, aligning them with archived data from national institutions. Any necessary adjustments were made accordingly.

The vulnerability matrices herein reflect the culmination of this thorough process.

I. Justification for funding requested

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

The objectives of the project are fully in line with the food security thematic area of the Adaptation Fund.

Component 1: Strengthening the resilience of local agricultural production systems to the effects of climate change (US$ 1,094,691)

In the communes targeted by the project, agricultural production levels are in continuous decline. The causes identified are the degradation of land, water and biological resource management systems, exacerbated by climate variability and change.

The activities planned in this component will enable the development and dissemination of new knowledge on climate variations, the dates of rainy events and solutions to cope with them in the agricultural and food production sector. The populations in charge of production, agro-food processing and marketing will be informed and accompanied: actions will be carried out in the direction of profitability and economic and social sustainability. This component takes into account in particular:

- training on sustainable land management
- the provision of equipment and resilient seeds
- the rehabilitation of water reservoirs
- the construction of boreholes.

Component 2: Economic empowerment and improved nutrition of vulnerable households (US$ 1,057,578)

For this component, the non-implementation of the project would mean the continuation of the mismanagement of rural households' income, the sustained lowering of their standard of living and their impoverishment, and would lead to the intensification of their vulnerability to the adverse effects of climate change. The lack of knowledge of good adaptive practices regarding the composition of balanced diets would particularly limit the nutritional development of families, mothers and children.

The implementation of this component will allow:

- The training of populations on good practices to adopt in case of climate change events.
- the establishment of village savings and internal credit community (SILC) nuclei committed to learning and practicing the management of domestic funds and thus promoting financial autonomy, particularly with the establishment of the warrantage system;
- Capacity building on the design of rich and nutritious diets based on local products for families.

Component 3: Capitalization, dissemination of good practices and lessons learned and sustainability (US$ 418,059)

The non-implementation of this component would leave the various local, communal and institutional actors with a lack of capacity to face the various challenges facing their localities. This would lead to problems of involvement in the monitoring of activities, which would considerably limit the quality and sustainability of the project's achievements.

This component, once completed, would allow, among other things:

- A better involvement of the different actors concerned by the different themes (climate change, food security, risk management);
- The development and availability of strategic risk management documents;
- a good sustainability of the project's achievements;
- A thorough understanding of the different environmental and climatic phenomena that will occur in the localities.

With this funding request, the project proposal will help to strengthen the resilience of rural populations, the various stakeholders involved and the production activities of goods and services.

J. Sustainability

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

Environmental sustainability:

The implementation of resilient technologies in the areas of agricultural production and processing, food ration, land, water and production systems management, will lead to increased crop and livestock productivity. The capacity building for household financial management will improve the purchasing power of community members and its successful implementation will provide greater replicability for the entire rural community. Farms will benefit from training in resilient technologies which will enhance resilience and improve the ability to handle climate impacts despite the projected trend of global warming and its disruptions to hydrological cycles, agricultural growing season and crop cycles and yields. With improved climate resistant seeds, and adaptive agriculture techniques the extreme weather events will be better withstood and farmers will maintain reliable food production, which is essential for achieving food security and enhancing the sustainability of community livelihoods. Additionally, the use of resilient seeds will result in water savings in vegetable and field crops. Substitution of agrochemicals with organic fertilizer will help protect the environment and water from chemical pollution and limit adverse effects on human and animal health and the health of micro fauna and wildlife.

Social and economic sustainability: Promoting increased crop yields and production levels in the context of climate change will have a substantial impact on livelihoods, and enable communities to develop economic opportunities in their rural communities. The project will focus on creating alternative opportunities for producers of **maize, cowpeas, soybeans, cassava, vegetable crops, sorghum, fonio, rice, etc.** and link them to other economic opportunities along agricultural value chains. Public-private partnerships can be initiated or strengthened at the commune level so that farmers - especially women and youth - can engage in and benefit from high value-added activities, such as product processing, that provide direct, indirect, or temporary employment.

Community consultation during project development and community participation during implementation, play an important role in the sustainability strategy. Consultation and participation are important to ensure that the project components and activities directly address the adaptation needs of different community members, disaggregated according to gender, age group, livelihoods and vulnerability group, etc. It also assists to develop community members' ownership of the proposed intervention, which is critical to ensure that any assets developed are maintained beyond the life span of the project. Participatory development of gender-sensitive adaptive measures to respond in a targeted fashion to the differentiated needs of different groups of poor and vulnerable people, and their varied livelihood systems in the project localities. Community consultations will remain key to deciding the approach and format of adaptive training involving the community, including religious and cultural leadership, so that the project outcomes are culturally acceptable and appropriate and therefore more sustainable.

Institutional, political and financial sustainability: The project will be implemented through national and communal producer organizations, non-governmental organizations (NGOs), and local development associations. These organizations are already active in the sectors, agricultural cultivation practices covered by the project. They will be encouraged through participatory and inclusive consultative processes to assume leadership and ownership of the issues involved. The project will focus on strengthening the institutional capacities of communal and departmental branches of national and regional research centers (INRAB, IITA, Universities), regional and national implementing entities and extension institutions (DDAEP, ATDA, DDS, DDCVT), local NGOs and development associations, and producer groups. The capacities necessary for the extension and intensification of the themes promoted by the project will thus be developed and will guarantee the continuation of the processes after the end of the project.

Consider:

Solar: The management, operation, and maintenance of the solar-powered pumps for the boreholes will be entrusted to the community members themselves, including both men and women, or to a community-based solar board. To achieve this, training and capacity-building sessions will be provided to equip them with the necessary technical skills, such as operating and maintaining the system, as well as basic troubleshooting for repairs. Furthermore, regular inspections and maintenance will be scheduled and conducted by either a trained technician or a local service provider. The project will ensure that the associated costs of maintenance and repairs are reasonable and that spare parts and technical assistance are readily accessible. A clear ownership and management structure will be established by the project, ensuring that community members, including women, feel a sense of ownership over the facility, thereby ensuring its long-term sustainability.

Storage Facility: The management, operation, and maintenance of the storage facility will also be entrusted to the community members themselves, including both men and women, or to a community-based storage facility board. Like with the solar operated water pumps, training and capacity-building sessions will be provide technical aspects such as storage techniques, inventory management, and quality control, management, operation and maintenance of the solar powered pump system. Additionally, emphasis on sustainable practices and community engagement can enhance the facility's long-term effectiveness and sustainability.

Developing a system to institutionalize SILC groups in the two project areas and share lessons learned at a national level is an innovative financing approach aimed at sustaining and scaling out the project results. Currently, coordination mechanisms across different stakeholders are ineffective, highlighting the need for improved information and coordination at various levels of institutions. The project's bottom-up and evidence-based approach ensures that end users and communities are appropriately engaged, enhancing their understanding of climate impacts and increasing their adaptive capacity. By involving end users in

the co-development process of SILC, the project promotes stronger community engagement, trust in using the products, and continuous feedback for further improvement. Government agencies will play a crucial role in institutionalizing and sustaining the process, with lessons shared nationally to raise awareness of the importance of community-centric co-development of SILC and climate resilience.

Ensuring maintenance and sustainability of concrete assets developed is a critical element of the project's exit strategy. For all assets at the farmers' groups and community levels, project-specific agreements will be developed prior to implementation, spelling out arrangements for ownership, management, and maintenance in the interests of sustainability. Provisions will ensure equitable benefits for women, youth, and people with disabilities from involvement in SILC groups, as well as maintenance training and management roles in the established warehouses and solar water pump systems. Community management and formal agreements will be discussed during community adaptation planning, specifying clear responsibilities for maintenance. The project will implement activities to advance gender equality, addressing different needs and barriers through a gender-responsive, bottom-up approach, ensuring that climate adaptive agricultural techniques are actionable and accessible to women farmers as well as men farmers of different socio-economic groups.

K. Environmental and social impacts and risks

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

This project was developed in accordance with the 15 environmental and social principles of the Adaptation Fund's Environmental and Social Policy.

Some of the activities under Component 1, which will exploit technologies for restoration and sustainable land management and resilient water mobilization and storage, distribution, and use, may have limited environmental impacts that could result in a Category B rating for the project, as suggested by the results of the preliminary screening and the various analyses conducted during data collection.

To ensure environmental sustainability, at initial phase, the project identified the most critical environmental aspects and potential impacts associated the activities and focus on assessing and mitigating these high-priority issues. the boreholes to be dug and the water reservoir to rehabilitate will follow environmentally friendly construction practices. The project will also collaborate with environmental organizations, and stakeholders who may have an interest in the project.

The potential environmental and social risks identified made it possible to document the table of environmental and social principles of the Adaptation Fund's Environmental and Social Policy as follows (Table 23).

Table 23: Environmental and social risks

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	The proposed project has been developed in accordance with the provisions of the multilateral environmental agreements and national laws, including the Framework Law on the Environment, the Law on Climate Change, the Laws and regulations relating to food safety, health, soil management, water, biological diversity, etc. All specific environmental administrative authorizations or permits will be processed, before carrying out any intervention in the project area.	Potential impacts and risks to be updated at the start of the project
Access and Equity	The project provides equitable access to all targeted vulnerable groups in the beneficiary communes.	
Marginalized and Vulnerable Groups	The project gives priority to the most vulnerable people among the targeted communities, i.e., small-scale farmers, herders, fishermen, market gardeners, emerging farmers, pregnant women and nannies from vulnerable households. The ESMP focuses on measures to guarantee the inclusion of vulnerable groups and their universal access to the benefits of the project.	However, some of the target populations who are illiterate may not benefits from the outcomes such as the implementation guide for climate change adaptation for people living near classified forests. To overcome this difficulty, an illustrated version of the guide in local language will be produced. Similarly, populations without radios and cell phones may not benefit from climate information. This risk will be overcome by using traditional means of communication (griots, etc.)
Human Rights	The project guarantees respect for the rights of direct beneficiaries, i.e., men, women, youth and children, depending on their involvement in the implementation. The consultation of stakeholders prior to the drafting of this Concept Note was part of this logic. Adaptation to Climate Change, seen as everyone's business, will contribute to this.	No
Gender Equality and Women's Empowerment	In its design, this project fundamentally takes into account gender equality and women's empowerment. Activities such as the construction of solar-powered boreholes with market gardening for the benefit of vulnerable women and the development of innovative income-generating activities that are resilient to climate change for the benefit of producers are planned for this purpose Activities such as the development of shea butter CVAs and the inclusion of gender in the CC adaptation guide are planned to this end.	However, since the communities of Bopa and Boukombe are predominantly patriarchal, there may be risks of inequality. However, changing gender dynamics could lead to lasting change. Population consultations noted greater participation of women in public speaking, in expressing their concerns alongside men without fear. A participatory and inclusive approach for the design and implementation of project activities and the empowerment of women for the tasks falling within their competence will contribute to the promotion of these values. PMU has a Gender and Communication manager who is responsible for mobilizing

		stakeholders - his role is to work for better involvement of women in decision-making bodies and to take their concerns into account. The "focal point on gender and climate change" within the CPS will support this mobilization.
Core Labour Rights	unequal pay between men and women and child labor are risks that could have an impact on the proper execution of activities. The project will remain vigilant to ensure compliance with the Labor Code in force in the Republic of Benin. Attention will be paid to the elimination of child labor	To be monitored during project monitoring and evaluation missions
Indigenous Peoples	There are no indigenous people in the project areas as defined by the United Nations or self-identified.T he project will ensure that all vulnerable groups will have full access to pro ject benefits .	The project will ensure that all vulnerable groups benefit fully from the actions to be implemented.
Involuntary Resettlement	Project activities will be implemented with communities in their own localities and on their own land. No resettlement of populations in new localities is planned.	To be monitored during project monitoring and evaluation missions
Protection of Natural Habitats	The project implementation strategy envisages the safeguarding of endangered plant species through reforestation, beekeeping, etc. In addition, productivity gains resulting from the adoption of resilient technologies could lead some actors to convert natural areas into agricultural land.	Protected areas in the intervention areas will be identified at the start of the project to avoid interventions by local communities as part of the project activities
Conservation of Biological Diversity	Project activities will not impact biological resources. They will help to preserve them	No
Climate Change	No further assessment is required. The activities initiated in this project aim to strengthen the resilience of beneficiary communities and support them in sustainably adapting their livelihoods and ecosystems to climate change	No
Pollution Prevention and Resource Efficiency	The project will contribute to sustainable land management, water use efficiency and water pollution prevention.	No
Public Health	The various climate adaptation interventions planned for the project should make it possible to improve the health of the beneficiary populations (reduction in the risk of disease and financial capacity to meet health care costs).	No further assessment needed
Physical and Cultural Heritage	None of the project's activities will have an impact on the physical and cultural heritage of humanity. On the contrary, the project aims to improve the traditional knowledge and know-how of the communities and to accompany them to live in harmony with nature and the variations of its components	No further assessment needed
Lands and Soil Conservation	The project is not expected to cause any damage to land and soil. On the contrary, the sustainable land management techniques and adaptive food production and processing technologies promoted by the project should contribute to strengthening the resilience of land and soil resources	No further assessment needed

Source: Fieldwork, 2023

PART III: IMPLEMENTATION ARRANGEMENTS

A. Key Stakeholders and Implementation Arrangement

Describe the arrangements for project/programme implementation.

The National Fund for Environment and Climate (FNEC), as Benin's Adaptation Fund National Implementing Entity, will be responsible for overseeing and providing financial management and reporting support for the project, as well as implementing, monitoring, and evaluating project interventions. It will ensure compliance with key policies including the grievance redress mechanism and anti-money laundering/counter-terrorism financing (AML/CTF) provisions, as well as with applicable procedures for efficient use of resources, financial management and procurement.

To ensure monitoring and supervision of project implementation, in addition to the PMU, there will be collaboration with the National Committee on Climate Change, the NDA, the Communal Cells of the Territorial Agricultural Development Agencies, the Town Halls of Bopa and Boukombe as well as non-governmental structures operating in the agriculture and nutrition sectors. The project will be executed by Caritas Benin, who in close FNEC, will ensure the requisite AF policies, procedures and technical standards will be applied to the project activities as well as in line with the policies and priorities of the government of Benin.

The project will be executed in an inclusive and participatory manner. Capacity building activities will be provided ensuring the specified expertise is utilized and training is offered in the preferred language of the communities. Local communities will carry out direct actions on the ground with the support of Caritas Benin and decentralizated and state deconcentrated structures in place in the different areas.

The project's governing bodies will include the Project Steering Committee (PSC) and the Project Technical Committee.

The Project Steering Committee (PSC) will provide strategic orientation and guidance to the project and oversee its implementation. It will monitor the ongoing progress and achievement of the project's objectives and ensure quality assurance for the project results. The PSC will approve annual work plans and budget, progress reports, and other documents submitted by the Project Management Unit (PMU). Other responsibilities include problem solving and policy decision making, approving scope changes in consultation with the AF Secretariat, and ensuring project alignment with national priorities. It will meet annually, with the abiity to meet in extraordinary sessions, calling on requisite experts as needed. The PSC is made up of representatives from the FNEC, the NDA/AF, the UNFCCC Focal Point, the Gender and Climate Change Focal Point, the National Project Directorate of Caritas Benin, the Project Coordinator, the Directorate of Rural Engineering of the Ministry of Agriculture, Livestock and Fisheries (MAEP), the project's Administrative and Financial Manager as well as representatives from Bopa and Boukombe town halls.

The Technical Project Committee (CTP), will serve as the technical arm of the CPS and will provide its technical and strategic recommendations, taking into account the latest scientific knowledge and the needs of the two municipalities. The PTC is composed of institutions with demonstrated experience and expertise in the areas of adaptation to climate change in the sectors of water resources, agriculture and food security, and early warning for implementation of the project.

The Project Management Unit (PMU) will be responsible for the overall execution of the project and will take the lead in carrying out all project activities and facilitating coordination with various stakeholders at the local and national level. This unit is made up of a National Project Coordinator (NPC), a Monitoring and Evaluation Manager (MEM), an Administrative and Financial Manager (AFM), a

Gender and Communication Manager responsible for mobilizing stakeholders (GCM) and two *Community Facilitators* (CF) based in the Communes of Bopa and Boukombe. The PMU's offices will be in Cotonou. Caritas Benin may make certain staff available for certain posts that have the relevant skills. Women will be given priority for positions when applicants have similar levels of experience.

The PMU will act as secretariat to the PSC and PTC.

B. Financial and Management Risks.

Describe the measures for financial and project/programme risk management.

Financial and project risk management measures were assessed during project design, and will continue to be monitored throughout the project implementation. Potential risks related to project implementation and mitigation measures are described in the following table.

Table 24: Financial risk management measures

Risk	Impact	Probability	Mitigation/adaptation/or mitigation measure	Responsible
Corruption and embezzlement	High	Low	Benin has an anti-corruption strategy with laws and regulations to combat corruption as well as a court of justice competent to resolve economic and financial crimes. In addition, Caritas Benin has demonstrated capacity and transparency in its project management and has rigorously implemented procedure manuals with internal control structures. Additionally, the project will utilize a system that controls and monitors project expenses.	CARITAS FNEC
Low engagement of stakeholders and project beneficiaries.	High	Low	To mitigate this risk, communities have been and will be consulted throughout all stages of project formulation. Caritas has extensive experience with the project areas increasing its ability to prevent and address low engagement. The Project Management Unit has a Gender and Communication Manager tasked with mobilizing stakeholders. knowledge management activities is another means to maintain on-going stakeholder engagement throughout the project's implementation. Additionally, all project stakeholders, beneficiaries and interested parties will have access to a grievance redress mechanism through which they can lodge grievances and complaints.	CARITAS BENIN PMU
Political instability in neighboring countries	High	Low	The project is located in the communes of Boukombe and Bopa. The commune of Boukombe borders Togo and Burkina-Faso. The instability through the area has been the subject of surveillance for several years in order to avoid terrorist threats which can destabilize the population. In addition, migratory movements from neighboring	PMU Municipalities CARITAS

Risk	Impact	Probability	Mitigation/adaptation/or mitigation measure	Responsible
			countries since the occurrence of terrorist threats and the political instability which creates waves of displaced people towards border municipalities can negatively affect the implementation of the project. Boukombe borders Togo and Burkina Faso which faces security challenges due to potential terrorist threats and migratory movements triggered by political instability. The region has experienced waves of displaced people moving into border municipalities, which may pose challenges to project implementation. Despite these potential difficulties, the project intends to significantly enhance local resilience against economic vulnerabilities. and acts as a preventive measure against the co-optation of young individuals for terrorist actions. Its contribution to stability not only addresses economic vulnerabilities but also plays a critical role in preventing the recruitment of vulnerable groups, fostering regional stability and counter-terrorism efforts. .	
Conflicts between breeders and farmers			It is no longer a secret that the pressure on arable land and the destruction of grass to install new fields creates a lack of grazing space for breeders. This often results in conflicts between breeders and farmers. Breeders are present in the project intervention area. The occurrence of these conflicts sometimes turns into ethnic or inter-village conflicts, which can seriously affect the project. However, the recent establishment of early warning systems and mechanisms for preventing, combating and managing these conflicts, of which mayors and local elected officials are members, constitutes a means on which the project can rely. In addition, it should be noted that the implementation of the law on transhumance which is underway in Benin will make it possible to reduce the occurrence of these phenomena with the definition of transhumance corridors.	Caritas Benin, PMU Municipalities
The delay in making financial resources available	High	Low	The implementation of resilience-building actions requires good planning of resources for efficient management. Punching out, or the delay in making financial resources available, can seriously impact implementation. For this, it is expected that requests are well planned, the means of control fully play their role with complete	FNEC PMU CARITAS

Risk	Impact	Probability	Mitigation/adaptation/or mitigation measure	Responsible
			impartiality in order to allow resources to be made available over time. The appropriation of management procedures by the PMU is one of the first actions to be carried out	
The delay in mobilizing human resources for implementation	High	Medium	One of the key pillars of project success is the timely availability of human resources, in particular the PMU and resource persons with key expertise to be mobilized in the implementation. Any delay observed in their mobilization may have effects on the implementation of the project, or even lead to temporary suspensions. Diligence to be observed by FNEC and CARITAS at the start of the project for this purpose.	FNEC, CARITAS
Low participation of beneficiaries	High	Low	Beneficiaries may have conflicts of interest when carrying out a task or activity. This could lead to disruptions in implementation. This risk is minimized by taking beneficiaries into account in the consultation committees and those in charge of monitoring at the local level. The project team will also have to generate more interest for the beneficiaries in order to allow them to remain diligent. Also, the project team must capitalize on the experiences of previous projects carried out in the intervention areas. However, as CARITAS is already present in these environments and has several years of experience with most of these groups, this risk is mitigated.	PMU CARITAS Municipalities
The unsuitability of profiles for positions in the project management team	High	Low	It often happens that during recruitment, there are biases which are revealed later during implementation. To this end, FNEC and CARITAS will ensure compliance with the profiles already described in the project document and the terms of reference which will be approved at the launch of the project. They must take this into account to suggest methods or tools likely to reduce bias. Due to the nature of the activities, it would be recommended to identify enthusiasts in order to generate awareness and enthusiasm among the beneficiaries.	FNEC CARITAS
The occurrence of an epidemiological crisis like Covid-19			Benin, like other countries, has been a victim of the Corona Virus pandemic. This pandemic has generated a crisis in the mobility of people and goods, this creating stagnation in activities and projects being executed during the period. In view of this consequence, it is clear that such a risk must be anticipated in the future. Although Benin is striving to strengthen its health system, there remains a risk that should not be overlooked. For this reason, CARITAS and FNEC will ensure that	FNEC CARITAS

Risk	Impact	Probability	Mitigation/adaptation/or mitigation measure	Responsible
			hygiene measures are respected and the health and safety risk analysis is carried out quarterly for better risk mitigation.	
Lack of financial control			Benin has implemented the electronic invoicing system since 2020. This system is reinforced at the level of FNEC and CARITAS by periodically audited management procedures. In addition, the project will establish, on the basis of its annual activity plan, a quarterly fundraising plan with proof of justification of previous resources made available.	FNEC CARITAS

Source: Fieldwork, 2023

C. Environmental and social risk management.

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

Main environmental and social issues of the project

As part of the project, after a survey in the various host environments of the project and among the target groups concerned (political-administrative authorities, local elected officials, local residents, community groups, etc.), the main concerns to be taken account in the execution of the project have been identified. A summary of the issues is presented as follows in the table below:

Table 25: Project issues

Project issues	
Environmental	• waste management • exhaust fumes from vehicles and motorcycles
Social	• community participation • governance • land uses
Economic	• the economic relevance of the chosen agricultural sectors • costs, including externalities

Source: Fieldwork, 2023

Analysis of project impacts

The project will improve agricultural yields and is based on intensive production systems.

However, man-made waste at project sites will need to be properly managed. Stakeholders will need to be made aware of the need to regularly maintain their means of transportation to minimize air pollutants from vehicle emissions.

In addition, workers will also be made aware of health and safety measures to avoid traffic accidents and injuries on site.

Faced with the objectives of the project which aims for the increased production and processing of quality agricultural products, to satisfy the different markets of the value chains, Caritas-Benin must put in place measures to reduce risk factors and avoid negative impacts which are associated with the activity by opting for environmentally friendly agro-industrial models and technologies.

Table 26: AF E&S Principles and Risk Assessment of Project and Mitigation Measures

AF ES Principles	Identified Risks/Impact	Risk Level	Mitigation Measures
Principle 1: Compliance with the Law	All components of the project are aligned with the texts, laws and decrees currently applied in Benin. The project complies with the legal framework for agriculture, water and environmental protection.	None	The identified project activities do not need mitigation measures since they generate no risks.
Principe 2: Access and equity	The proposed project promotes fair and equitable access for all beneficiaries and is supported by a Gender Analysis and Gender Action Plan to ensure that women and vulnerable groups have the opportunity to benefit as well. There is a slight risk that agricultural kits and trainings will not be easily accessible to those who live at a distance, have limited financial means to participate. There is a slight risk that storage facilities will not be equally accessible to all community members due to location.	LowThe comprehensive, inclusive stakeholder mapping and consultation during project consultation identified project beneficiaries.	The project has adopted a people-centred approach to project design and consulted with a wide range of stakeholders, including women and youth groups. The activities are designed to engage and benefit vulnerable people throughout project implementation. To ensure equal representation, access and participation, gender quotas have been established where relevant and necessary, and a gender assessment and action plan has been developed to provide awareness of the needs and vulnerabilities that are specific to women. To mitigate the risk of accessibility to agricultural kits and trainings and benefits of SILC, the project undertook stakeholder consultations at the project sites to solicit feedback on placement for accessibility. Based on the consultations the storage facilities will be placed. This will also mitigate the risk of any land-tenure issues.
Principe 3: Marginalized and vulnerable groups	The project's activities are oriented to ensure and promote fair and equal access to both participation in the project's activities, as well as access to the anticipated outcomes and benefits. To date, no activities have been identified which might generate negative impacts on marginalized people and vulnerable groups. Vulnerable small-scale farmers are being specifically targeted for project intervention as well as vulnerable and marginalized households to improve food security for these communities.	Low The project aims to strengthen the resilience of vulnerable populations. The stakeholder engagement was structured to ensure inclusion of vulnerable groups.	The EE, Caritas Benin, is a humanitarian and development organization that operates in Benin, focusing on poverty alleviation, community development, and empowerment initiatives. This organization has experience executing projects and has the fundamental goal to work with marginalized and vulnerable groups. Additionally, the project development team has undertaken stakeholder consultations during the concept note and proposal development stages to identify and mitigate potential risks and concerns for all stakeholders and parties, including those for vulnerable groups. This feedback has been incorporated into project design, to ensure that community-level needs are considered. The project will maintain strictly non-discriminatory approaches for all activities and is not expected to result in any risks to people with disabilities, or children and vulnerable adults. In addition, the nature of the project and a core focus is to serve vulnerable and marginalized groups as a whole, and it aims to provide tangible benefits such as the creation of jobs through processing of staple food crops and market gardening.

AF ES Principles	Identified Risks/Impact	Risk Level	Mitigation Measures
Principe 4: Human Rights	Respect for human rights is a fundamental pillar for the project. Caritas fundamental goal is to reduce inequalities and restore human dignity to people. The project is aligned with maintaining all human rights and freedoms. Thus, the project vigilantly avoids any alienating activities. The project is aligned with the constitution of Benin as well as the international laws and conventions ratified by Benin.	Low.	All parties will be consulted to avoid risks pertaining to human rights. The project respects the fundamental rights of people in the areas of intervention and therefore will not infringe on their freedom. Project activities are not expected to have any negative human rights impacts, but rather increase and enhance access to markets, jobs, and food security for all beneficiaries, especially women and vulnerable groups,
Principe 5: Gender equality and women's empowerment	Limited representation of women in decision-making processes, planning and implementation.	Low/Medium.	Although it is culturally present that in some communities, women hesitate to speak in public for fear of reprisals from men or their husbands, the implementation of this project will provide equal opportunity to men and women in carrying out activities and from project benefits. The consultations in the project intervention area, reflected that men and women are complementary in the execution of tasks. The project aims to strengthen the capacity of women to intervene and participate in decision-making processes in communities. Emphasis will be placed during training on female leadership. Additionally, Benin has adopted a law for the promotion of gender and equal opportunity to participate in decision-making positions. Gender-sensitive indicators and activities will ensure that the priorities of women and other vulnerable groups are included. In addition, the role of the gender focal point is to refine project activities, ensure gender integration in implementation and make recommendations for improvement.

AF ES Principles	Identified Risks/Impact	Risk Level	Mitigation Measures
Principe 6: Core labours rights	There are some activities which involve construction, which has some inherent occupational health and safety hazards for workers, primarily the construction of and installation of storage facilities. There are no activities planned under the project that would entail unsafe, indecent or unhealthy working conditions.	Low	The project respects the ILO's labour standards and abide by the provisions in force in the Republic of Benin. The project will ensure that minors do not work on the sites and that national health and safety legislation is applied. Any contracts will include provisions for ensuring ILO and country-level labour standards are followed. Employees will work under signed and registered contracts. A payroll register will be kept including social security contributions
	Lack of formal employment contract.	Low	The vulnerable communities concerned are already in groups monitored by Caritas Benin which will ensure that informal activities are not implemented.
Principe 7: Indigenous peoples	There are no self identified indigenous people in the Republic of Benin	None	
Principe 8: Involuntary resettlement	None of the project activities are envisaged to lead to relocation or displacement.	None	The project activities will be in areas that will not require involuntary resettlement.
Principe 9: Protection of natural Habitats	The project includes construction and installation of 2 solar powered boreholes, water distribution system, storage facilities and the rehabilitation of a water reservoir. These activities may have negative impacts on the biophysical environment, including natural habitats, if project activities are not properly monitored. The associated risks to natural habitats may include potential of pollution of waterways and land during construction, and inappropriate locations for structures.	Low/medium	The project will ensure the protection and safeguarding of natural habitats and will avoid creating nuisances likely to destroy the natural environment (such as mangroves, spawning areas, natural waterways, wildlife reserves. The PMU will have an ESS specialist that will support the mitigation of environmental risks and monitor and update the implementation of the ESMP. As required, site-specific environmental assessments will be conducted for all construction ensuring best siting and minimal negative impact or disruption by any construction activities.
Principe 10: Conservation of biological diversity	Introduction of new species and varieties. There is a possibility that some activities may lead to minor and localised impacts on biodiversity or natural habitat in agricultural settings.	Low/medium.	The project aims to rely on existing cultivation practices without introducing new varieties. It aims to improve soil fertility and introduce sustainable land management practices and utilize organic materials. Project activities will be undertaken outside of protected areas. No invasive alien species will be introduced by project activities. Furthermore, the project will not operate in any UNESCO biosphere reserves or protected sites.

AF ES Principles	Identified Risks/Impact	Risk Level	Mitigation Measures
			For climate-resilient crops to be utilized, the selection criteria will include site-species matching to ensure that selected crops are adapted to the area and are suitable for the site-conditions.
Principe 11: Climate Change	The project integrates both adaptation and mitigation measures, inherently aimed at bolstering resilience to the impacts of climate change. While agricultural activities, such as the use of fossil fuel-powered vehicles and emissions from the construction initiatives, may generate minor greenhouse gas emissions, these are expected to be minimal. Moreover, any such emissions are effectively counterbalanced by the project's use of solar powered water pumps..	Low	Solar powered pumps will be utilized in avoidance of emissions. The project will promote the use of agricultural equipment and aims to promote soil fertility. For crops requiring mineral intake, the project will ensure compliance with the doses indicated and will ensure the practice of crop rotations. The introduction of training and capacity building for farmers will help to facilitate the adoption of more climate-resilient farming practices and other agricultural techniques.
Principe 12: Pollution Prevention and Resource efficiency	The project is only expected to lead to minor and negligible release of pollutants, largely from emissions from agricultural and processing equipment.	Low	The project aims to promote sustainable land management (SLM) innovations. In doing so, it will not resort to the use of pesticides or pollutants toxic to the environment. local materials will be sourced to build the construction initiatives.
Principe 13: Public health	The project is not envisioned to have any negative impacts on public health.	Low	The project is expected to have an overall beneficial impact on the public health with improved, healthier and more resilient natural environments. Reduced unemployment and the development of SILC groups, increased income generation through agriculture and animal raising as well as capacity building and cultuvation of highly nutritious crops will also improve food security and bring nutritional benefits. The project will ensure continued awareness-raising on the need for hygiene and the promotion of national guidelines for the prevention of Covid-19 and other communicable diseases.
Principe 14: Physical and cultural heritage	No impacts on cultural heritage are anticipated. No construction or rehabilitation activities will take place on or around an area of cultural significance.	Low	Sites to be selected will not be located in a known or suspected cultural heritage area. The project will ensure in its implementation there is no impact to the physical and cultural integrity of the sites on which it will intervene. The project will promote the use of local practices and traditions where applicable, and will ensure that the project considers and actively seeks out the opinions and needs of its community members to ensure that all activities and outcomes are locally-led and focused. The project will also actively seek to obtain community endorsement at the onset of project

AF ES Principles	Identified Risks/Impact	Risk Level	Mitigation Measures
			implementation, and feedback has already been provided through consultations during the proposal development stage.
Principe 15: Soil and land conservation	The project will have positive effects on the landscape of the intervention areas and on conservation agriculture. Soil conservation and fertility restoration are key activities of the project through the planned smart agriculture	Low	The project aims to promote improve soil quality and conservation as well as teach good agricultural practices. The project will mainly focus on SLM measures The PMU ESS specialist and monitoring specialist will closely monitor to ensure there are no negative impacts on the land and soil surrounding activity sites.

D. Monitoring and evaluation

Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund.

Project implementation will begin with a launch workshop during which the work plan and the consolidated dashboard for monitoring indicators will be updated and detailed.

Monitoring, reporting and evaluation of gender-responsive projects will be carried out in accordance with AF guidelines, procedures and standards.

The monitoring and evaluation activities are as follows:

- initial planning at the launch workshop;
- quarterly and annual review and progress reports;
- annual progress reports with an update of the indicator monitoring dashboard;
- quarterly update of the risk analysis with mitigation measures;
- mid-term and final evaluations;
- annual environmental compliance and financial management audits of the project.

Table 27 presents details of monitoring and evaluation activities.

Table 27: Budgeted monitoring plan

Activity	Object	Frequency	Planned action	Responsible	Cost
Operational planning Activities	Gather all key project stakeholders, establish committees and define operational annual plan and budget	Annual	Develop the Annual Work Plan and Budget, Procurement Plan, Consolidated Dashboard for monitoring indicators	PMU	-
Monitoring progress to the results	Gathering data, project level results-based information at output and outcome level; tracking against the AF ES Policy and Gender policy	Quarterly	Prepare activity reports (quarterly, semi-annual, annual) - Set up and feed a database - Fill in the Dashboard of Follow-up of indicators ; - Prepare thematic analysis reports from the database; - Intervene in case of slower than expected progress - Identify specific risks that may threaten the achievement of expected results.	PMU	-

			Identify specific risks that may threaten the achievement of expected results.		
Monitoring and management Risks	Gathering risk management data and information	Quarterly	Identify and monitor risk management measures by means of a risk register (this register will include the measures and follow-up plans that may have been required according to the project social and environmental safeguards). - Conduct audits in accordance with the project audit procedures to manage financial risks	PMU	-
Knowledge Management	The project team identifies and considers appropriate lessons to inform management decisions.	At mid-term and at six month to the project end	- Develop training materials based on successful achievements - Organize capitalization workshops - Produce didactic films - Organize study tours for the benefit of farmers	PMU	-
Project review	The committee will ensure, from the beginning of the project, to create and maintain the conditions of synergy with the projects in progress.	Annual	- Oversee the implementation of project activities - Create and animate a consultation framework with the coordination units of all projects with which there is complementarity or it is likely to have complementarity - Manage and control the quality of deliverables	PMU	-

Source: Fieldwork, 2023

Table 28: Budgeted evaluation plan

Type of evaluation	**Period**	**Participants**	**Costs (US$)**
inception report	1 months after the project start	Community stakeholders, beneficiaries, Caritas, IE	10,000
Baseline Evaluation	3 months after the project start	External consultant. Beneficiaries, stakeholders, project intervention area	20,000
Mid-term Evaluation	2 year after the project start	External consultant, Beneficiaries, PMU, Stakeholders	20,000
Follow-up panel evaluation	Yearly	Community Stakeholders, PMU, Beneficiaries, Caritas, IE	6,000
F Pls change opening before	6 months before of the project end	External consultant, Beneficiaries, PMU, Stakeholders	16,000

Source: Fieldwork, 2023

E. Project Results Framework

Include a results framework for the project proposal, including milestones, targets and indicators, including one or more core outcome indicators of the Adaptation Fund Results Framework, and in compliance with the Gender Policy of the Adaptation Fund.

Table 29: Project Results Framework

Project Objective(s)	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
Component 1. Strengthening the resilience of local agricultural production systems to the effects of climate change (maize, cowpea, soybean, cassava and market gardening, etc.)					
Farmers adopt restoration and sustainable land management practices	Number of beneficiaries (direct and indirect) disaggregated by gender Number of smallholder farmers reporting improvements in their living conditions	0	375 producers, at least 50% of women of SILC Group	Project annual report Evaluation report	**Risk**: Problems with access to land **Assumption**: Producers concerned are members of SILC and already have agricultural land
The populations have easy access to materials/ equipment and certified seeds	number of producers reporting an increase in yields of the main agricultural crops	0	20-30% increase in crop yield of 375 producers, at least 50% of women of SILC Group	Project annual report Evaluation report	**Risk**: Unavailability of resilient seeds **Assumption**: The project collaborate with the National Institute for Agricultural Research (INRAB) for the production and provision of certified seeds
Resilient water mobilization, storage and distribution of water are built	Number of solar borehole realized at BOPA	0	2	Project annual report Evaluation report	**Risk**: Unavailability of sites for positive drilling **Assumption**: -Producers are open to innovation -Technologies are accessible
	Number of water reservoir with market gardening development rehabilitated in Boukombe	0	1		
Component 2: Economic empowerment and improved nutrition of vulnerable households					
Producers have easy access to the market and optimize the timing for the sale of harvested products	Number of households enjoying economic autonomy after the end of the project	0	375 producers, at least 50% of women of SILC Group	Project annual report Evaluation report	**Risk:** reluctance to adopt the warring system **Assumption: t**arget persons are members of SILC Groups and already apply this system

Producers engage in other income-generating activities (IGAs) that strengthen their resilience	Number of vulnerable people who have increased their incomes	0	375 producers, at least 50% of women of SILC Group	Project annual report Evaluation report	**Risk:** Lack of understanding of the concepts of income-generating activities **Assumption:** CARITAS will provide ongoing support for better adoption of IGAs
The population adopts good food practices based on local products with high nutritional values	Number of households members of SILC Group which adopted good food practices based on local products with high nutritional values	0	375 producers, at least 50% of women of SILC Group	Project annual report Evaluation report	**Risk:** reluctance to adopt good food practices based on local products with high nutritional values **Assumption:** Culinary tasting sessions will be held with a focus on local delicacies with high nutritional value
Component 3: Capitalization, dissemination of good practices and lessons learned and sustainability					
Climate change adaptation measures are taken into account in the activities of the deconcentrated structures	Number of women working in decentralised structures and NGOs with a good knowledge of gender-sensitive climate change adaptation measures	0	70 people sensitized, at least 60% are women	Project annual report Evaluation report	**Risk:** Invited structures may not send women to the sessions **Assumption:** Emphasis will be placed on the nomination of women during invitations
The good practices promoted are documented and disseminated	Number of best practices in climate change adaptation that have taken into account Gender capitalized and disseminated	0	5	Project annual report Evaluation report	-
The community early warning system is functional	Number of functioning community early warning systems	0	2	Project annual report Evaluation report	**Risk:** Lack of political will **Assumption:** CARITAS has already developed a collaboration with the local authorities that will facilitate their involvement in this project for which they have all signed a commitment

Source: Fieldwork, 2023

F. Project alignment with the Results Framework of the Adaptation Fund

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

Table 30: Alignment of the project with the Results Framework of the Adaptation Fund

Project Objective(s)[1]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (US$)
Component 1: Strengthening the resilience of local agricultural	Number of local agricultural production systems whose resilience is strengthened	Outcome 3: Strengthened awareness and ownership of	3.1. Percentage of targeted population aware of predicted adverse impacts of	842,193

production systems to the effects of climate change (maize, cowpea, soybean, cassava and market gardening, etc.)	Percent of producers increase in yields of the main agricultural crops by 20% to 30%	adaptation and climate risk reduction processes at local level	climate change, and of appropriate responses	
			3.2. Percentage of targeted population applying appropriate adaptation responses	
	Number of solar borehole realized at BOPA Number of water reservoir with market gardening development rehabilitated in Boukombe	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	252,498
Component 2: Economic empowerment and improved nutrition of vulnerable households	Number of households enjoying economic autonomy after the end of the project	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets	735,004
	Number of vulnerable people who have increased their incomes autonomy at the end of the project			
	Number of households members of SILC Group which adopted good food practices based on local products with high nutritional values		6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	322,574
Component 3: Capitalization, dissemination of good practices and lessons learned and sustainability	Number of women working in decentralised structures and NGOs with a good knowledge of gender-sensitive climate change adaptation measures	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	168,159
			3.2. Percentage of targeted population applying appropriate adaptation responses	
		Outcome 4: Increased adaptive capacity within relevant development sector	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	

		services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	
		Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets	
	Number of best practices in climate change adaptation that have taken into account Gender capitalized and disseminated		6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	
	Number of functioning community early warning systems	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level.	249,900

Source: Fieldwork, 2023

G. Detailed budget.

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

Table 31: Detailed budget by year of disbursement

Expected Concrete outputs	Output Budget	Inputs	Year 1	Year 2	Year 3	Year 4	TOTAL
Component 1 : Strengthening the resilience of local agricultural production systems to the effects of climate change (corn, cowpeas, soya, cassava, market gardening, etc.)							
Expected outcome : Increase in the yield of the main agricultural speculations from 20% to 30%							
1.1 Farmers adopt restoration and sustainable land management practices	**722193**	Diagnosis of land degradation in villages and participatory identification of resilient solutions; Capacity building of stakeholders on climate change and sustainable land management (SLM) practices; Consulting services	**440380,5**	**107437,5**	**87187,5**	**87187,5**	**722193**
1.2 Populations have easy access to materials/equipment and certified seeds	**120000**	Providing farmers with equipment and suitable seeds; Training on resilient practices.	**100312,5**	**6562,5**	**6562,5**	**6562,5**	**120000**
Expected outcome : Installation of infrastructure resilient to climate change for the promotion of agriculture and livestock							
1.3 Resilient water mobilization, storage and distribution structures are built	**252498**	Development of resilient boreholes and water reservoirs; Training of farmers and breeders on IWRM techniques and water saving	**212685**	**13271**	**13271**	**13271**	**252498**
Component 2 : Autonomisation économique et amélioration of la nutrition des ménages vulnérables 220041-217295							
Expected outcome: Increase in income of vulnerable agricultural households							

2.1 Producers have easy access to the market and reduce the sale of products at harvest	**217295**	• Analysis of the economic precariousness of agricultural households and participatory identification of resilient warrantage modalities; • Establishment of warrantage infrastructures; • Training of village groups on stock and market management techniques	**179162,3**	**13626,25**	**13626,25**	**10880,25**	**217295**
2.2. Producers carry out other income-generating activities (IGA) which strengthen their resilience	**517709**	• Study of methods of integrating beekeeping, market gardening and/or fish farming, and resilient production techniques into the farming systems of agricultural populations; • Training of stakeholders on innovative income-generating activities; • Supply of materials and equipment adapted to members of SILC groups	**4533,5**	**504108,5**	**4533,5**	**4533,5**	**517709**
Expected outcome : Improvement in the nutritional status of children under 5, pregnant women and nannies in vulnerable households							
2.3. Populations adopt good eating practices based on local products with high nutritional values	**322574**	• Diagnosis of malnutrition and food insecurity in villages and participatory identification of appropriate measures for changing nutritional behavior ; • Strengthening the capacities of vulnerable populations in food and nutritional equipment, knowledge and know-how based on local resources;		**322574**			**322574**

		• Community support for demonstration and evaluation-consulting sessions.					
Component 3 : Capitalization, dissemination of good practices and lessons learned and sustainability							
Pérennisation des acquis							
3.1. Climate change adaptation measures are taken into account in the activities of decentralized structures	**147985**	• Capacity building for decision-makers on the integration of CCA into local development activities and programs; • Training of local actors for the collection of information applied to the management of the ACC.		**49328,3**	**49328,3**	**49328,3**	**147985**
Capitalization and dissemination of good practices							
3.2. The good practices promoted are documented and disseminated	**270074**	• Dissemination of project results; • Raising awareness of the populations on the project's achievements and the methods of their exploitation; • Sharing experiences acquired with the international community; • Strengthening community mechanisms for managing climate disasters at the local level	**37523**	**57697**	**68427**	**86253**	**270074**
Cost of operational components	**2570328**		**992025**	**1074605**	**242936**	**260762**	**2570328**
Project execution cost (9.5 %)							
Project execution costs		**Salaries of project staff**	**36200**	**36200**	**36200**	**36200**	**144800**
		Computers and equipment	**12500**				**12500**
		Office supplies	**1070**	**1070**	**1070**	**1070**	**4280**
		Organization of seminars and workshops	**5000**			**5000**	**10000**

		Communication	**3125**	**3125**	**3125**	**3125**	**12500**
		Travel	**8000**	**8000**	**8000**	**8000**	**32000**
	Monitoring and evaluation	**Project launch**	**5101**				**5101**
		Mid-term evaluation			**8000**		**8000**
		Final Evaluation				**8000**	**8000**
		Project Audit				**7000**	**7000**
SUBTOTAL			**70996**	**48395**	**56395**	**68395**	2**44181**
Fees for implementing project							**239233**
Fees for implementing project	**239233**	**Policy support, portfolio management**	**5967**	**5967**	**5967**	**5967**	**23 867**
		Reporting, awareness	**8605**	**-**	**8605**	**-**	**17 210**
		Supervision, financial management	**9303**	**9303**	**9303**	**9303**	**37 212**
		Quality assurance, supervision reports, supervision of completion and evaluation	**18538**	**-**	**-**	**-**	**18 538**
		Communication and information	**5516**	**5 516**	**5 516**	**11035**	**27 583**
			76634	**49491**	**58096**	**55010**	**239233**
TOTAL REQUESTED							**3.053.742**

Source: Fieldwork, 2023

H. Disbursement schedule

Include a disbursement schedule with time-bound milestones.

Table 32: Time schedule for disbursement

	Upon signature of Agreement	One Year after Project Start a)	Year 2b)	Year 3	Total
Scheduled date	June 2025	June 2026	June 2027	June 2028	
Project Funds	1 063 021,00	1 123 000,00	299 331,00	329 157,00	2 814 509
Implementing Entity Fees	76 634	49 491	58 096	55 010	239 233
Total	**1 126 768**	**1 181 202**	**357 733**	**388 039**	**3 053 742**

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

A. Record of endorsement on behalf of the government (See Annex 1)

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

Prof Martin Pépin AÏNA, General Director of Environment and Climate, Ministry of Living Environment and Transport in charge of Sustainable Development	Date*: (Month, day, year)*

B. Implementing Entity certification

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Growth Programme for Sustainable Development (PC2D), National Long-Term Outlook Study "Benin Alafia 2025, Government Action Programme "Bénin révélé" 2021-2026, National Development Plan (NDP) 2018-2025, National Adaptation Plan for Climate Change Management Policy (PNGCC) , Nationally Determined Contributions (MCVDD, 2021), National Adaptaton Plan for Climate Change (MCVDD, 2022) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Name & Signature

Implementing Entity Coordinator:

Le Directeur

Dr Appolinaire D. GNANVI
General Director

Date: *June, 13, 2024*	Tel. +229 97192464 and email: gnanviappolinaire@yahoo.fr

Project Contact Person: **Fortunée DOSSOU WOROU**
Director of Financial Resource Mobilization

Tel. +229 95966314 And Email: ellidos@yahoo.fr

ANNEXES

Annex 1: Endorsement letter

ADAPTATION FUND

Republic of Benin, Cotonou, January 7, 2022

N°022/DGEC/MCVDD/SD

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

Subject: Endorsement for project to strengthen food security and community resilience to climate change in the communes of Boukombe and Bopa.

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

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by National Fund for Environment and climate and executed by national executing entity.

Sincerely,

Le Directeur Général

Prof Martin Pépin AINA
General Director of Environment and Climate.

Annex 2: Gender assessment report

With the aim of preparing the complete document of the PROJECT TO STRENGTHEN FOOD SECURITY AND COMMUNITY RESILIENCE TO CLIMATE CHANGE IN THE COMMUNES OF BOUKOMBE AND BOPA (PSFS-CR) to be submitted to the Adaptation Fund, in collaboration with the Implementation Unit which is the National Fund for the Environment and Climate (NFEC), a field mission was carried out. The aim of the mission was to collect field information in the project areas. As such, and in order to fill out the corresponding parts of the complete project document, a gender analysis was carried out with a view to refining information on the social construction of relationships between women and men, and between people with other gender identities in the communities interested in the project, the distribution of productive resources among them and the resilience of livelihoods and communities.

Reminder of the objectives of gender analysis

The overall objective of the gender assessment aims to ensure not only that the proposed project intervention will benefit all layers of the areas concerned, namely poor and rich, men and women, people in vulnerable situations, but also that the project does not constitute an opportunity to increase the vulnerability of communities.
More specifically, the evaluation aims to collect data disaggregated by gender on activities and access to productive resources in relation to the climate vulnerability of the areas targeted by the project. To achieve this, the evaluation planned to carry out the following activities in the project areas:

1. Identify the social groups and productive resources most exposed to climate risks;
2. Understand crop systems according to gender;
3. Identify the roles and responsibilities of men, women and other people in vulnerable situations in the context of production activities;
4. Identify the main gender constraints, needs and interests differentiated by gender;
5. Appreciate control and access to productive resources according to gender;
6. Appreciate the perception of climate variability and adaptation measures expressed according to gender;
7. Identify the impacts of climate change according to gender;
8. Identify endogenous solutions differentiated by gender.

Methodology

Methodological approach

The implementation of the gender assessment can be summarized in three (03) stages, namely: i°) the recruitment and training of a team and the development of data collection tools; ii) data collection focused on literature review and interviews (group and individual); and, iii) data processing, analysis and writing of the general report.
As part of this evaluation, the gender approach was crossed with differentiation factors deemed relevant in the form of variables. Questions of social relations between women and men in terms of difference in sex, age group, economic and social class.

Development of data collection tools

In order to collect data in the field, field surveys were carried out in the project localities. To do this, tools were designed and made available to the collection team. These tools include: i°) an interview guide (which provides guidance on the aspects to be addressed, the data to be collected according to the actors, stakeholders, etc.); questionnaires; a camera; notepads).

Collection of data

The collection work was carried out in three (03) stages, first through a scoping session, then through the collection of primary data and finally through the collection of secondary data.

1. *Primary data collection:* collection was carried out through discussion groups and interviews with potential beneficiaries of the project (farmers and socio-professional groups), representatives of administrative entities, representatives of extension services, etc. The people met were divided into groups according to gender and social category. A total of 219 people representing 52 groups and associations of potential beneficiaries were interviewed. Conducting the interviews allowed us to collect data on gender analytical issues related to the division of labor, access, control of resources, opportunities and constraints. The interviews were conducted following a participatory approach marked by the commitment of women and young people.

2. *Secondary data collection:* it was carried out through a review of relevant documents related to gender and climate risks, in particular study reports, scientific journal articles, national and municipal planning documents, project reports , national statistics.

Primary data collection environment

The collection took place in the PSFS-CR project areas, namely the Bopa and Boukoumbé communes respectively distributed in the departments of Mono and Atacora and in agroecological zones IV and VIII. 02 target districts were chosen by municipality.
In Bopa, the investigation took into account Yêgodoé and Badazouin. In Bopa the main activities practiced are agriculture, hunting and fishing.
In the commune of Boukoumbé, the districts of Manta and Natta were consulted. In Boukoumbé, agricultural production constitutes the main source of wealth creation; (MDP 3) and occupies 85% of the active population. In terms of constraints, only 66% are potentially in good fertility summer.

Table 1: Characteristics of cultural practices in the PSFS-CR project areas (source adopted from the MDP)

Project areas and agro-ecological zones concerned	Main activities carried out in the project communes	Major economic activities in agroecological
BOUKOUMBE (Zone IV: West Atakora Zone)	▪ Cereal crops (food base; 45%) ▪ Tuber crops (28%) ▪ Oilseed plant crops (especially legumes) (7%) ▪ Cotton and other cash crops (5%) ▪ Vegetable cultivation (15%)	**Main cash crops:** cotton and peanuts **Main cereals:** rice, voandzou, corn, sorghum, millet and fonio) **Emerging crops:** corn, rice, voandzou yam, vegetables
BOPA (Zone VIII: Fisheries zone)	▪ Agriculture, Fishing and Hunting (73.8%), ▪ Commerce, catering and accommodation" (9.9%) ▪ Manufacturing industries (6.2%) ▪ Other services (6.5%)	**Main activity:** Fishing, **Main crops:** Cassava (50.1%) Corn (25.1%) Bean/Cowpea (13.7%) **Other crops:** (Tomato, Fresh vegetables, watermelons, Yam, etc.) and plantain.

Source : Fieldwork, 2023

Groups met and participants consulted

Four target groups were considered for different interviews.

1. Young women aged under 50
2. Young men aged under 50:
3. Men aged over 50
4. Women aged over 50

The choice of participants was made on the basis of a differentiated approach based on criteria such as gender, age, economic activity

Processing, analysis of data and writing of the general report

The information collected was inventoried and processed. A transcription made it possible to organize the data in a format directly accessible for analysis, by putting them in writing so as to facilitate reading and have a faithful record of them. The observation notes, note-taking and recorded data were transcribed/entered into Word.

A grid of analysis categories was constructed on the basis of criteria and indicators defined with the team of investigators.

Gender analysis was used to disaggregate and proportion the data by sex in the main areas and highlight and explain: 1) Roles in terms of the particularities of socially assigned men, women, vulnerable people and the relationships that exist between them ? (who takes care of what within the household, who significantly influences the decision) and gender norms (what roles and places of women and young people in the household and in the decision-making chains) linked to the themes of the consultation; the convergences, divergences and significant singularities between groups, sexes, age groups, levels of education, ethnic groups, and other variables retained; 2) Knowledge of Climate Change and access to resources (climate risks, impacts

depending on the risk; most impacted socio-professional groups); 3°) The techniques adopted by the populations (Water resources management; Sustainable soil management; Access to seeds; Elements of solution); 4°) Benefits of the Project (social, economic and environmental benefits).

The evaluation proceeded to triangulate the data from the documentary review with the results of the field investigations in the discussion, conclusions and recommendations of the consultation.

RESULTS AND GENDER ANALYSIS

The gender analysis of the project focuses on the communities encountered because they constitute the potential beneficiaries of the project. In total, 108 people were consulted in Bopa and 111 in Boukoumbé. The distribution of said people according to gender is presented in tables below.

Municipality of Bopa

Table 2: Situation of people met

ARRONDISSEMENTS	M	W	Total	% YM	% YW	%W
YEGODOE	**35**	**25**	**60**	**35**	**21,66**	**41,66**
BADAZOUIN	37	11	48	50	25	

Source: Fieldwork 2023

Table 3: **Situation of the associations/groups represented**

District	Group/Association				
	Men	***Women***	***Young men***	***Young Women***	***Total***
YEGODOE	0	05	07	04	16
BADAZOUIN	0	05	07	0	12
TOTAL		10	14	04	**28**

Source: Fieldwork 2023

Table 4**: Distribution of the workforce of the associations/groups represented**

Districts	M	W	Total	% YM	% YW	%W
YEGODOE	144	414	558			74,2
BADAZOUIN	284	167	451			37,03
TOTAL	428	581				57,58

Source: Fieldwork 2023

Municipality of BOUKOUMBE

Table 5: **Situation of people met in Boukoumbé**

Districts	M	W	Total	% YM	% YW	%W
MANTA	**33**	**35**	**68**	**27,94**	**35,29**	**51,47**
NATTA	26	17	43	73,75	**26,25**	**39,53**
TOTAL	59	52	111		46,85	

Source: Fieldwork 2023

Table 6: **Situation of the associations/groups represented during the consultations**

DIstricts	Group/Association				
	Men	***Women***	***Young Men***	***Young Women***	***Total***
MANTA	01	02	10		13
NATTA	02	03	06		11
TOTAL	03	05	16		24

Source: Fieldwork 2023

Table 7**: Distribution of the workforce of the associations/groups represented**

Districts	M	W	Total	% YM	% YW	%W
MANTA	127	74	201	**53,23**	**11,94**	36,81
NATTA	118	42	160	73,75	26,25	37,03
TOTAL	**245**	**116**	**361**			**57,58**

Source: Fieldwork 2023

Socioeconomic analysis of the project area

The analysis of the Municipal Development Plans (PDC) covered by the project shows several social disparities. In Bopa, the diagnosis shows that the weight of socio-cultural and religious constraints forces the woman to stay and remain at home under the submission of the man. This is what justifies the virtual absence of women in local decision-making bodies. Of the seventeen (17) elected officials of the municipal council and district heads of Bopa, there are no women.

In general, we note in terms of gender inequalities, it appears that women have poor access to and control over land, difficulty accessing and controlling production factors and income, low involvement in local authorities. local decision-making. When it comes to decision-making, including in the home, men mostly make decisions alone without consulting women.

Boukoumbé, several disparities still militate against the accomplishment of the vision of the Municipality which aims to be, by 2030, well governed, resilient to climate change, with improved food and nutritional security, based on the promotion of activities economic and cultural which promote the empowerment of women and the employment of young people". According to RGPH 4 data, women represent nearly 51% of the population of the commune of Boukombe and work in several sectors of activity, notably in agriculture and processing, but constitute a vulnerable layer. However, women face various forms of violence that hinder their empowerment. From 2012 to 2017, the cumulative cases of violence reported amounted to 193 and the cases of pregnancy in schools 182 cases. The main causes of this situation are marital conflicts, lack of monitoring of children, sex education considered a taboo, impunity of perpetrators of acts of violence, illiteracy and low level of education, marriages forced and premature. Furthermore, in the field of agriculture and processing, women's activities receive very little support. They are marginalized in terms of access to production factors (fertile land, agricultural inputs and equipment, etc.)

The CPS counts an annual average of 30 cases of violence against women and 23 pregnancies in schools, where there is already unequal access for girls, boys, Fulani and disabled people as well as their retention in school (dropout rate = 16.23% (13.92% boys versus 19.26% girls). In terms of social protection, 343 Orphans and Vulnerable Children (OVC) are not taken care of. In terms of health, the populations are reluctant to access health care due to the weight of tradition. The population does not make appropriate use of food because of socio-cultural constraints, insufficient information, etc. According to the literature, approximately 49% of women and 46 % of children have low dietary diversity.

Politically, women are very poorly represented due to their low level of education and lack of leadership; out of 17 Municipal Councilors, there are no women.

Table 8: Profile of economic activities practiced

Districts	Agriculture							Transformation							Breeding						
	M	W	T	%W	%YW	%YM	%DP	M	W	T	%W	%YW	%YM	%PH	M	W	T	%W	%YW	%YM	%DP
BADAZOUIN	34	78	112	58,93		16,07	0,89	10	77	87	88,51		11,49	5,74	-	-	-	-	-	-	-
YEGODOE	76	80	156	51,28	-	25	-	53	193	246	78,46	26,42	0,81	-	-	-	-	-	-	-	-
NATTA	55	34	89	38,2		61,8	-	-	-	-	-	-	-	-	63	8	71	11,27	-	-	-
MANTA	13	4	17	26,67	-	76,47	-	-	20	20	100	-	-	-	19	-	19	-	-	-	-
TOTAUX	178	196	374			179,34	0,89	63	290	353			12,3	5,74	82	8	90	-	-	-	-

Source: Fieldwork 2023

Légende :
M = Men;W= Women;YW = Young Women;YM = Young Men;T = Total;% = Proportion

Table 9: Gender distribution of activities by Bopa group/association

Activities	%Men	%Women
Agriculture	41,04	58,6
Transformation	18,92	81,08
Breeding	0	0

Source: Fieldwork 2023

Table 10: Gender distribution of activities by Boukombe group/association

Activities	%Men	%Women
Agriculture	64,15	35,85
Transformation	0	100
Breeding	91,11	8,89

Source: Fieldwork ,2023

Comments: Based on the statistics revealed by the distribution of economic activities, it is clear that men, women and young people are involved in all production activities. However, it should be noted that women are more present in agricultural activities and in the processing of agricultural products. The activity profile table shows in Bopa, for example, a rate of 58.6% women compared to 41.04% men in the field of agriculture; and 81.08 women in transformation compared to 18.92 men. In Boukoumbé the proportion in agriculture is 64.15 men compared to 35.85 women; 100% women in processing and 91.11 men in breeding compared to 8.89 women. A cross-reading with the data from the literature review allows us to note that the proportion of women cash crop farm managers is very low. Women play a leading role in the production process of food crops, in the processing and marketing of agricultural products. In the family fields, they carry out tasks such as sowing, weeding, watering, harvesting, transporting and drying the products while the men take care of the activities of clearing, plowing, manuring and storage. Furthermore, plots for the production of food crops for household food are reserved for women. Depending on the group, reproductive activities remain exclusively female responsibilities and remain unchanged throughout the season.

Table 11: Gender distribution of workloads on farms

Workloads	Rate for women	Rate for men	Constraints encountered in production	Impact on production/productivity
Market gardening				
Clearings and preliminary works	30%	70%	Access to agricultural land The nature of the relief, the inadequate equipment	Poor optimization of agricultural space, Yield loss
Preparing the seedbed	40%	60%	-	-
Sowing	50%	50%	Seed availability	
Watering	50%	50%	Water availability	Poor growth or even loss of seedlings
Weeding and maintenance	40%	60%	Inadequate equipment	Poor quality interviews leading to poor performance
Harvest	70%	30%	The impassability of the tracks, the lack of equipment	Loss of part of the harvest,
Marketing	80%	20%	Low yields	Sale of harvests, difficult flow of products
Perennial crops				
Clearings and preliminary works	30%	70%	Access to agricultural land The nature of the relief, the inadequate equipment	Poor optimization of agricultural space, Yield loss
Preparing the seedbed	40%	60%	-	-
Sowing	50%	50%	Seed availability	
Watering	50%	50%	Water availability	Poor growth or even loss of seedlings
Weeding and maintenance	40%	60%	Inadequate equipment	Poor quality interviews leading to poor performance
The cut	20%	80%	Inadequate equipment	
Marketing	50%	50%	Low yields	Sale of harvests, difficult flow of products

Source: Fieldwork 2023

<u>Comments</u>:

Table N° 11 summarizes the statistics relating to the expression of the people met on the gender distribution of productive tasks. It emerges from the literature that both domestic and productive tasks are distributed between men, women and children, girls and boys, as follows:

Complementary activities between men and women in the context of production activities which are based on both objective and subjective factors. In the first case, activities which require more energy are reserved for men and in the second case, certain tasks would be assigned which would not require specific intelligence to be carried out. In the case of groups/associations for example, the men would take care of preparing the crop plots for cutting

and burning while the women would carry out the collection and removal. While the men would do the plowing, they would be in charge of fertilizing and sowing, tasks that they would have to finish the same day before moving on to others. They would also be responsible for the daily irrigation of the fields and the supply of related water during the cultivation period, repeatedly, within the limits of the cultivated areas. Men manage work related to harvest storage. Women also take care of their individual field for those who are "endowed" with it; but if necessary they should take charge of it only once their responsibilities in the household field are accomplished. These would mainly be market garden crops, intended for household consumption. In addition, all work in the fields would generally be done manually, with traditional tools, for both women and men.

Productive activities involving men and women: this is the case for the activities of collecting, crushing nuts, selling heating oil, etc.

Reproductive activities exclusively reserved for women: For all groups, reproductive activities remain exclusively female responsibilities and invariable in all seasons. They must therefore combine these tasks with those of production, including domestic work and childcare. Women find themselves throughout the day with little time for themselves. These would take them a minimum of 13 hours of time per day, rising to over 18 hours, as they were performed at once. It should be noted that the burden of work falling on women is enormous; which wipes out his time for rest and leisure.

Community activities: in addition to community activities of a ceremonial nature; there are activities of a utilitarian nature in which women could participate for their development. These include information and training sessions, agricultural extension sessions and others organized by microfinance and health associations, etc. But in the absence of material time.

Table 12: Access and control of resources

Main Resources Used	Access		Control (who has the power to decide?)
	Access conditions	Who uses it?	
Natural resources			
- Land	Inheritance, donation, rental and purchase	Men and women	Men
- Water	Wild exploitation, irrigation, drilling, water reservoirs	Men and women	Men and women
Material resources			
Means of transportation	Purchases, rentals, assistance	Men and women	Men and women
Water points	Purchases	Men and women	Men and women
Agricultural tools	Purchases, rental	Men and women	Men and women
Inputs	Purchasing, Composting	Men and women	Men and women
Human ressources			
Access to Training	Being part of an association, the theme	Men and women	Men and women
Access to technologies	Faire partir d'une association, la thématique	Men and women	Men and women
Financial ressources			

Access to credits	Material, financial and human capacities, associations	Men and women	Men and women
Access to tontines/savings	Financial capacities, associations	Men and women	Men and women
Access to other sources of income			
Life in community			
Participation in community activities	Associations	Men and women	Men

Source: Fieldwork, 2023

Comments: In most cases, it appears that women do not control access to resources such as land and more generally to the means of production. They are also very little visible in decision-making bodies, which limits their access to services, credit, inputs and opportunities created by development projects. These limits have negative effects on productivity, production but also sustainability and the ability of women to participate fully in the development process. This question of access and control, predominant in the land question, is also relevant in production activities. On the issue of land despite the reforms undertaken by the Beninese legislator in the land code, the weight of traditions continues to hinder women's rights; they are confronted with socio-cultural constraints resulting from the patriarchal system which limit their access to assets and productive resources, thus reducing their economic autonomy, their income, and even their purchasing power. In 2017, 36.4% of men owned land compared to only 13% of women. Additionally, women are less likely to own a financial asset in the form of a bank account or to own assets such as cell phone.

Table 13**: Structure of decision-making power**

Type of decision	Who makes the decision?		
	Woman only?	Man only?	Man and woman ?
Decision within households			
Education of children			x
Financial management		x	
Domestic activities			x
Health			x

Source: Fieldwork, 2023

Comments: Based on the group discussions, the question of authority and power was not addressed. However, it should be noted that within households decision-making does not belong to the woman; we note that women do not have the capacity to make decisions that concern their own life. When the decision concerns financial management it is made by the man only. But for other decisions concerning the household the decision often falls to both the man and the woman; sometimes his opinion is not even required.

Knowledge of climate change and its effects according to gender

Based on the elements of the responses obtained to the questions administered to the different groups, it appears that the men, women and young people interviewed have a good knowledge of the phenomenon of climate change, its manifestations and its effects.

Table No. 14 highlights the needs expressed by the people met according to their specific constraints. It essentially emerges that the people met expressed three (03) main needs, namely: 1°) strengthening their capacities; 2°) facilitation of access to land; 3°) equipment provision.

These needs are taken into account in a gender action plan which will be attached to this evaluation.

Table 14: Main constraints and needs according to gender

Subject	Man	Woman	Man and woman
Constraints			
Acces to land		x	
Access to water resources			x
Access to seeds			x
Access to training			x
Availability of material resources			x
Needs			
Capacity building			x
Facilitate access to land		X	
Equipment supplies			x

Source: Fieldwork, 2023

Annex 3: BOPA Stakeholder List

<table>
<tr><td rowspan="2">Bopa</td><td>Institutional Actors</td><td colspan="3">For institutions
• Departemental Directorate for Living Frame and Sustainable Development of Mono (DDCVDD-Mono) ;
• The Departemental Directorate of Water and Mines of Mono (DDEM-Mono) ;
• National Fund for the Environment and Climate (FNEC) ;
• Territorial Agency for Agricultural Development (ATDA pole 7)
• Municipalities section of Water, Forests and Hunting (SCEFC)</td><td>For the Local stakeholders;
• The Chief of arrondissement of BADAZOUIN ;
• The chief of Arrondissement of YEGODOE
• Office staff of the Municipality

For the Civil Society Actors (ONGs, association)
• GROPERE ONG ;
• BUPDOS ONG ;
• AVPN ONG ;
• APS ONG ;
• ONG MORIJA ;
• Plan Bénin.</td></tr>
<tr><td>Badazouin</td><td>Youth Group</td><td>Womens' groups</td><td>Elders group</td><td></td></tr>
<tr><td></td><td>• Group Gbètamimin of Badazouin : 32 members at the rate of 17 women, 46,87% men, 53,13 % women
• Group Vidjinnankpon of Badazouin centre : 200 at the rate of 80 women : 60 % d'men ou 40% women
• Association of students parents Hombètè : 11 at the rate of 3 women, 72,72 % men or 27,28 % women
• Group Solayon Hombètè : 32 members at the rate of 31 women : 96, 875% women
• Association of farmers of Akplénou : 10 members at the rate of 4 women, 60 % men or 40 % women
• Association of farmers of Hombètè : 20 members at the rate ofe 8 women, 60 % men ou 40 % women
• Association of photographers of Hombètè : 8 members at the rate of 3 women, 62,5% men 112ither 37,5% women</td><td>• Group MAHOUEKPO : 35 members of which 5 men and 4 people with disabilities, 85,71 % women
• Group TONAGNON (production of plantain banana and sweet banana) : Size 21 members of 6 men, 71,43 % women
• Group MADOKPON (products maize, cassava, cowpea and proceesed cassava into gari) : size 28 members of which 2 men, 92,85 % women
• Group GNONNANMEDE (products cassava, maize) : size 30 members of which 5 men, 1disabilitiy women, 83,33% women
• Group ALODOALOME (processing of soya into cheese, milk of soya, cake of soya) : 24 members in the Group of which 3 men, 87,5% women</td><td>• Group TOFFA : 12 members (4 women/ 33% women)
• Group ELAVAGNON : 9 members ((4 women/ 44% women)
• Group KONDOKPO : 20 members (10 women/ 50% women)
• Group DIEU PEUT TOUT : 5 members (2 women/ 40% of women)
• Group ALOLEALOME : 15 members (5 women/ 33% women)</td><td></td></tr>
</table>

		Youth groups	Young women's group	Group of wise men/old men	Wise Women Group/old women
	Yègodoé	• Association of craftsman of Tohouéta Kpodji : : 54 members at the rate of 36 women, 66,66% women • Association of mechanics of arrondissement of YEGODOE : 10 men only, 100% men • Group of processors of Soya into cheese at Lonfin (group no longer operational due to the lack of means) : 30 people at the rate of 28 women, 93,33% women • Association of motobike taxi drivers of of l'arrondissement of YEGODOE : 18 men only, 100 % men • Association for savings ''Minonhounzon'' of Djékian : 48 members at the rate of 25 women : 52,08 % women • Association of farmers ''Ayidédagni'' of Tohouéta Aklo: 54 members at the rate of of 30 women : 55,55% women • Association des cultivateurs HAVIVI de Vèganmè : 60 members à raison of 45 women, 75 % of women	• ONG NONVIGNON (child hygiène and sanitation, advice to pregnant women) :60 members at the rate of 10 men : 83,33 % women • ONG GBENONKPO (soya processing) : 30 people at the rate of 5 men, 83,33% women • ONG AYIDEKON (Sanitation, Processing) : 40 women only : 100 % • ONG AYIDEDAYI : 40 members at the rate of 10 men : 75 % of women	• Group MAHOUGNON (production of selectionned palm tree, red palm oil processing and marketing) : 27 members of which 3 women, eitheir 11,11% of women • Group Minonhouzon : 30 members, of which 15 women, eitheir 50 % of women • Group GBENONKPO (production of palm nut, processing of red palm oil and marketing) : 15 members of which 2 women, either 13,33%	• Group NONVIGNON of sweeping, de noix de palme en huile rouge : Effectif 42 members uniquement des women : 100% women • Group ESSOGBE de transformation de noix de palme en huile rouge : Effectif 9 members uniquement des women : 100% women • Group SILC NONVISSI de transformation de noix de palme en huile rouge et de soja en fromage : Effectif 30 members dont 4 men : 86,66% • Group NONVIDJEKPO de transformation de manioc en gari, noix de palme en huile rouge : Effectif 11 members dont 3 men : 72,72 % women •Group AYÏHA de transformation de manioc en gari : Effectif 12 members dont 2 men : 75 % of women,

Source: Fieldwork, 2023

Annex 4: Boukombe stakeholders

Boukombe	Institutional Actors	For institutions • the Departemental direction of Agriculture, Livestock and Fisheries (DDAEP); • The National Fund for Environment and Climate (FNEC); • The Territorial Agency for Agricultural Development) - For the local stakeholders; • the office staff of the municipality. For the civil society (ONGs, association) • CERD BENIN; • CPC.			
	Natta	Youth Group	Womens' groups	Group of Sages	
		• Association of seed companies of Koutchamagou : 25 people at the rate of 7 women : 28 % women ; • Association of breeders of Natta : 38 people at the rate of 8 women : 21,05% women ; • Association of maize farmers of Kouporgo : 32 people at the rate of 9 women : 28,125% women ; • Association of traders of small-ruminants and poultry of Boukombe : 33 men only : 100% • Association of fonion farmers of Kouporgo : 5 at the rate of 3 women : 60 % women • Village Cooperative of soya farmers of Katenga : 27 at the rate of 15 women : 55,55% women	• Group SILC « BATITENA ; • Group « TIBOYAKA » ; • Group « TIBOBENA ».	• Association of rice farmers (men, women, jeunes) ; • of soya farmers (men and women).	
	Manta	Young men Group	Young Women group	Wise men group / Old men	Wise women group/ old women

		• Association of cotton farmers of Boukombe ‘’ICOM’’ : 7 men only • Association of students of Manta ‘’HAEM’’ : 35 students at the rate of of 9 women, 74, 28 % men et 25,72% women • Association of developpement of Manta ‘’ADAM’’ : 7 people at the rate of 2 women 71,42 % men et 28,58% women • Association of craftsmen of Boukombe ‘’Zénan Bénin’’ : 7 people at the rate of 2 women, 71,42 % men et 28,58% women • Coopérative of maize farmers t of Manta, dikpoko village 1 : 11 at the rate of 4 women, 63,63% men et 36,37%% women • Association of traders of poultries and small-ruminants: 19 men only, 100% men • Association of community development of Koutango of Manta : 15 people at the rate of 4 women ,73,33% men et 26,67% women • Association info foot of Manta : 9 people at the rate of of 2 women, 77,77% men et 22,23 % women • Association for Manta restoration : 5 at the rate of 1 woman, 80 % men et 20% women • Association of car drivers of Manta : 16 men only : 100% men		• Association of wise: 35 members of which 16 women : 45,71 % women	• Group SILC « BASSA » who counts 15 members of which 14 women et 1 man (secretary) : 93,33% women • Group « TIYOTITOITOUBOU » count 20 members exclusively of women, the Group process shea butter

Source: Fieldwork, 2023

Annex 5: Regulatory framework for environmental assessment in Benin

- The legal, legislative and regulatory framework for the environmental assessment of the project is set by the provisions of:
- The Constitution of December 11, 1990;
- Law 65-25 of August 14, 1965, governing land ownership in Dahomey;
- Law 98-030 of February 12, 1999, relating to the framework law on the environment;
- Law 83-003 of May 17, 1983, establishing the mining code of the Republic of Benin as well as its implementing texts;
- Law 97-028 of January 15, 1999, relating to the organization of territorial administration in the Republic of Benin;
- Law 97-029 of January 15, 1999, relating to the organization of Communes in the Republic of Benin.
- Law No. 2013-01 establishing the land and state code in the Republic of Benin.
- All of these legislative and regulatory texts make it possible to resolve environmental issues, land expropriation, management of quarries and borrow areas.

Legal provisions applicable to the project

The constitution of the Republic of Benin provides in article 27 that "every person has the right to a healthy, satisfactory and sustainable environment and has the duty to defend it. The State ensures the protection of the environment."

To ensure this protection, Law No. 98-030 of February 12, 1999, relating to the framework law on the environment, prescribes in its article 88 that "no one may undertake developments, operations, installations, plans, projects and programs or the construction of works without following the environmental impact study procedure, when the latter is required by laws and regulations." The principles of this law are defined through:

• article 3-c: the protection and development of the environment must be an integral part of the economic and social development plan and the strategy for its implementation;

• article 3-d: the different social groups must intervene at all levels in the formulation and execution of national environmental policy; this principle is crucial in the fight against poverty and promotes the development of the country;

• article 3-f: any act detrimental to the protection of the environment engages the direct or indirect liability of its author who ensures compensation.

This consideration of the environment materializes in the impact study, monitoring and environmental audit procedures placed under the administrative responsibility of the Minister in charge of the environment and under the technical responsibility of the Beninese Agency for the Environment (ABE) in accordance with articles 11 and 12 of the law.

• law no.87-015 of September 21, 1987 on the public hygiene code of the Republic of Benin: it legislates on homes, noise, water, pollution of the natural environment, industrial installations, beaches, classified establishments, health police. For a long time it was little popularized until the advent of decentralization (2003) which encouraged the adoption of implementing texts by mayors;

• law no.87-016 of September 21, 1987 establishing the water code in the Republic of Benin: it governs the management of water and hydrological resources from a quantitative and qualitative point of view; it remains rarely applied because it is considered not adapted

to the real context of the populations. A new code is being developed which must integrate decentralization, participatory management and basin management.

• law no.93-009 of July 2, 1993 on the forest regime in the Republic of Benin: it lays down the provisions on "the management, protection, exploitation of forests, trade and industry of forest and related products ". The forest code defines the different types of forest regime (state-owned, private, community, classified), their management method as well as wildlife reserves and questions relating to hunting. Provisions for the repression of crimes linked to poaching and irrational logging; Article 11 includes one of the provisions favorable to the Project in that it states that "[…] the forests necessary […] for the preservation of sites and the conservation of nature" may be classified.

These provisions are reinforced by the international commitments made by Benin through the ratification of almost all international conventions and agreements relating to the environment. The ones most directly linked to the Program objectives are summarized below.

Table 15: Ratified multilateral conventions/agreements of direct or indirect relevance to the project/program

Nº	**Convention/agreement**	**Date of ratification (ou signature)**
01	United Nations Framework Convention on Climate Change	30 june 1994
02	United Nations Framework Convention on Desertification	30 june1994
03	Convention on Biological Diversity	30 june 1994
04	Convention on cooperation in the protection and development of the marine environment and coastal zones of West and Central Africa	16 january 1997
05	Kyoto Protocol of	25 february 2002
06	Convention on wetlands, waterbird habitats – Ramsar Convention	20 january 2000
07	Convention on the Protection of the World Cultural and Natural Heritage	14 september 1982
08	Convention on the Conservation of Species of Wild Animals	1er april 1986
09	Phytosanitary Convention for Africa	1er april 1974

Source: Fieldwork, 2023

This table summarizes the elements showing Benin's desire to equip itself with all the legal-political means necessary to manage its environment and especially to contribute to the conservation of the overall environment, despite its level of development.

Annex 6: Terms of Reference of the PMU members

The National Project Coordinator (NPC) will be responsible for the daily coordination of project activities, organization and structuring of all programmatic activities, collection of data and development of draft terms of reference and periodic reports. They will provide assistance to other members of the PMU. The coordinator will be under the direct supervision of CARITAS BENIN and FNEC, will collaborate with service providers, the Municipal Authorities of Bopa and Boukombe, the CARITAS diocesan directorates of Lokossa and Natitingou, the District Chiefs of Badazouin, Yègodoé, Manta and Natta, and all external institutions and organizations engaged in with the project.

The NPC must have a BAC+5, be an agronomist, agro-economist or natural resources management and planning specialist with solid knowledge of adaptation to climate change. The NPC will be responsible for:

- Daily coordination, supervision, and timely implementation of all project component implementation activities.
- Supervision, coordination, and oversight ensuring project outputs.
- Supervision and coordination of the work of PMU members, consultants as well as project subcontractors.
- Preparation and review of project work and financial plans.
- Liaising with FNEC, CARITAS Benin, the relevant government structures, the Episcopate, and all project partners including CSOs and NGOs for effective coordination of activities of the project.
- Technical support to consultants, subcontractors and training activities.
- Supervision of the preparation, timely submission and dissemination of progress, quarterly financial and other reports and documents required by project partners.
- Submission of project progress reports to the Project Steering Committee.
- Implementation of project directives and recommendations given by the Committees.
- Supervision of exchanges, sharing of experiences and lessons learned with other community-based initiatives to maximize results, integration into national development plans and dissemination at an international level.
- Sharing project component field study results with scientific institutions.
- Promoting project activities and field studies are shared with the teams responsible for producing documentaries, television spots, guidebooks and awareness campaigns.
- Executing routine, organized, scheduled or unannounced inspection visits to all sites and to all activities of the project.

Monitoring and Evaluation Manager (MEM) will be responsible for monitoring and evaluating the execution of the planned project activities. Additionally, it will propose the criteria for physical and financial evaluation of the activities progress. In addition, it assists the CNP in the development of annual, quarterly, monthly and weekly work plans for activities, as well as the preparation of field activities. The MEM monitors the daily activities of Community Facilitators, ensures the implementation and monitoring of work plans validated with the PSC. The manager will ensure the project performance indicators are being met. Additionally, they develop a plan to sustain the achievements through knowledge management and exchanges with other communities. The MEM also documents good

practices and lessons learned and supports and monitors studies and actions that ensure project sustainability after project closure and also contributes to communication.

The MEM must have a BAC+3, be a socio-economist or agro-economist with at least 5 years of proven experience in the field of project monitoring and evaluation and experience in at least three relevant projects.

The MEM is responsible for:

- Implementation of the monitoring and evaluation strategy focused on results in accordance with the monitoring and evaluation plans described in the project document.
- Orientation and coordination of the review of the project results framework.
- Provision of technical advice for the revision of performance indicators.
- Evaluation of the achievement of objectives.
- Preparation of report and support to the NPC for report preparation.
- Participatory planning and monitoring of activities.
- Support to the NPC for the archiving of technical reports and other project documents.

Agriculture & Environment Specialist (AES) should have at least 5-10 years of experience in agriculture and the environment, with a strong understanding of best practices in these areas. Experience in the development sector is preferred. The CMS will be required to:

- Provide technical assistance to project staff and partners on issues related to agriculture and the environment.
- Support the integration of agriculture and environmental considerations into project plans and activities.
- Monitor and report on the project's progress in addressing agriculture and environmental issues.
- Advise on ESMP and environmental assessments ensuring mitigation of environmental or social risks.
- Advise the PMU on best practices for sustainable agriculture and environmental management.

Administrative and Financial Manager (AFM) will ensures the administrative and financial management of the project, in close collaboration with the NPC.

The AFM must hold at least a Bac + 3 with 5+ years of experience in administrative and financial project management with proven experience with at least two projects financed by international institutions (e.g. ADB, World Bank, GiZ, UNEP, UNDP, AF, GEF, GCF).

The AFM is responsible for:

- Updating and applying administrative and financial management procedures.
- Regularly maintaining accounting documents
- Producing financial statements and monitoring the budget
- Developing and monitoring contracts at the project level
- Contributing to the preparation and organization of calls for tenders.

- Establishing purchase orders and preparing payments to suppliers and service providers.
- Maintaining the personnel registry (leave, missions, absences).
- Carrying out activities for the preparation and maintenance of the project account.
- Execution of bank transactions.
- Supplying and managing office equipment and property and its related register.
- Organizing meetings of the various project bodies and the preparation of reports.
- Participation in the organization of missions, workshops/seminars, etc.
- Participation in the development and execution of budget for annual project activities.
- Assisting the NPC in establishing annual, quarterly and monthly budget.
- Assisting the revision of project budget.
- Executing and monitoring vehicle maintenance and repair and keeping a registry.

Gender and Communication Manager (GCM) will be responsible for inclusive stakeholder mobilization, designing and implementing the project's communication strategy in close collaboration with the NPD and NPC.

The GCM must have at least a Bac+3 degree in the field of communication with a good familiarization of the AF Gender policy and strong understanding of best practices in gender and proven experience mobilizing stakeholders.

The GCM is responsible for:

- Incorporating gender and vulnerable considerations into all aspects of the project, including ensuring safeguards, the development, implementation and monitoring and evaluation of environment and social management activities, and ensuring project results.
- Advise the PMU on best practices for gender and vulnerable groups inclusion and provide technical assistance to project staff as needed.
- Work with Community Facilitators to ensure that gender and vulnerable groups considerations are integrated into project activities.
- Monitor and report on the project's progress in addressing gender and youth issues, based on the GAAP
- Developing and executing the project communication plan.
- Organizing sensibilization activities at the local and national level, and ensuring the visibility of project interventions.
- Collaborating with the development of the terms of reference for inclusive consultations.
- Mobilizing stakeholders.
- Disseminating project's achievements and good practices.

Community Facilitators (CF) will be in charge of implementing and monitoring project activities and assist communities on the ground. The CF assigned to the project communes will ensure the collection and reporting of field information to the NPC and to the Coordinator.

Facilitators must have at least 10 years of experience supporting groups in the areas of agricultural production and nutrition and have good knowledge of climate change adaptation measures. They must demonstrate practical experience of at least 5 years in one or more climate change adaptation projects and have a good knowledge of the local languages of the regions concerned.

The CF are responsible for:

- Coordinating the implementation, monitoring and reporting at the local community level to ensure that project activities are aligned with local needs and priorities and are being executed in an inclusive manner
- monitor and report on project progress in their communes, including the achievement of project objectives and the use of project resources
- Provide support to the NPC and GCM as needed in the coordination and management of project activities
- ensuring AF ESS standards are being upheld
- ensuring inclusion

Annex 7: Importance of internal savings and internal lending communities (SILC) groups in the sustainability of development projects context and justification

The observation over recent decades is that development actions implemented in several communities in Africa remain the "business" of the offices of Civil Society Organizations, project and program leaders and local authorities. However, the sustainability of development actions and investments in rural areas, and then their sustainability, requires their appropriation by the beneficiary populations. Empowerment of beneficiaries therefore implies that they must be engaged in the activities that they themselves have recommended but also take ownership of the sustainability process.

To ensure the sustainability of its actions and guarantee the financial autonomy of vulnerable populations in a systemic approach, Caritas Benin and its partners are now promoting the Communautés d'Epargne et of Crédit Internes (CECI)/Savings and Internal Lending Communities (SILC).

The functioning of SILC groups is such that it strengthens the means of subsistence of the people benefiting from the interventions. SILC are based on traditional savings practices and benefit from the accumulated experience of savings group practitioners around the world.

SILC are a type of savings group, self-managed, sustainable, secure and very profitable. They are an effective way to help even the poorest households manage their income more effectively and avoid falling into debt. This is an approach adopted by Caritas Benin for the sustainability of the achievements of its interventions and which remains transversal to all its projects. Caritas Benin also selected it as part of the Project to Strengthen Food Security and Community Resilience to Climate Change in the Communes of Boukombe and Bopa so that the beneficiary communities sustainably ensure their autonomy and resilience in the face of the effects of change climatic.

SILC are groups of people who choose themselves and constitute a common fund from which members can borrow. Loans are repaid with interest, allowing the fund to grow. These savings and borrowing activities are undertaken during a cycle of predetermined duration (8 to 12 months in general). At the end of the cycle, the funds are shared among members in proportion to their total savings. Members are free to use the amount received as they wish, including reinvesting it in another cycle. SILC also have a secondary solidarity fund intended to support members in the event of an emergency. Participants generally find SILC more interesting than other savings groups. Indeed, in a SILC, members receive profits on their savings, have a mutual assistance mechanism, and can borrow substantial and variable amounts which generally exceed the amount of the borrower's savings, and which are available at convenient times for varying durations. The savings, mutual assistance and credit services offered by SILC allow members to meet their small financial needs such as household liquidity management, income-generating activities, social obligations and emergencies, without resorting to loan sharks, taking a costly advance from a supplier, or depending on their loved ones. This improves the social security of members. In addition, the large sum that each member receives at the end of the cycle arrives at the same time for all members, fixed in advance to coincide with agricultural or other needs.

Advantages of SILC groups

The SILC methodology capitalizes on several successes, including among others:

- Members of the group manage to pay their children's school contributions

- Women, members of SILC groups, contribute to their household expenses
- The purchasing power of women members of SILC groups increases
- Members of SILC groups improve their living environment
- The SILC approach contributes to the development of female leadership in communities
- The solidarity fund of the SILC groups is operating normally.
- Women in SILC/SILC groups are more fulfilled and emancipated
- The income of certified PSP (Private Service Providers) community volunteers increases; which provides a solution to youth unemployment
- The SILC approach is known and adopted by many communities
- The SILC approach contributes to household consolidation and community cohesion
- The creation of Income Generating Activities (IGA) through the activities of SILC creates local markets for the sale of production
- SILC activities reduce the mobility of certain ethnic groups by consolidating the social fabric.

These various successes, which constitute immediate effects of the SILC methodology in the different intervention communities of Caritas Benin, contribute greatly to the development of the villages, to community cohesion and above all to the sustainability of the actions.

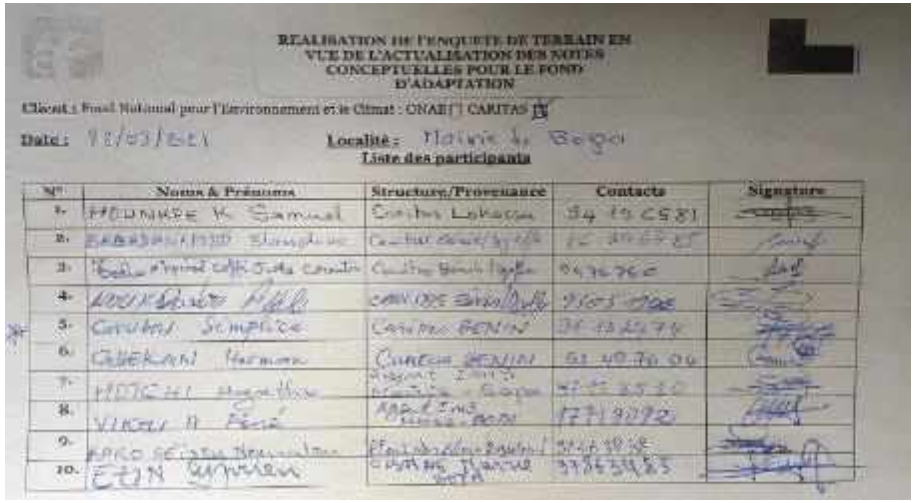
Role of volunteer community relays called PSPs (Private Service Providers)

SILC groups are fully set up, trained, supported at maturity and monitored by volunteer community relays commonly called "field agents". These agents are young girls and boys recruited in the communities concerned by Caritas Benin with the support of local authorities. Once recruited, these field agents benefit from a series of training which lasts 9 months as recommended by the approach, at the end of which they are certified as private service providers (PSP) and presented to the entire community with the support from local authorities

The PSP plays an important role as facilitator of the SILC groups. It helps groups to form, train their members and carry out the activities they have planned. This makes a group of people an efficient SILC/SILC for organization, communication, and attention paid to how the members of the group work together. It creates a respectful and safe environment, encourages active listening and helps groups in planning and monitoring activities. The facilitators are available to contribute to the success of SILC. It helps the community understand the benefit of joining a SILC group, helps develop awareness and confidence of SILC members to encourage them to adopt the system, keep control of it and ultimately to operate independently.

Annex 8: Attendances List

i. Bopa Town Hall



REALISATION DE L'ENQUETE DE TERRAIN EN VUE DE L'ACTUALISATION DES NOTES CONCEPTUELLES POUR LE FOND D'ADAPTATION

Client : Fond National pour l'Environnement et le Climat : ONAB [ ] CARITAS [X]

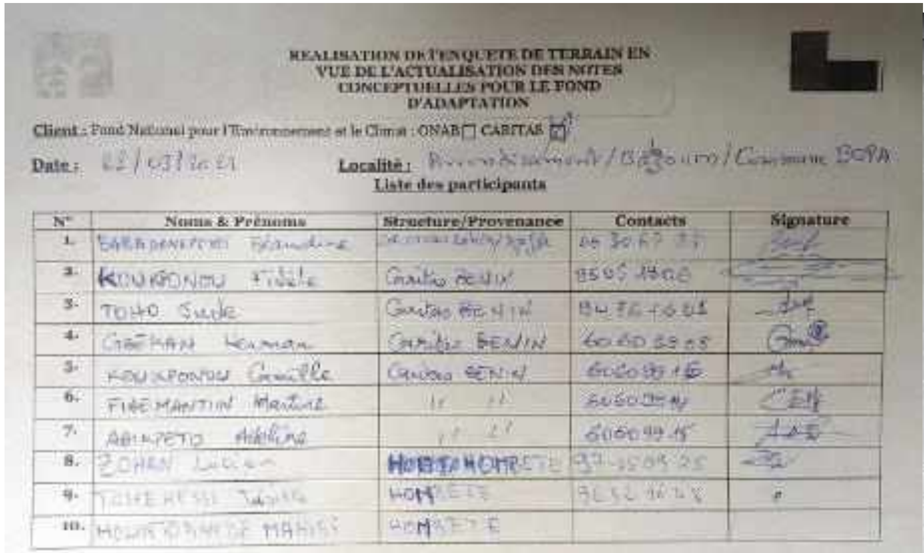
Date : 18/03/2021 Localité : Mairie de Bopa

Liste des participants

N°	Noms & Prénoms	Structure/Provenance	Contacts	Signature
1.	HOUNKPE K. Samuel	Caritas Lokossa	94 19 C5 81	
2.	[illegible]	Caritas [illegible]	[illegible]	
3.	[illegible]	Caritas Bénin [illegible]	[illegible]	
4.	[illegible]	CARITAS [illegible]	[illegible]	
5.	[illegible] Simplice	Caritas BENIN	[illegible]	
6.	[illegible] Herman	Caritas BENIN	51 40 70 06	
7.	HOUCHI [illegible]	[illegible] Bopa	[illegible]	
8.	VIKOU [illegible] René	[illegible]	[illegible]	
9.	[illegible]	[illegible]	[illegible]	
10.	ETIN [illegible]	[illegible]	[illegible]	

11.	AMADJELO S. [illegible]	ONG-MORIJA	61 72 38 82	
12.	GBESSO Désiré	DAM-BOPA	97 06 85 85	
13.	CHANOU A. Hack	SE - BOPA	97 19 75 17	
14.	KOUYE KOKOU	Point Focal [illegible]	97 61 90 26	
15.	DANIDH Olivia Ayawa	Chargé de [illegible] [illegible]	96 09 35 78	
16.	AFFO Antoine	CP ONG AVPN	96 32 47 22	
17.	OZOUE C. Célestine	PF-ANPC/BOPA	97 18 77 40	
18.	ALOHOUN Léopold	ATDA7/Bopa	96 84 18 23	
19.	TOGBE Ariane	CS Bopa	62-00-00-38	
20.	SOUNOU Nicodème	Responsable des Eaux et Forêts	65 09 78 09	
21.	BABOU [illegible] Félicien	Consultant	[illegible]	
22.	BAGAN Thomas	Expert ACC	95 71 45 29	

ii. Badazouin arrondissement/Commune of Bopa



REALISATION DE L'ENQUETE DE TERRAIN EN VUE DE L'ACTUALISATION DES NOTES CONCEPTUELLES POUR LE FOND D'ADAPTATION

Client : Fond National pour l'Environnement et le Climat : ONAB☐ CARITAS ☑

Date : 02/03/2021 Localité : Arrondissement/Badazouin/Commune BOPA

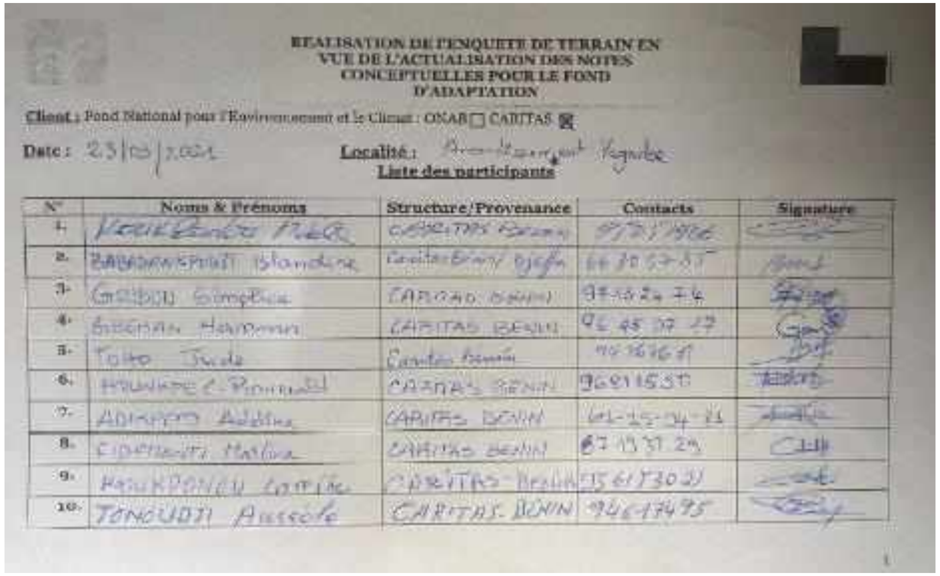
Liste des participants

N°	Noms & Prénoms	Structure/Provenance	Contacts	Signature
1.	[illegible] Blandine	[illegible]	[illegible]	[illegible]
2.	KOUGONOU Fidèle	Caritas BENIN	[illegible]	[illegible]
3.	TOHO Jude	Caritas BENIN	[illegible]	[illegible]
4.	GBEHAN Herman	Caritas BENIN	[illegible]	[illegible]
5.	KOUKPONOU Camille	Caritas BENIN	[illegible]	[illegible]
6.	FINEMANTIN Martine	" "	[illegible]	[illegible]
7.	ABIKPETO Adeline	" "	[illegible]	[illegible]
8.	ZOHAN [illegible]	HOMBETE	[illegible]	[illegible]
9.	[illegible]	HOMBETE	[illegible]	[illegible]
10.	HOUNTONDJI [illegible]	HOMBETE		

N°	Noms & Prénoms	Structure/Provenance	Contacts	Signature
11.	[illegible]	HOMBETE	[illegible]	[illegible]
12.	Gouto Simplice	Caritas BENIN	[illegible]	[illegible]
13.	[illegible]	HOMBETE	[illegible]	[illegible]
14.	[illegible]	[illegible]	[illegible]	[illegible]
15.	[illegible]	[illegible]	[illegible]	[illegible]
16.	HERPONOU [illegible]	[illegible]		[illegible]
17.	ANATO [illegible]	[illegible]	[illegible]	[illegible]
18.	[illegible]	Badazouin		[illegible]
19.	KINKENHOU [illegible]	[illegible]		[illegible]
20.	LANTEFO [illegible]	[illegible]	[illegible]	[illegible]
21.	[illegible]	[illegible]		[illegible]
22.	[illegible]	[illegible]	[illegible]	[illegible]
23.	[illegible]	[illegible]	[illegible]	[illegible]
24.	HOUNASO [illegible]	[illegible]	[illegible]	[illegible]
25.	[illegible]	[illegible]	[illegible]	[illegible]
26.	[illegible]	Badazouin		[illegible]
27.	[illegible]	Badazouin		[illegible]

N°	Noms & Prénoms	Structure/Provenance	Contacts	Signature
28.	DEGBOSSI [illegible]	[illegible]	[illegible]	[illegible]
29.	[illegible]	Badazouin		[illegible]
30.	FANOU [illegible]	[illegible]	[illegible]	[illegible]
31.	GANVO [illegible]	[illegible]	[illegible]	[illegible]
32.	RESSOU [illegible]	[illegible]	[illegible]	[illegible]
33.	ADJAHA [illegible]	Badazouin	[illegible]	[illegible]
34.	[illegible]	[illegible]	[illegible]	[illegible]
35.	HOUNSOUNOU [illegible]	[illegible]	[illegible]	[illegible]

iii. Attendance list Yègodoé arrondissement



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REALISATION DE L'ENQUETE DE TERRAIN EN VUE DE L'ACTUALISATION DES NOTES CONCEPTUELLES POUR LE FOND D'ADAPTATION

Client : Fond National pour l'Environnement et le Climat : ONAB ☐ CARITAS ☒

Date : 23/03/2021 **Localité :** Arrondissement Kognoko

Liste des participants

N°	Noms & Prénoms	Structure/Provenance	Contacts	Signature
1.	[illegible]	CARITAS Bénin	97 27 7926	
2.	BABADAWESPONT Blandine	Caritas Bénin/ Djougou	66 30 57 87	
3.	GBIDOU Simplice	CARITAS BENIN	97 36 24 74	
4.	BOSSAN Hermann	CARITAS BENIN	96 45 37 17	
5.	TOHO Jude	Caritas Bénin	96 36 76 71	
6.	HOUNKPE C. Romuald	CARITAS BENIN	96811530	
7.	ADIKPETO Adeline	CARITAS BENIN	61-15-34-81	
8.	FIDEMENTI Marlène	CARITAS BENIN	67 13 37 29	
9.	HOUKPONOU Laetitia	CARITAS Bénin	95 61 73 03	
10.	TONOUDJI Aurèole	CARITAS- BENIN	94 61 74 95	

11.	KPOTO Joachim	LONFIN	97 13 75 69	
12.	KENDU Germain	LONFIN	97 15 81 56	
13.	TOSSOU Virginie	LONFIN	96 20 62 10	
14.	BOGARI Natha	LONFIN	97 38 41 05	
15.	KPOTO Lucien S.	CV LONFIN	97 83 46 48 / 65 15 61 45	
16.	ADJAHO Simon	LONFIN	97 04 93 45	
17.	GBEDE Antoine	DJEKIAN	Pas de contact	
18.	SIAVI Afi	DJEKIAN	Pas de contact	
19.	TEADU Akpik	DJEKIAN	67 25 66 36	
20.	GNANWI Nonvigon	DJEKIAN	Pas de contact	
21.	AGBOTA H. Richard	TOHOUETA	97 95 04 95	
22.	GOUNTA-CONON Samuel	TOHOUETA	66 30 15 19	
23.	GNANHOU Jean	TOHOUETA	97 86 35 61	
24.	DAGBO K. Antoine	TOHOUETA A	66 05 93 42	
25.	KAKPO Gondé Marc	TOHOUETA - KPODJI	51 41 35 83	
26.	SOSSA Tim	TOHOUETA - KPODJI	60 40-35-84	
27.	DEGAKOE Bernadette	TOHOUETA - AKLON	64 12 37 13	

iv. Boukombe Town Hall.

REALISATION DE L'ENQUETE DE TERRAIN EN VUE DE L'ACTUALISATION DES NOTES CONCEPTUELLES POUR LE FOND D'ADAPTATION

Client : Fond National pour l'Environnement et le Climat ; ONAB ☐ CARITAS ☒

Date : 24/09/2021 Localité : Mairie de Boukombe

Liste des participants

N°	Noms & Prénoms	Structure/Provenance	Contacts	Signature
1.				
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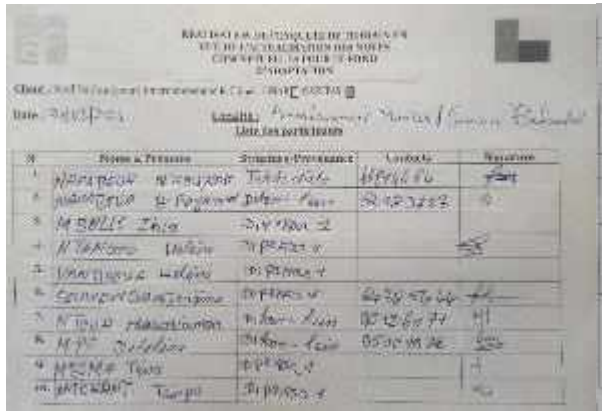
18.				

v. Manta arrondissement /Commune of Boukombe.



vi. Natta arrondissement /Commune of Boukombe.

REALISATION DE L'ENQUETE DE TERRAIN EN VUE DE L'ACTUALISATION DES NOTES CONCEPTUELLES POUR LE FOND D'ADAPTATION

Client : Fond National pour l'Environnement et le Climat : ONAB ☐ CARITAS ☒

Date : 25/03/2021 Localité :

Liste des participants [illegible]

N°	Noms & Prénoms	Structure/Provenance	Contacts	Signature
1.	[illegible]	[illegible]	[illegible]	
2.	[illegible]	[illegible]	[illegible]	
3.	[illegible]	[illegible]	[illegible]	
4.	[illegible]	[illegible]		
5.	[illegible]	[illegible]	[illegible]	
6.	[illegible]	[illegible]	[illegible]	
7.	[illegible]	[illegible]	[illegible]	
8.	[illegible]	[illegible]		
9.	M'PO [illegible]	[illegible]	[illegible]	
10.	N'TCHA [illegible]	[illegible]	[illegible]	
11.	[illegible]	[illegible]	[illegible]	
12.	M'PO [illegible]	[illegible]	[illegible]	
13.	N'TCHA [illegible]	[illegible]		
14.	[illegible]	[illegible]		
15.	N'TCHA [illegible]	[illegible]		
16.	N'TCHA [illegible]	[illegible]		
17.	[illegible]	[illegible]		
18.	N'TCHA [illegible]	[illegible]	[illegible]	
19.	[illegible]	[illegible]	[illegible]	
20.	BADA [illegible]	[illegible]	[illegible]	
21.	[illegible]	[illegible]		
22.	N'TCHA [illegible]	[illegible]		
23.	[illegible]	[illegible]	[illegible]	
24.	N'TCHA [illegible]	[illegible]	[illegible]	
25.	[illegible]	Natta	[illegible]	
26.	GNAMOU B. Bawén	Natta	97 32 08 03	
28.	N'TCHA K. M'PO M	CA Kouinaougou	97652626	
29.	Valery Aïmtou F	Kouporgou		
30.	M'PO Alicia F	Kouponougou	97350971	
31.	BARADANKPOSOT Blandine F	Caritas Bénin Djeffa	66306785	
32.	YOKOSSI Ehristelle F	Caritas Natitingou	67 302230	
33.	N'TCHA N. André M	Caritas Natitingou		
34.	YEMA M'PO Véronique F	Koutoutougou		
35.	KOUAGOU Catherine F	Koutoutougou		
36.	N'TCHA Catherine F	Koutoutougou		
37.	N'TCHA Marcelline F	Koutoutougou		

Annex 9: COMMUNITY AGREEMENTS

i. Manta (Boukombe) community agreements

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa, je soussigné, YATTARA M. Delphine

répondant au titre de Président du groupement [illegible] m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de raientir l'atteinte des objectifs fixés.

MANTA le
YATTARA M. Delphine

(Nom, Prénom, Signature)

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa, je soussigné, N'TAMOU Helene

répondant au titre de Président du groupement [illegible] m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de raientir l'atteinte des objectifs fixés.

Manta le
N'TAMOU Helene

(Nom, Prénom, Signature)

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa, je soussigné, KOUAGOU NTCHA Hélé

répondant au titre de Secrétaire de l'association [illegible] point focal m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de raientir l'atteinte des objectifs fixés.

MANTA le 28.04.23.

(Nom, Prénom, Signature)

ii. NATTA (Boukombe) community agreements

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa*, je soussigné, NTCHA Ndah Roger

répondant au titre de Président de la coopérative des producteurs de soja de Natta m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Natta le 28/04/2023

(Nom, Prénom, Signature)

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa*, je soussigné, NTCHA M'PO Bernard

répondant au titre de Président de l'association des producteurs de soja Natta m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Natta le 28/04/2023

(Nom, Prénom, Signature)

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa*, je soussigné, N'TCHA [illegible]

répondant au titre de [illegible], m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Natta

N'TCHA [illegible]

(Nom, Prénom, Signature)

iii. NGO (Boukombe) agreements

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa*, je soussigné, M'BETTI Badazou

répondant au titre de Chargé des Programmes de CERD-BE m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Boukombe, le 28/04/2023

(Nom, Prénom, Signature)

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa*, je soussigné, DARI [illegible]

répondant au titre de Coordonateur CPC Boukombe, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Boukombe, le 28/04/2023

(Nom, Prénom, Signature)

Evêque Yadan DARI

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de Boukombe et Bopa*, je soussigné, N'KOA Sidonie

répondant au titre de Secrétaire de TIKONA, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Boukombe, le 28/04/2023

(Nom, Prénom, Signature) N'KOA Sidonie

iv. Badazouin (Bopa) community agreements

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* **Boukombe** et Bopa, je soussigné, KOUNASSO Kpadounante répondant au titre de Présidente du groupement Gnoumanicle m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Badagouin 25/04/2023

(Nom, Prénom, Signature)

KOUNASSO Kpadounante

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* **Boukombe** et **Bopa**, je soussigné, NATO Pierrette répondant au titre de Présidente du groupement Gongnon, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Badagouin 25/04/2023

(Nom, Prénom, Signature)

NATO Pierrette

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* **Boukombe** et Bopa, je soussigné, Toussaint C. HOUNSOUNOUVI répondant au titre de CA / Badagouin m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Badagouin 25/04/2023

(Nom, Prénom, Signature)

Toussaint C. HOUNSOUNOUVI

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* **Boukombe** et **Bopa**, je soussigné, VIKPOGNON Norbert, répondant au titre de Président du Groupement ALOLE ALOMIN, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Badazouin, le 25/04/2023

VIKPOGNON Norbert

(Nom, Prénom, Signature)

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* **Boukombe** et **Bopa**, je soussigné, AMOUSSOU Martin, répondant au titre de Vice Président du groupement ELAVAGNON, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Badazouin, le 25/04/2023

(Nom, Prénom, Signature)

AMOUSSOU Martin

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* **Boukombe** et **Bopa**, je soussigné, HOUNGUIAH Albert, répondant au titre de Vice Président du Groupement TOFFA, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Badazouin 25/04/2023

Albert HOUNGUIAH

(Nom, Prénom, Signature)

v. Yegodoe (Bopa) community agreements

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* Boukombe et Bopa, je soussigné, KPOTO S. Lucien, répondant au titre de Préfecture du Département GBEMON KPO, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Yegodoé le 25/04/2023

KPOTO S. Lucien

(Nom, Prénom, Signature)

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* Boukombe et Bopa, je soussigné, KOULEKPATO G. Pierre, répondant au titre de Préfecture du Département MAHOUGNON, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Yegodoé le 25/04/2023

KOULEKPATO Pierre

(Nom, Prénom, Signature)

PROJET DE RENFORCEMENT DE LA SECURITE ALIMENTAIRE ET DE LA RESILIENCE COMMUNAUTAIRE FACE AUX CHANGEMENTS CLIMATIQUES DANS LES COMMUNES DE BOUKOMBE ET BOPA

ACCORD D'ACCOMPAGNEMENT

Dans le cadre du projet *de renforcement de la sécurité alimentaire et de la résilience communautaire face aux changements climatiques dans les communes de* Boukombe et Bopa, je soussigné, GNANKOU Jean, répondant au titre de Président de l'Association des déplacés de TOHUETA, m'engage à accompagner les initiatives du projet, afin de garantir l'atteinte globale des objectifs du projet.

Seront enrôlés aussi, les intervenants sous ma responsabilité pour favoriser la participation de tous et prévenir la survenue d'éventuels conflits susceptibles de ralentir l'atteinte des objectifs fixés.

Yegodoé le 25/04/2023

(Nom, Prénom, Signature)

GNANKOU Jean

Annex 10: Pictures of the participants at the work sessions

Commune of Bopa

Photos 1 & 2: Picture of the participants after the work session at the Bopa Town Hall (02/03/2021)

Photos 3: Work session in the arrondissement of Badazouin/Bopa (02/03/2021)

Photos 4 : Work session in the arrondissement of Badazouin/Bopa (02/03/2021)

Photos 5&6 : Work session in the Borough of Yégodoé/Bopa (03/03/2021)

Photo 7 : Work session with institutionnel (Bopa, 25 avril 2023)

Photo 8 : Focus group with young men

Photo 9: Focus group with old men

Photo 10 : Focus group with young women
(Bopa, 25 avril 2023)

Photo 11 : Focus group with old women

Commune of Boukombe

Photos 12: Work session with institutional at Boukombe

Photo 13: Focus group with old women at Manta

Photo 14: Focus group with old women at Manta (26/04/23)

Photo 15: Focus group with old men at Manta (26/04/23)

Photo 16: Focus group with young men at Manta (26/04/23)


Photos 17&18: PRODOC Validation workshop

Annex 11 : Detailed budget of activities

Expected results by activity	Budget notes	Unit	Unit cost	Quantity	Amount
Component 1: Strengthening the resilience of local agricultural production systems to the effects of climate change (corn, cowpeas, soya, cassava, market gardening, etc.)					
Output: 1.1. **Farmers adopt restoration and sustainable land management practices**					
Activity: 1.1.1. Support for the inventory and dissemination and application of restoration and sustainable land management practices					
Study of the state of agricultural land management in the 4 districts of intervention	30 man-day consultation per District for the diagnostic study and proposals for resilient approaches to sustainable land management	Consultation fees/District	7,260	4	29,040
	3-day workshops for the validation of study reports and the adoption of restoration and sustainable land management measures/district (40 people)	Workshop organization costs/District	1,925	4	7,700
Organization of village animation sessions	Recruitment of a team of consultants for the design in French (31-man days) and the translation into 3 local languages (36-man days) of brochures and posters to raise awareness among villagers on climate change and sustainable land management	Consultant team fees /man-day	167	67	11,189
	5-day workshops for validating drafts of brochures and posters in French (2 days) and local languages (3 days) for 40 people	Workshop organization costs/day	1,759	5	8,795
	Publishing costs for 2,500 brochures and 1,000 posters in French, Fon, Ditamari and Sahouè	Cost/poster	3	3500	10500
	Support for the organization of 2 monthly awareness sessions and village activities in the 15 SILC groups during the 12 months	Bimonthly activities costs	2700	15	40500

	following the publication of the brochures and posters	for SILC groups /SILC Group			
Supply of small tools and inputs for sustainable land management	Support for the acquisition of 3 small tool kits for each of the 15 SILC groups (shovels, wheelbarrows, hoes, cutters, sprayers, seeders)	Kit acquisition costs	1500	45	67500
	Support for the purchase of 3 annual agricultural input kits for each of the 15 SILC groups in (organic fertilizers, biopesticides)	Product purchase costs	750	45	33750
Activity: 1.1.2 Training and support for the application of adapted technical itineraries					
Training of trainers on technical routes	Support for 30 trainers and 10 facilitators for 3-day training	Fees/Agent	184	160	29440
	Consultation and organization costs for the training of trainers and facilitators (Fees, travel costs for trainers and organization costs, including training kit and support, room rental, lunch)	Consultation and workshop organization fees/District	3459	4	13836
Implementation of field schools on sustainable land management methods and soil restoration techniques	30-man-day consultancy by SILC Group to develop the technical file for the implementation and management of field schools in liaison with the 15 SILC groups of men of Group	Consultancy fees/SILC Group	7260	15	108900
	3-day district workshops for 40 people to validate the technical files of field schools	Workshop organization costs/District	1925	4	7700
	Support for the establishment of field schools for the 15 SILC groups (demarcation, division and security)	Fees/SILC Group Group	1500	15	22500
	Support for the management of field schools and experiments during years 2, 3 and 4	Package for years 2, 3 and 4/SILC Group	9000	15	135000

	Support for 375 producers from SILC groups with small tool kits (shovels, wheelbarrows, hoes, cutters, etc.)	Fees / member of SILC at field school level	150	375	56250
	Support for 15 community field school managers for 3-day training for the benefit of SILC groups	Fees/agent	100	15	1500
	Consultation and organization costs for the 3-day training workshop for the 8 community managers of field schools in the BOPA Districts	Consultation and workshop organization fees	1579	1	1579
	Consultation and organization costs for the 3-day training workshop for the 7 community managers of field schools in the BOUKOMBE districts	Consultation and workshop organization fees	1514	1	1514
	Support for producers' learning through experience (training of SILC groups in field schools) during active growing periods	Package for years 2, 3 and 4/SILC Groups	9000	15	135000
Output: 1.2 Populations have easy access to materials/equipment and certified seeds					
Activity 1.2.1 Support in kits of small materials/equipment and resilient seeds of					
Supply of small equipment kits	Provision of small equipment for 375 producers in the 15 SILC groups: equipment: hoes, cutters, rakes, pots, etc.	Kit Fees / member of SILC at household level	250	375	93750
Annual allocation of resilient seeds to members of SILC groups	Supply of resilient seeds (traditional seeds, seeds offered by INRAB)	Seed costs / member of SILC	70	375	26250
Output: 1.3 Resilient water mobilization, storage and distribution structures are built					
Activity 1.3.1 Creation of 2 solar energy boreholes with market gardening for the benefit of vulnerable women in Bopa					
Creation of 2 solar energy boreholes with market	Consultancy and engineering works for 1 borehole in 2 districts of BOPA	Expertise and work costs/District	18000	2	36000

gardening development in Bopa	Market gardening on 5 ha in 2 districts	Expertise and work costs /District	20000	2	40000
	Annual maintenance of works	Cost of maintaining the works /District for 4 years	18335	2	36670
Activity 1.3.2 Rehabilitation of a water reservoir with market gardening development in Boukombe					
Development of a water reservoir with market gardening perimeter	Consultancy and engineering works for the rehabilitation of a water reservoir in BOUKOMBE	Expertise and work costs	113414	1	113414
	Market gardening on 5 ha	Expertise and work costs	10000	1	10000
	Annual maintenance of works	Cost of maintaining the works for 4 years	16414	1	16414
Component 2 : Economic empowerment and improved nutrition of vulnerable households					
Output: 2.1. Producers have easy access to the market and optimize the timing for the sale of harvested products					
Activity: 2.1.1. Implementation of a warrantage process with the SILC groups (Communauté d'Epargne et of Crédit Internes)					
Formalization of 15 SILC groups of 25 people (375 members including 75% women)	Support for the formalization of SILC groups	Fees/ Group SILC Group	100	15	1500
Training of members of SILC groups on a resilient warrantage system	20-man-day consultation per municipality to study the economic security strategies of agricultural households and the warrantage system practiced in SILC groups and to propose resilient warrantage approaches	Consultation fees/ municipality	5335	2	10670

	3-day district workshops to validate study reports and adopt resilient warrantage modalities (40 people)	Workshop organization fees /District	1925	4	7700
	Support for 25 members of 15 SILC groups and 10 facilitators and local development agents for a 1-day training workshop in the 4 districts	Fees/Agent	9	525	4725
	Organization costs for 1-day training workshops for 35 actors in the 15 SILC groups	Workshop organization fees / SILC Group	1167	15	17505
Construction of 4 resilient harvest storage stores	Consultancy, technical preparation and construction of 4 stores of 500 tonnes each	Expertise and work costs / store	28334	4	113336
	Support for community activities supporting the installation and maintenance of structures for 4 years	Cost of maintaining the works /District for 4 years	4000	4	16000
Support for SILC groups with supply kits and small management equipment	Acquisition of boxes, tables, registers, calculators, ticket controllers, padlocks, pens, etc. for 15 SILC groups	Kit acquisition costs /SILC Group	170	15	2550
Training of local elected officials on the Warrantage process	Support for 30 local elected officials for training on warrantage in BOPA and BOUKOMBE (1 one-day workshop)	Fees/ Local elected official	42	60	2520
	Organization costs for the municipal training workshop for local elected officials in BOPA and BOUKOMBE	Workshop organization costs /day	1142	2	2284
Organisation d'un warrantage par an durant 4 ans dans les Groups SILC	Organization of one warrantage per year for 4 years in SILC groups	Animation and maintenance	2567	15	38505

		costs / SILC group			
Output: 2.2. Producers carry out other income-generating activities (IGA) which strengthen their resilience					
Activity: 2.2.1. **Support for the development of innovative IGAs that are resilient to climate change (sustainable beekeeping in Boukombe, fish farming integrated into market gardening in Bopa)**					
Diagnostic study of the limits of traditional agricultural sectors and integration of beekeeping, market gardening and fish farming into the farming systems of the SILC groups of Bopa and Boukombe	30-man-day consultancy by SILC Group for the study of methods of integrating beekeeping, market gardening and fish farming, and resilient production techniques into the operating systems of members of SILC groups	Consultation fees /SILC Group	7260	15	108900
	3-day workshops for the validation of study reports and the adoption of resilient production techniques (40 people)	Workshop organization fees / SILC Group	1925	15	28875
Training of beneficiaries on resilient production techniques	Support for 375 beneficiaries for their participation in 3 days of training on resilient production techniques in the districts	Fees / beneficiary	25	375	9375
	Consultation and organization costs for the 3-day training workshop for SILC members in resilient production techniques	Consultation and workshop organization fees / SILC group	2684	15	40260
Provision of 3 beekeeping, fish farming and market gardening installation kits to SILC groups	Supply of 3 types of installation kits to each of the 15 SILC groups	Average cost of basic elements/ of kit	5834	45	262530
	Support for 375 beneficiaries for their participation in 3 days of training on the Kits made available to them	Fees / beneficiary	25	375	9375
	Consultation and organization costs for a 3-day training workshop for 375 beneficiaries in the villages	Consultation and workshop organization	2684	15	40260

		fees/ SILC group			
Advisory support to SILC groups in the implementation of IGAs	Providing SILC groups with advisory support for 2 days per quarter on IGAs for 4 years	Advisory support fees /Municipality	9067	2	18134
Output: 2.3. Populations adopt good eating practices based on local products with high nutritional values					
Activity: 2.3.1. Behavior Change Communication (BCC) on good dietary practices					
Diagnostic study of food practices in the community of SILC groups	30-man-day consultation by SILC Group for the study of local food practices and the nutritional values of local food crops and vegetables and for proposals for adapted measures in terms of changing nutritional	Consultation Fees of / SILC Group	7260	15	108900
	3-day workshops for the validation of study reports and the adoption of resilient food practices (40 people)	Workshop organization fees /Group SILC	1925	15	28875
Design, translation and edition of image boxes, posters and brochures on local foods and good eating practices	Recruitment of 4 teams of consultants for the design in French and the translation into Fon, Ditamari and Sahouè of image boxes, posters and brochures on local foods and good eating practices in the Districts (animation materials)	Design costs (31 man days) and translation costs (36 man days) for image boxes, brochures and posters/District	11189	4	44756
	5-day workshops for validating drafts of brochures and posters in French (2 days) and local languages (3 days) for 40 people	Workshop organization fees/District	8795	4	35180
	Publishing costs for 1500 image boxes, 3000 brochures, 2000 posters	Fees/Poster	5	6500	32500
	Support for 15 community relays for 3-day training for the benefit of 15 SILC groups	Fees/agent	100	15	1500

Training of community relays on good food practices	Consultation and organization costs for the 3-day training workshop for the 8 community relays in the BOPA Districts	Consultation and workshop organization fees	1579	1	1579
	Consultation and organization costs for the 3-day training workshop for the 7 community relays in the BOUKOMBE Districts	Consultation and workshop organization fees	1514	1	1514
Training and awareness of populations on good dietary practices	Support for community relays for the organization of 5 village awareness sessions in the 15 SILC groups	Intervention costs for community relays / SILC group	100	15	1500
	Support for the organization of village awareness sessions	Costs for preparing and implementing awareness sessions of SILC Group	417	15	6255
Activity 2.3.2 Support for the formulation of balanced food rations based on products					
Support for the organization of culinary demonstrations	Support for 4 culinary demonstration sessions in each SILC group of Group	Demo Fee of SILC Group	267	15	4005
	Organization of 3 evaluation and advice sessions on the level of adoption of good culinary practices by members of SILC groups	Fees for organizing assessment and counseling sessions of SILC Group	300	15	4500
Activity 2.3.3 Support for the production and promotion of local species with high nutritional values					
Development of 375 home gardens to promote local	5-day consultation by SILC group for the technical preparation and demarcation of home gardens in villages	Consultation fees/ SILC group	1334	15	20010

species with high nutritional values	Support for the development of 375 home gardens by members of SILC groups	Home garden development costs of / member of the SILC group	84	375	31500
Component 3 : Capitalization, dissemination of good practices and lessons learned and sustainability					
Output: 3.1. Climate change adaptation measures are taken into account in the activities of decentralized structures					
Activity: 3.1.1. Strengthening the capacities of local elected officials and executives of decentralized structures and those responsible for the sectors for the integration of adaptation to climate change in the Annual Investment Plans (AIP)					
Organization of an annual 3-day municipal workshop for the integration of adaptation to climate change	Support for 40 local elected officials, executives of decentralized structures and sector managers for their participation in the ACC integration workshops with the PAI in the 2 municipalities during years 2, 3 and 4	Participation fee/ actor	84	720	60480
	Consultation and organization costs for 3-day training workshops for the integration of the ACC into the PAI in the 2 Municipalities	Consultancy and workshop organization fees/ Municipality	14150	2	28300
Activity 3.1.2 Strengthening local information collection structures for better management of the effects of climate change at the local level					
Training of municipal and district stakeholders for the collection of information applied to the management of adaptation to climate change	Support for 30 executives from institutions, decentralized research structures and other local actors for their participation in annual awareness/training workshops on the transfer of responsibilities to the local level for the collection of information applied to the management of adaptation to climate change (years 2, 3 and 4 of the project)	Support amount/actor	159	270	42930
	Consultation and organization costs for annual 3-day awareness/training workshops to	National workshop	16275	1	16275

	empower local stakeholders in the collection of information and management of adaptation to climate change	organization fees /annual session			
Output : 3.2 The good practices promoted are documented and disseminated					
Activity 3.2.1 Capitalization and dissemination of good practices					
Organization of an annual 3-day municipal workshop for the capitalization and dissemination of good practices for 40 stakeholder representatives for 4 years	Support for executives representing stakeholders for their participation in annual 3-day capitalization workshops in the Municipalities for 4 years	Participation Fees/actor	84	960	80640
	Consultation and organization costs for annual 3-day capitalization workshops in the Municipalities for 40 executives for 4 years	Consultancy and workshop organization fees/Municipality	22100	2	44200
Organization of 2 3-day national workshops for the capitalization and dissemination of good practices for 50 stakeholder representatives	Support for executives representing stakeholders for their participation in 3-day national capitalization workshops in years 3 and 4	Participation Fees/actor	103	300	30900
	Consultation and organization fees for 3-day national capitalization workshops in years 3 and 4	Consultancy and organizational costs/workshop	5367	2	10734
Annual municipal accountability workshop for 50 people for 4 years	Support for executives representing stakeholders for their participation in annual 1-day municipal accountability workshops	Participation Fees/actor	84	600	50400
	Consultation and organization costs for annual 1-day municipal accountability workshops	Consultancy and organizational costs/Municipality	7600	2	15200
Community animation sessions to disseminate good practices	Support for people participating in 1-day community activities sessions per district for 40 people	Participation Fees/actor	9	160	1440

	Organization costs for 1-day community animation sessions	Organization Fees/District	1600	4	6400
	Media support costs	Media coverage /District	500	4	2000
Knowledge sharing	Organization of seminars for appropriation of Project results by universities and research centers and humanitarians, including Caritas Africa and Caritas Internationalis, and dissemination of experiences acquired on the Caritas Benin and FNEC platform in French, English, and in local languages	Production costs for broadcast media and organization of seminars	7986	1	7986
Activity 3.2.2 Strengthening community mechanisms for managing climate disasters and adaptation to climate change at the local level					
Support for local authorities in revitalizing the community alert system and disseminating the alert	Support for executives representing local stakeholders for their participation in 2 workshops to revitalize the community alert system and the dissemination of the alert for 40 people per municipality	Participation Fees/actor	84	160	13,440
	Consultation and organization costs for workshops to revitalize the community alert system and alert dissemination	Consultancy and organizational costs /Municipality	3,367	2	6,734
Cost of operational components (A)					**2,570,328**
Project execution cost (9,5 %) (B)					**244,181**
Staff allowances	Salaries of the Project Management Team and allowances for technicians mobilized in the field to provide support to beneficiaries	Staff cost / year	36,200	4	144,800
Office equipment	Computers and equipment	Cost of equipment	12,500	1	12,500

	Office supplies	Annual cost	1,070	4	4,280
Seminars and workshops	Organization of seminars and workshops	Number	5,000	2	10,000
communications	Web page, media	Cost of communications	3,125	4	12,500
Travel	Travel costs for the project team for monitoring activities	Mission cost /year	8,000	4	32,000
Evaluation	Launch of the project	Kick-off meeting	5,101	1	5,101
	Mid-term evaluation	Evaluation mission	8,000	1	8,000
	Final Evaluation	Evaluation mission	8,000	1	8,000
Audit	Project Audit	Audit mission	7,000	1	7,000
Total Cost (C) = (A)+ (B)					**2,814,509**
Fees for implementing project by FNEC (D)= (C) x 8,5%					**239,233**
Project performance management and budget monitoring by FNEC	Project performance management and budget monitoring	General supervision, quality management control, technical, environmental and financial. Seminars, workshops and travelmonitoring and field visits	28 706	4	114 823
	Policy support, portfolio management	Policy support, portfolio management	5 967	4	23 867
	Reporting, awareness	Reporting, awareness	8 605	2	17 210

	Supervision, financial management	Supervision, financial management	9 303	4	37 212
	Quality assurance, supervision reports, supervision of completion and evaluation	Quality assurance, supervision reports, supervision of completion and evaluation	18 538	1	18 538
	Communication and information	Communication and information	5 516	4	22 064
		Web page, social media and written press	5 519	1	5 519
TOTAL (E) = (D) + (C)					**3,053,742**