Food and Agriculture Organization of the United Nations

Strengthening human and natural systems resilience to climate change through mangrove ecosystems conservation and sustainable use in southern Benin

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Signature Page

Upon request from the Government of Bénin, represented by the Ministry of Living Environment and Sustainable Development (MCVDD);
the Food and Agriculture Organization of the United Nations (FAO) will provide technical assistance for the project entitled: "Strengthening human and natural systems resilience to climate change through mangrove ecosystems conservation and sustainable use in southern Benin"

Upon signature of this project document by the duly authorized representatives of both parties, the project will be implemented in accordance with the background, rationale and management arrangements described herein.

On behalf of the Government:	On behalf of: The Food and Agriculture Organization of the United Nations
Name:	Name:
Title:	Title:
Date:	Date:

FAO-GEF PROJECT DOCUMENT

Project Title:	Strengthening human and natural systems resilience to climate change through mangrove ecosystems conservation and sustainable use in southern Benin

GEF ID: 10166	FAO Entity Number: 658282 and 681322 FAO Project Symbol: GCP /BEN/064/GFF and GCP /BEN/066/LDF
	Countries: Bénin
	EOD (Implementation start): 1 Oct 2022 NTE(Implementation end): 30 Sept 2027
Environmental and Social Risk Classification:	Moderate risk
Gender Marker[1]:	G2a
Contribution to FAO's Strategic Framework: (Indicate as appropriate)	Strategic Objective/Organizational Outcome: ▪ Better Environment (BE1): Climate change mitigating and adapted agri-food systems ▪ Better Environment (BE3): Biodiversity and ecosystem services for food and agriculture ▪ Better Production (BP1) Innovation for sustainable agriculture production Country Outcome(s): 1. Consolidation of food and nutritional security in a context of climate change & 2. Improved sustainable management of natural and forest resources Country Programming Framework(s) ▪ Output 1.3: The resilience of production systems and households to climate change and the sustainable management of land and natural resources are strengthened ▪ Output 2.1: A governance system conducive to the sustainable management of renewable natural resources is put in place ▪ Output: 2.3. Forest ecosystems and soils are restored to promote conservation of hydrological regimes, protection of biodiversity and maintenance of soil productivity Regional Initiative/Priority Area: ▪ 1. Sustainable agri-food production system ▪ 3. Climate action and sustainable natural resource management
	Project Budget (GEF/SCCF/LDCF): $7,155,936 Co-financing: $60,864,797 Total Project Budget: $68,020,733

Executive Summary

The GEF-funded project entitled "Strengthening human and natural systems resilience to climate change through mangrove ecosystems conservation and sustainable use in southern Benin" aims to increase the climate change resilience of mangrove ecosystems and their dependent agricultural, forestry and fishery communities and support the conservation of biodiversity and ecosystem services within the mangrove landscapes of Ramsar sites 1017 and 1018.

Mangrove ecosystems and their biodiversity have been receding drastically in the past decades. They are now reduced to small, disconnected stands. Benin's mangroves have a critical role in maintaining the connectivity between mangrove ecosystems across West African countries. This connectivity is crucial for the provision of ecosystem goods and services, for biodiversity conservation and to enable mangrove ecosystems to adapt to changing conditions. Mangrove ecosystems also play a critical coastal area protection role, particularly in the face of SLR and increased climate hazard as consequences of climate change. The main causes of mangrove degradation are both climate change and anthropic pressures including deforestation for woodfuel, agricultural encroachment and unsustainable practices.. Despite multiple governmental and non-governmental initiatives for mangrove protection and sustainable management, the degradation of the few remaining mangrove areas continues. Several barriers are preventing the sustainable management of mangrove landscapes. These barriers include insufficient knowledge on mangrove ecosystems and awareness of their value, insufficient integration of

[1] See Guidance Note on Gender Mainstreaming in project identification and formulation

local communities in decision-making and planning for natural resource management, limited capacity to adopt improved climate-resilient practices that promote biodiversity, and limited availability of evidence-based knowledge on good practices from within or outside the country. The GEF-funded project will focus on lifting these barriers to increase the climate resilience of communities' livelihoods in mangrove landscapes and support biodiversity conservation, working closely with and building upon current investments, including the West-Africa Coastal Area Management Programme WACA.

Following a landscape approach, the nine communes containing mangrove ecosystems that have been selected for the implementation of the on-the-ground interventions are: Grand Popo, Comè, Ouidah and Bopa in Ramsar site 1017, and Kpomassé, Abomey-Calavi, Sô-Ava,Aguégués and Sèmè-Kpodji in Ramsar site 1018. With a GEF-LDCF grant of USD7,155,936 and USD 60,864,797 as cofinancing, the project will address the identified barriers through the implementation of three complementary components:

- Component 1: Increased adaptive capacity of the natural systems
- Component 2: Increased adaptive capacity of the human systems thanks to livelihood diversification and development
- Component 3: Enabling environment for sustainable management of mangrove ecosystems in a context of climate change.

As a result of the project interventions, it is expected that 50,000 ha of mangrove landscapes will be under improved management practices by the end of the project, 300,000 people including 50% of women will benefit directly from the project.

CONTENT

ACRONYMS

Acronym	English	French
ABE	Beninese Agency for the Environment	Agence Béninoise pour l'Environnement
ACCB	Community-based Biodiversity Conservation Area	Aires Communautaires de Conservation de la Biodiversité
AFD	French Development Agency	Agence Française de Développement
ANR	Assisted Natural Regeneration	
APC	Community-based Protected Areas	Aires Protégées Communautaires
ASF	Financial Services Association	Association de Services Financiers
ATDA	Decentralised Agency for Agricultural Development	Agence Territoriale de Développement Agricole
AVEC	Village Associations for Savings and Loans	
BEES	Benin Environment and Education Society	
CAVECA	Auto-managed Village Fund for Savings and Loans	
CBD	Convention on Biological Diversity	
CBNRM	Community-based Natural Resources Management	
CBO	Community-based Organisation	
CENAGREF	National Centre for the Management of Fauna Reserves	
CERF	Centre for Studies, Research and Training in Forestry	Centre d'Etudes, de Recherches et de Formation Forestières
CLCAM	Local Fund for Agricultural and Mutual Credit	
CSO	Civil Society Organisation	
DDA	Departments of Decentralized Authorities	
DDAEP	Decentralized Departments of Agriculture, Livestock Husbandry and Fisheries	
DDCVDD	Decentralized Departments of Living Environment and Sustainable Development	
DDT	Provincial Departments of Tourism	Directions Départementales du Tourisme
DGEC	General Direction for Environment and Climate	
DGEFC	General Directorate for Water, Forestry and Hunting	
DPE	Department for the Promotion of Eco-citizenship	Direction de la Promotion de l'Ecocitoyenneté
DPH	Directorate of Fish Production	Direction de la Pêche
ECOWAS/CEDEAO	Economic Community of West African States	Communauté économique des États de l'Afrique de l'Ouest
FADeC	Support Fund for Communal Development	Fond d'Appui au Développement des Communes
FAO	Food and Agriculture Organization of the United Nations	
FNDA	Support Fund for Agricultural Development	
FNEC	National Fund for the Environment and Climate	Fond National pour l'Environment et le Climat
GAP	Gender Action Plan	
GCLME	Guinea Current Large Marine Ecosystem	
GDP	Gross Domestic Product	
GEF	Global Environment Facility	
GIS	Geographic Information System	
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit	
INF	National Women Institute	Institut National de la Femme
INSAE	National Institute of Statistics and Economic Analysis	Institut National de la Statistique et de l'Analyse Économique
IPCC	Intergovernmental Panel on Climate Change	
IUCN	International Union for the Conservation of Nature	

LAAEDD	Laboratory of Applied Anthropology and Education on Sustainable Development	
LABEF	Laboratory of Biomathematics and Forest Assessments	Laboratoire de Biomathématiques et d'Estimations Forestières
LDCF	Least Developed Countries Fund	
LEA	Laboratory of Applied Ecology	Laboratoire d'Ecologie Appliquée
MACO	Regional Marine and Coastal Programme	
MAEP	Ministry of Agriculture, Breeding and Fisheries	Ministère de l'Agriculture de l'Élevage et de la Pêche
MCAT	Ministry of Culture, Handcrafting and Tourism	
MCVDD	Ministry of Living Environment and Sustainable Development	
MDGL	Ministry of Decentralization and Local Governance	
MOLOA	Observation Mission of West African Littoral	Mission d'Observation du Littoral Ouest Africain
MTR	Mid-Term Review	
NGO	Non-Governmental Organisation	
NPC	National Project Coordinator	
NPD	National Project Director	
NTFP	Non-Timber Forest Product	Produit Forestier Non-Ligneux
OP	Operational Partner	
PADAAM	Support Project for Agricultural Development and Market Access	Project d'Appui au Développement Agricole et l'Accès au Marché
PADME	Support Project do Develop Micro-Enterprises	
PDC	Communal Development Plan	Plan de Développement Communal
PES	Payment for Ecosystem Services	
PIF	Project Identification Form	
PIR	Project Implementation Review	
PMU	Project Management Unit	
PPG	Project Preparation Grant	
PPP	Public-Private Partnership	
PSC	Project Steering Committee	
ReBPA	National Network to promote AgroEcology	
RBT-Mono	Transfrontier Biosphere Reserve of Mono Delta	Reserve de Biosphere Transfrontaliere du Delta du Mono
SAFE	Public Land and Environmental Services	Services des Affaires Domaniales et Environnementales
SDG	Sustainable Development Goals	
SLR	Sea Level Rise	
TCP	Technical Cooperation Project	
UEMOA	West African Economic and Monetary Union	Union Economique et Monétaire Ouest Africaine
UNAPEMAB	National Union of small-scale Fisherman in Benin	Union Nationale des Pêcheurs Marins et Assimilés du Bénin
UNESCO	United Nations Educational, Scientific and Cultural Organization	
USAID	United States Agency for International Development	
WACA	West Africa Coastal Areas Management Program	
ZIT	Interesting Subzones for Tourism	sous-Zones d'Intérêt Touristique

PART I: PROJECT INFORMATION

Project Title: Strengthening human and natural systems resilience to climate change through mangrove ecosystems conservation and sustainable use in southern Benin			
Country(ies):	Bénin	GEF Project ID:	10116
GEF Agency(ies):	FAO	GEF Agency Project ID (FAO entity number):	658282 and 681322
Project Executing Entity(s):	Ministry of Living Environment and Sustainable Development (MCVDD)	Submission Date	3 March 2022
GEF Focal Area (s):	Multi-focal Areas	Expected Implementation Start	1 October 2022
		Expected Completion Date	30 Sept 2027
Name of Parent Program	N/A	Parent Program ID:	N/A

A. *FOCAL/NON-FOCAL AREA ELEMENTS*

Programming Directions	**Focal Area Outcomes**	**Trust Fund**	**(in $)**	
			GEF Project Financing	**Co-financing**
CCA-1	Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation	LDCF	2,977,473	31,081,769
CCA-2	Mainstream climate change adaptation and resilience for systemic impact	LDCF	1,488,737	10,360,590
BD-1-1	Mainstream biodiversity across sectors as well as landscapes and seascapes through biodiversity mainstreaming in priority sectors	GEFTF	2,689,726	19,422,438
Total project costs			**7,155,936**	60,864,797

B. *PROJECT DESCRIPTION SUMMARY*

Project Objective: To increase the resilience of mangrove ecosystems and their dependent agricultural, forestry and fishery communities to climate change and support the conservation of biodiversity and ecosystem services within the mangrove landscapes of Ramsar sites 1017 and 1018.

Indicator:
Area of mangrove landscapes under climate-resilient and sustainable management to benefit biodiversity (target: 50,000 ha), including selected areas in Ramsar sites and surrounding production land (alignment with Sustainable Development Goal 15 – SDG 15 – Target 15.2 Indicator 15.2.1)

Project Components	**Component Type**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Co-financing**
Component 1: Increased adaptive capacity of the natural systems	INV	1. Mangrove ecosystems and their ecosystem services and goods are sustainably managed to benefit the local agricultural, forestry and fishery communities and biodiversity in demonstration sites. Target 1: 50,000 ha of vulnerable and	1.1 Knowledge gaps on the distribution, composition, health, value and resilience of mangrove ecosystems addressed in order to inform integrated management planning of mangrove landscapes under Output 1.4 1.2 Local awareness-raising platforms in demonstration sites established and made	GEFTF LDCF	1,465,000 1,478,033 TOTAL 2,943,033	7,458,050 16,144,394 23,602,444

		degraded mangrove landscapes under climate-resilient and sustainable management to benefit biodiversity Target 2: 9 communes adopt and implement mangrove ecosystem management plans, benefitting directly the climate resilience of at least 300,000 people including 50% of women	operational to mobilise and engage local stakeholder groups in mangrove ecosystem management planning, implementation and monitoring 1.3 Mangrove landscapes' integrated management plans developed/updated in 9 communes involving local stakeholders, including from agriculture, forestry and fishery sectors 1.4 Mangrove landscapes' integrated management plans implemented in 9 communes, promoting innovative and integrated technologies and approaches in the agriculture, forestry and fisheries sectors that contribute to ecosystem restoration, resilience and sustainability 1.5 Capacity of ACCBs, APCs and other relevant CBOs and local stakeholders increased in administrative and financial management, project management, and monitoring			
Component 2: Increased adaptive capacity of the human systems thanks to livelihood diversification and development	INV	2. Agricultural, forestry and fishery communities dependent on mangrove ecosystems adopt gender-empowering, biodiversity-friendly and sustainable alternative livelihoods that increase their resilience to climate change. **Target 1:** 5,000 people including 50% of women benefit from increased income thanks to climate resilient alternative livelihoods (including 1,500 fishermen and 3,500 agricultural and forestry producers,	2.1 Sustainable nature-based value chains strengthened to increase the resilience of communities' income sources using a participatory and gender-sensitive approach 2.2 At least three local public-private partnerships created and operationalized to catalyse investments for alternative nature-based livelihoods and value chains in the targeted communities 2.3 Access to financial opportunities increased for community members – including¬ the most vulnerable and poorest ¬– in the mangroves landscapes to support the adoption of sustainable nature-based livelihoods	GEFTF LDCF	531,447 2,400,000 TOTAL 2,931,447	7,337,574 16,144,393 23,481,967

		processors and traders)				
Component 3: Enabling environment for sustainable management of mangrove ecosystems in a context of climate change	TA	3. National institutional and policy frameworks strengthened to sustainably manage mangrove landscapes in a context of climate change and knowledge about climate-resilient mangrove ecosystem management improved, captured and disseminated. **Target 1:** At least 3 local decrees developed and proposed amendment to 1 national law to support the sustainable and climate resilient mangrove management **Target 2:** At least two institutional coordination mechanisms (one collaboration platform and one decision-making and planning process) for integrated planning of mangrove landscape strengthened	3.1. Institutional and legal framework pertaining to mangrove landscapes' management (including community-based management) strengthened 3.2. Capacity development plan designed and implemented for governmental institutions working on mangroves in Benin and the region to be able to support integrated, participatory and gender-sensitive processes for the sustainable management of mangrove landscapes 3.3 Knowledge and awareness on climate-resilient mangrove ecosystems conservation and sustainable use strengthened to benefit decision making at the national scale 3.4 Project's Monitoring & Evaluation plan implemented	GEFTF LDCF TOTAL	392,697 363,500 756,197	4,039,650 8,134,793 12,174,443
			M&E Cost	GEFTF LDCF TOTAL	172,500 12,000 184,500	Included in C3
			Subtotal	GEFTF LDCF TOTAL	2,561,644 4,253,533 6,815,177	18,835,274 40,423,580 59,258,854
			Project Management Cost (PMC)	GEFTF LDCF TOTAL	128,082 212,677 340,759	587,164 1,018,779 1,605,943
			Total Project Cost	GEFTF LDCF TOTAL	2,689,726 4,466,210 7,155,936	19,422,438 41,442,359 60,864,797

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: (128,082 GEFTF and 212,677 LDCF)

C. *CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE*

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Investment Mobilized	Amount ($)
Recipient government	MCVDD	Grants	Y	58,640,000
GEF Agency	FAO	Grants	Y	2,224,797
Total Co-financing				60,864,797

Describe how any "Investment Mobilized" was identified.

The investment mobilised are new and additional investments made by financial and development partners in Benin's mangrove ecosystems, that have a same geographical and thematic scope and overlap in time. The investments are executed by either the MCVDD, which is the case for the *WACA project*, or FAO. FAO executes the *Support Project for the implementation of the PADAAM project* (UTF/BEN/062/BEN) and the Technical Cooperation Project *Support Project for seed production of indigenous and exotic forest species in Benin* (TCP/BEN/3804). Details are provided in the baseline projects section.

D. *TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS*

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
FAO	GEFTF	Benin	Biodiversity	N/A	2,689,726	255,524	2,945,250
FAO	LDCF	Benin	Climate Change	N/A	4,466,210	424,290	4,890,500
Total GEF Resources					7,155,936	679,814	7,835,750

E. *DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT?* ***N/A***

F. *PROJECT'S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS*

Project Core Indicators		Expected at CEO Endorsement
1	**Terrestrial protected areas** created or under improved management for conservation and sustainable use (Hectares)	
2	**Marine protected areas** created or under improved management for conservation and sustainable use (Hectares)	
3	Area of **land restored (**Hectares)	
4	Area of **landscapes under improved practices** (excluding protected areas)(Hectares)	Indicator 4.1: 50,000 ha
5	Area of **marine habitat under improved practices** (excluding protected areas) (Hectares)	
	Total area under improved management (Hectares)	
6	**Greenhouse Gas Emissions Mitigated** (metric tons of CO2e)	
7	**Number of shared water ecosystems** (fresh or marine) under new or improved cooperative management	
8	Globally over-exploited **marine fisheries** moved to more sustainable levels (metric tons)	
9	**Reduction**, disposal/destruction, phase out, **elimination** and avoidance of **chemicals of global concern** and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of **POPs to air** from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of **direct beneficiaries disaggregated by gender** as co-benefit of GEF investment	300,000 people including 50% of women

PART II: PROJECT JUSTIFICATION

1.a Project Description

1. This section first presents the general context (geographic, political, social, economic, environmental and climatic context) in Benin. The following part of this section focuses on the nine communes in Benin that contain mangroves and are therefore targeted by the project. After presenting the context in these communes, the main sources of income, land tenure system and local climate conditions are presented to better understand the communities' vulnerability and adaptive capacity in the targeted communes. The institutional and policy context pertaining to the management of natural resources at the national level is thereafter described with a specific focus on mangrove resources' management. Current decision-making processes for development planning are also briefly presented. This section then narrows the focus on mangroves ecosystems and the main threats that these fragile ecosystems are facing as well as the drivers of degradation in the targeted landscapes. Thereafter, it discusses the existing barriers to the sustainable management and preservation of mangrove ecosystems and their biodiversity, under changing climate conditions. The Theory of Change proposed to address these barriers and achieve the expected results regarding increasing the resilience of mangrove ecosystems and communities that depend on them is provided in graphic and narrative format with a detailed description of Component, Outputs, baseline situation (including previous and ongoing initiatives and lessons learned) specific to each output, proposed activities and indicators with targets. The remaining sub-sections include the description of the alignment of the proposed project with previous projects funded by the Global Environment Facility (GEF) and other relevant initiatives, the expected contribution of the GEF-funded project compared to the business-as-usual scenario, the expected global environmental benefits, the sustainability and innovativeness of the proposed project as well as the selected approach to scaling up. Finally, the changes made between the Project Identification Form (PIF) and the full proposal will be explained.

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description).

1.1 Brief description of the geographic, political, social, economic, environmental and climatic context in Benin (national scale)

2. Benin is a sub-Saharan African country of 114,763 km² located between the equator and the Tropic of Cancer, between the parallels 6°30' and 12°30' north latitude and the meridians 1° and 30°40' east longitude. It is limited by Togo to the West, Nigeria to the East, Burkina Faso and Niger to the North, and by the Atlantic Ocean to the South. Its coastline stretches over 125 km. The country is relatively flat, with four main geomorphologic features. A sandy coastal plain in the South characterized by wetlands, lakes and lagoons – in which the current project will be implemented, sedimentary plateaus in the lower part of the country, a crystalline peneplain in the central part of the country, and the Atacora chain in the North.

3. **Benin's climate** is characterized by the annual succession of a dry season and a rainy season. The average annual rainfall ranges from 700 mm in the North to 1,500 mm in the South. The mean temperature is around 28°C with limited seasonal variability. In the last decades, there is a tendency towards increased average temperature. Seasonal variability in rainfalls has also significantly increased between 1971 and 2010[2]. Both droughts and rains have intensified during this period, thereby enhancing soil erosion and floods. Sea Level Rise (SLR) is a major factor of degradation of Benin coastline and the coastline is continuing to recede with global warming. According to the latest climate models, temperatures will further increase, and precipitations will decrease in the near future (see Part II Section 1.a. Sub-section 1.2 for more information). Climate change is expected to lead to floods, droughts, erosion, agricultural yield loss, salinization, wetlands destruction, ocean acidification and the propagation of invasive species. This is expected to have a negative impact of the livelihoods of Benin's communities.

4. The population is largely concentrated in the southern coastal zone and was estimated at 12,123,198 inhabitants in 2020[3] including 50.80% of women. Those under 15 represent nearly 48% of the population and nearly 75% of households are headed by men[4]. Benin has one of the highest **demographic growth** rates in the sub-region

[2] Ministère de l'Environnement, 2015. Contributions Prévues Déterminées au Niveau National.
[3] https://data.worldbank.org/indicator/SP.POP.TOTL?locations=BJ consulted on 18 November 2021
[4] INSAE, 2019. Statistiques agricoles. https://www.insae.bj/statistiques/statistiques-agricoles. Consulted on 21 August 2021

(2.7% in 2020). It is a predominantly rural society with a strong reliance on natural resources for subsistence and income.

5. The country is characterized by a democratic government and **political stability**. With a Gross Domestic Product (GDP) estimated at 7,922 billion XOF in 2018 and 8,814 billion XOF in 2019, it has become a middle-income country (lower bracket) with a GDP per capita of 1,250 USD[5]. The country's economic growth has been significant in the last decade and was estimated at 6% in 2020. However, poverty is still widespread which can be explained by a low growth rate per capita (on average only 1.5% over the period 2008-2018[6]). At the national level, the poverty rate was 38.2% in 2020 against 40.1% in 2015[7], and the Human Development Index was 0,54 in 2020 which places the country at the 159th position out of 189 countries assessed[8]. However, it has the highest human development score of all countries that are part of the Monetary Union of West Africa and third of the Economic Community of West African States (after Cabo Verde and Ghana).

6. Benin's **economy is strongly reliant on agriculture**, especially cotton which is the country's main export product, but also on informal re-export and transit trade with Nigeria which is estimated at around 20% of GDP[9]. Indeed, the primary sector is characterized by agricultural production and forestry, contributing to more than 25% of the GDP and employing more than half of the population[10]. The agricultural sector, including agriculture, animal husbandry and fishing, is therefore the main source of livelihood for the population. Maize, beans, rice, peanuts, cashews, pineapples, cassava and yams are grown for local subsistence and for export to neighboring countries through informal cross-border trading activities. Top commodities produced by quantity are cassava, yams, maize, pineapples, tomatoes, rice, cotton fiber, cashew nuts, fresh fruit, and groundnuts[11]. Exports (CFAF 498 billion in 2019) are highly concentrated on three of these products: cotton fibre (53% of the country's exports), cashew nuts (9% of exports) and oilseeds (e.g. almonds, shea butter, palm oil – 4.7% of exports)[12].

7. The secondary sector is dominated by cotton ginning activities and artisanal processing of agricultural products which contributes to 13% of the GDP. The tertiary sector is centred on trade with the highest contribution to the GDP (approximately 36%[13]). Public revenues, mainly fuelled by taxation, constitute the main resource of the state, enabling it to finance security, health, education and public investment[14]. In July 2021, the national inflation rate was + 2.0%[15]. Benin is vulnerable to exogenous shocks such as adverse weather conditions, terms of trade (especially for cotton and oil prices), and developments in Nigeria.

[5] INSAE, 2021. Statistiques Économiques : Les Comptes nationaux du Bénin 2015 à 2018 https://insae.bj/statistiques/statistiques-economiques, consulted on 11/08/2021; General Directorate of Treasury, 2021. Benin : Situation économique et financière. https://www.tresor.economie.gouv.fr/Pays/BJ/conjoncture, consulted on 11 August 2021
[6] World Bank, 2021. Bénin Présentation. https://www.banquemondiale.org/fr/country/benin/overview, consulted on 11 August 2021
[7] World Bank, 2021. Bénin Présentation. https://www.banquemondiale.org/fr/country/benin/overview, consulted on 11 August 2021
[8] UNDP-Benin, 2019. Benin en bref. Rapport annuel de 2019.
[9] General Directorate of Treasury, 2021. Benin : Situation économique et financière. https://www.tresor.economie.gouv.fr/Pays/BJ/conjoncture, consulted on 11 August 2021
[10] UNDP-Benin, 2019. Benin en bref. Rapport annuel de 2019.
[11] http://www.fao.org/faostat/en/#country/53
[12] General Directorate of Treasury, 2021. Benin : Situation économique et financière. https://www.tresor.economie.gouv.fr/Pays/BJ/conjoncture, consulted on 11 August 2021
[13] Nago et al., 2018. Examen stratégique national « faim zéro » au Bénin à l'horizon 2030. Rapport final, septembre 2018. Appui financier du Gouvernement du Bénin et du Programme Alimentaire Mondiale (PAM). 192p.
[14] AfDB, 2015
[15] INSAE, 2021. Statistiques Économiques : Les Comptes nationaux du Bénin 2015 à 2018 https://insae.bj/statistiques/statistiques-economiques, consulted on 11/08/2021

1.2 Description of the project intervention sites

GENERAL CONTEXT: LOCATION, LAND USE (AGRICULTURAL LAND, PASTORAL LAND, PROTECTED AREAS…), MANGROVE FORESTS, BIODIVERSITY AND OTHER NATURAL RESOURCES

8. Benin is part of the Guinea Current Large Marine Ecosystem (GCLME), one of the world's most productive marine and coastal ecosystems, that extends from northern Guinea Bissau to southern Gabon. The GCLME contains valuable wetlands and mangroves that host major coastal ecosystems. FAO describes "mangroves" as characteristic littoral plant formations of tropical and subtropical sheltered coastlines. It further adds that mangroves are trees and shrubs growing below the high-water level of spring tides. Mangrove ecosystems provide **critical ecosystem services,** which include i) coastal protection against wave and wind erosion; ii) mitigation of coastal storms and cyclones impacts; iii) shelter and habitat for wildlife; iv) nutrient sink effect and reduction in excessive amounts of pollutants; and v) entrapment of upland runoff sediments thus protecting nearshore reefs and reducing water turbidity (FAO, 1994) [16] . They **contribute to the improvement of rural communities' livelihoods and are essential for biodiversity**. In addition, Benin's mangroves have a critical role in maintaining the connectivity between mangrove ecosystems across West African countries – particularly between the large stands of mangroves in Nigeria and those further west – because of their geographical location. This connectivity is necessary to enable mangrove ecosystems and the species they contain to respond and adapt to a changing climate.

9. Two areas have been designated as Wetlands of International Importance (Ramsar sites) in Southern Benin. They cover Benin's coastline[17] and a total area of 1,177,049 ha (10.2% of the country's surface). They include the entirety of Atlantique, Ouémé and Mono Departments, and part of Couffo and Zou Departments. These two Ramsar sites include all the mangrove ecosystems in Benin. Within these sites, nine communes contain mangroves and are therefore targeted by the project. Four of these communes namely Grand Popo, Comè, Ouidah and Bopa are located in Ramsar site 1017 and cover a surface of 108,963 ha which corresponds to 20.8% of the Ramsar site. The other five communes are located in Ramsar site 1018: Kpomassé, Abomey-Calavi, Sô-Ava,Aguégués and Sèmè-Kpodji. They cover a surface of 136,664 ha which corresponds to 20.9% of the Ramsar site. The main criteria to select these communes was the presence of mangrove ecosystems. Despite the differences between communes in potential for mangrove conservation and regeneration, it was decided to retain all nine communes as the project intervention area to be able to apply a landscape-level approach and to enable increased connectivity between the mangrove areas across Benin coastlines.

[16] http://www.fao.org/3/ap428e/ap428e00.pdf
[17] https://rsis.ramsar.org/ris/1017 and https://rsis.ramsar.org/ris/1018

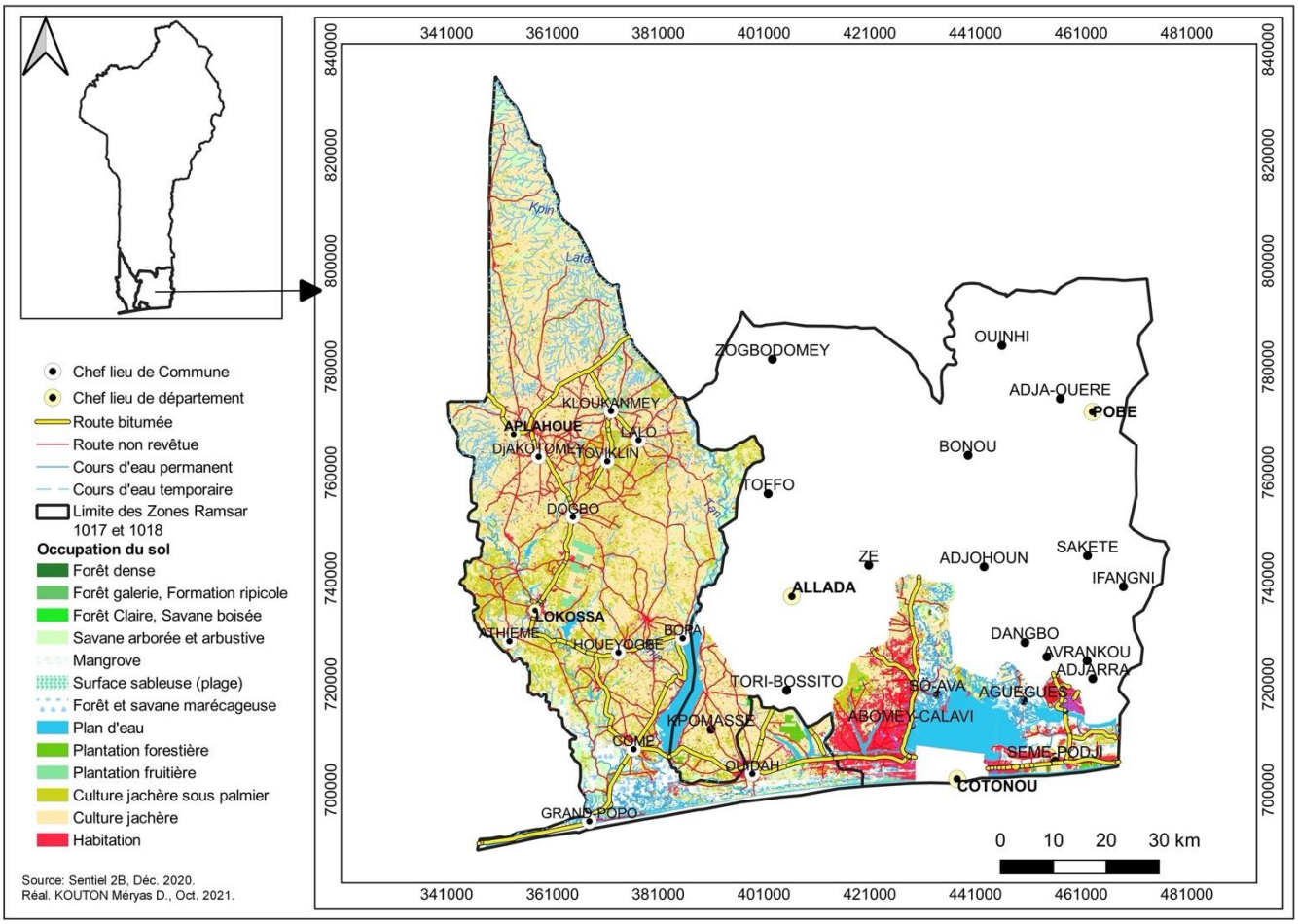

Figure 1: Land-uses in the nine targeted communes (Source: Dr Kouton, 2021)

Disclaimer: The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries

Table 1: General characteristics of the populations of the targeted communes. Source : * RGPH4 (INSAE 2016) ; ** National Institute of Statistics and Economic Analysis (INSAE)-EMICoV, 2015)

Communes		**Sèmè-Kpodji**	**Abomey-Calavi**	**Kpomassè**	**Ouidah**	**Bopa**	**Comè**	**Grand Popo**	**Sô-Ava**	**Aguégués**	**Bénin**
Population *	Tot	222,701	656,358	67,648	162,034	98,281	79,989	57,636	118,547	44,562	10,006,749
	M	109,594	323,574	33,353	78,596	46,785	38,507	28,237	60,020	22,198	4,887,820
	F	113,107	332,784	34,295	83,438	49,496	41,482	29,399	58,527	22,364	5,120,929
Number of households*		49,490	145,510	15,280	36,459	18,136	18,862	14,054	20,356	8,463	1,803,123
Size of households*		4,5	4,5	4,4	4,4	5,3	4,2	4,1	5,8	5,3	5,6
Population density (inhabitants/km²)*		891	1,218	222	445	269	491	199	544	433	87
Main ethnic groups**		Xwla Tori Goun	Aizo Fon Toffin	Fon and relatives Adja and relatives	Xwéda Fon Aïzo	Kotafon Houédah Sahouè Aizo	Houédah Sahouè	Xwla Houédah Mina	Fon and relatives Adja and relatives	Fon and relatives Adja and relatives	-

10. Abomey-Calavi has a significantly higher population size than the other targeted communes, followed by Sèmè-Kpodji. Based on the latest census (2015), the total population in the targeted communes is 1,507,756 inhabitants, 44% of which live in Abomey Calavi, 15% in Sèmè-Kpodji and 10% in Ouidah. There is a majority of women in these communes with a proportion ranging from 50.2% in Aguégués to 51.9% in Comè, except for Sô-Ava (49.4%) where women sometimes prefer to leave this lakeside city for Abomey-Calavi or Cotonou. Population size is increasing in each of the nine communes. The communes with the highest population density are Abomey-Calavi with 1,218 inhabitants/km², Sèmè-Kpodji with 891 inhabitants/km², Sô-Ava with 544 inhabitants/km² and Ouidah with 445 inhabitants/km², which is much higher than the national average of 87 inhabitants/km². The average number of people per household ranges from 4.1 people (in Grand-Popo) to 5.8 people (in Sô-Ava), with an average across the nine

communes of 5.6. There is on average 37% of the population aged 18 or more with the lower proportion in Sô-Ava (21.3%) and the higher one in Grand-Popo (39.5%).

11. The main land-use categories in the targeted communes are: agricultural land, open forests/shrubland/savannahs, urban areas and water bodies which represent 41.8%, 21.5%, 16.3% and 15.3% of the total area respectively. Agricultural land is the main land-use category in Bopa (85%), Kpomassé (68,8%), Ouidah (46,7%) and Comè (43.6%). Open forests/shrubland/savannahs are the main land-use category in Grand-Popo (64,7%),Aguégués (42,4%) and Sèmè-Kpodji (31,2%). Urban areas cover the majority of the land in Abomey-Calavi (40,2%), Sô-Ava is mostly covered by water bodies (66.2%).

12. A total of 52 sacred forests with a surface ranging from 0.3 to 66.0 ha are found in these communes, representing 242 ha in total. In areas with high population density, these forests are sometimes the last remnant of natural forests. They have an important socio-cultural and ecological value. The management of these forests is traditional and revolves mostly around prohibiting entry. Religious chiefs define together mangrove areas that will be under the protection of the divinity Zangbétô. Thereafter, a ceremony is organised to sacralise this site. Based on traditional believes, any trespasser to these areas will be punished by the divinity.

13. In order to address the knowledge gap on mangrove surfaces in Ramsar site 1018, high resolution satellite images were used during the PPG phase to determine the surface of remaining mangroves. Field visits were thereafter undertaken to check the accuracy of these satellite images. Visual checks on the ground enabled to differentiate swamp forests from mangrove forests, which are often difficult to differentiate using satellite images only. The presence of *Rhizophora sp.* was used as the key criteria to identify mangrove areas. A threshold of 250 m distance between mangrove stands was used to separate mangrove areas. The mangrove surfaces measured using this technique are therefore significantly lower than previous estimations. Despite the limited time available for the field visits, this is so far the most accurate assessment of mangrove areas available, particularly for Ramsar site 1018. Based on this mapping exercise and on the assessments available for Ramsar site 1017, mangrove ecosystems represent 1303.3 ha in total (i.e. 0.5% of the targeted area), most of the mangroves (81%) are found in Ramsar site 1017 (Table 2). Four types of mangroves are found in the targeted communes: natural mangroves dominated by *Rhizophora racemosa* (at least 70%), natural mangroves dominated by *Avicennia germinans*, mixed mangroves dominated by *Drepanocarpus lunatus* and *Rhizophora racemosa*, and planted mangroves generally contain *Rhizophora racemosa* and *Avicennia germinans*.

TABLE 2: SURFACE OF MANGROVES AND TREND IN EACH RAMSAR SITE

	Total surface of mangroves in 2010	Total surface of mangroves in 2020
Ramsar site 1017	1039.0	1060.1
Ramsar site 1018	139.6	243.2
Total in targeted communes	1178.6	1303.3

14. The mangrove area across the targeted communes can be divided into three zones based on geographical and hydrographical context (see Figure 2 and Table 3):

- the Coastal Patch: it includes the mangroves of Grand-popo, Ouidah and Abomey-Calavi on the coastline;
- Patch Lake Ahémé: including the mangroves of Bopa, Kpomassé and Comè which corresponds to the hydrological system of Lake Ahémé;
- Patch of Porto-Novo Lagoon and Ouémé River: this patch corresponds to the mangroves of Aguégués, Sô-Ava and Sèmè Kpodji which are under the influence of Porto-Novo Lagoon and Ouémé river.

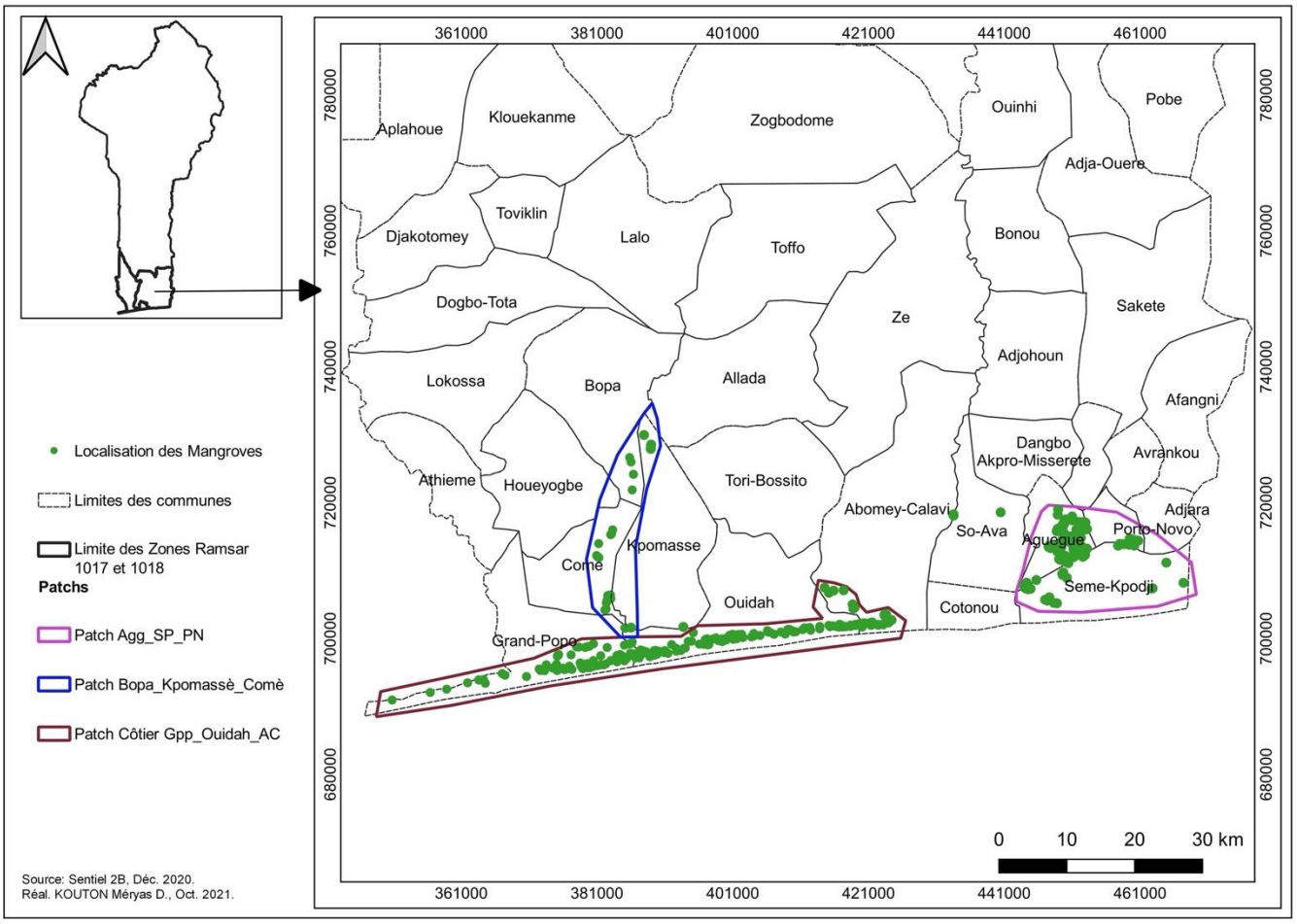

Figure 2: Representation of the three mangrove patches considered under the project (Source: Dr Kouton, 2022)

Disclaimer: The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries

Table 3: Surface, health and trend in the mangrove ecosystems in each commune

Patch	Ramsar site	Commune (from West to East)	Mangrove surface in 2020 (ha)	Loss/Gain from 2010 to 2020 (ha)	State
Coastal Patch	1017	Grand-Popo	495.1	+19.4	Healthy mangroves mostly made of *Rhizophora racemosa* and *A. germinans*. Good connectivity between mangroves and potential for biodiversity conservation.
	1017	Ouidah	542.0	-43.1	Healthy mangroves mostly made of *Rhizophora racemosa* and *A. germinans*. Good connectivity between mangroves and potential for biodiversity conservation.
	1018	Abomey-Calavi	119.2	+50.1	Highly degraded mangroves with few *Rhizophora racemosa* cohabitating with other tree and grass species.
Patch Lake Ahémé	1017	Bopa	7.0	+0.6	Degraded mangroves with *Rhizophora racemosa* and other species, pressure on ecosystems is high and resilience is low.
	1018	Kpomassé	13.1	+3.0	Degraded mangroves with *Rhizophora racemosa* and other species, pressure on ecosystems is high and resilience is low.
	1017	Comè	16.0	+2.0	Degraded mangroves with *Rhizophora racemosa* and other

					species, pressure on ecosystems is high and resilience is low.
Patch of Porto-Novo Lagoon and Ouémé River	1018	Aguégué	82.6	+27.6	Degraded mangroves with *Rhizophora racemosa* and other species, pressure on ecosystems is high and resilience is low.
	1018	Sô-Ava	1.8	+0.8	Highly degraded mangroves with few *Rhizophora racemosa* cohabitating with other tree and grass species.
	1018	Sémé-Kpodji	26.5	+22.1	Degraded mangroves with *Rhizophora racemosa* and other species, pressure on ecosystems is high and resilience is low.

15. In Ramsar site 1018, the surface of mangroves has increased from 143 ha in 2010 to 248 ha in 2020 (+40 ha in Abomey-Calavi, +28 ha in Aguégués, +22 ha in Sèmè-Kpodji). Based on the field visits, in Semè kpodji and Aguégués, this can be explained by recent government interventions that have been implemented to support mangroves' natural regeneration and by the establishment of a few private mangrove plantations (e.g. in the vicinity of hotels). In Abomey-Calavi, this increase is due to conservation interventions by local communities that enabled natural regeneration mostly through sacralisation.

16. As shown in the tables, most of the mangroves are found in the **Coastal Patch**, particularly in the communes of Grand-Popo and Ouidah. There are large patches of mangroves with planning and management tools in place. The Mono river mouth is a sandy water bed with an opening of about 10 meters. These two communes include multiple coastal villages whose economy is mostly based on mangrove ecosystems. In the Eastern part of the coastal zone, the commune of Abomey-Calavi presents highly degraded mangroves. The level of disturbance of these ecosystems has led to the growth of non-mangrove trees and grasses within the mangrove areas.

17. In **Patch Lake Ahémé**, mangroves are degraded and have a limited potential for biodiversity conservation. The small patches of mangroves are often islands of mangrove disconnected from other mangroves. There is limited potential for restoration in this site as the level of disturbance is high which results in a mix of mangrove trees, savannah and pastoral land. Most of the sides of the lake are covered with grass species (*Paspalum spp*.) with some *Avicennia germinans* trees. Four sites still have a monospecific patch of *Rhizophora racemosa* in the North of Lake Ahémé, Séhou-Gbato lowland, Mitogbodji island and the north of Ahoutou point[18].

18. The mangroves in **Patch of Porto-Novo Lagoon and Ouémé River** are degraded or highly degraded. In Sèmè-Kpodji and Aguégués, there is a continuum of narrow strips of mangroves with pockets of more or less severe degradation. There seem to be a good potential for restoration with a strong community willingness to restore mangroves. Some mangrove plantations have been successful. In Sô-Ava, there are only 1.8 ha of mangroves. There are quite large surfaces that would seem adequate for mangrove ecosystems but where they are absent. Several initiatives have been implemented to restore mangroves (e.g. Non-Governmental Organisation Benin Environment and Education Society – NGO BEES – has planted *Rhizophora racemosa* in the area to support mangrove extension) but they have been unsuccessful (see Part II Section 6 Sub-section 6.b). There are many plantations of *Acacia senegalensis* in this commune. This species is resilient to floods and can be confused with mangroves on satellite images.

LOCAL ECONOMY: MAIN LIVELIHOODS – WITH GENDER-DISAGGREGATED INFORMATION

19. Bopa and Grand-Popo have the highest income poverty rates of the coastal region. 72% of the coastal population is considered as poor or very poor, and lives with less than 700 FCFA (USD 1.2) per day. This level of poverty varies between the communes of the Atlantic coast (755 FCFA per day) and those of the Mono river (620 FCFA per day). The entire coastal zone is considered as food insecure, with the highest food insecurity index in Grand Popo. Based on data from 2019, the highest human poverty index in the targeted communes are found in Sô-Ava (45.8), Aguégués (41.5) and Bopa (37.4), and the lowest in Comè (22.9) and Sèmè-Kpodji (24.3).

[18] FAO, 2020. Stratégie national et plan d'actions de gestion durable des écosystèmes de mangroves du Bénin. Cotonou. https://doi.org/10.4060/ca2352fr

20. **Fishing** is a major economic activity in the area. It plays an important role in reducing unemployment and fulfilling the protein needs of the communities. There are two types of fisheries: inland and coastal fisheries. Inland fisheries are undertaken in lakes, rivers and lagoons. Coastal fisheries are mostly artisanal. Fishing is mostly undertaken by men, and fish processing – frying and drying methods – is undertaken by women. Oysters are also produced in the targeted communes, particularly in Lakes Nokoué and Ahémé (Ouidah commune). It is mostly undertaken by women at a very small scale for local consumption and using traditional methods. Fish production can also be undertaken in artificial fish ponds (Ahlos or Whédos) on the edge of natural water bodies.

21. **Agricultural production** is generally traditional and uses techniques such as slash-and-burn and basic tools. Some agricultural activities are becoming more modern with young graduates, retired government staff and businesses investing in these activities. 80% of agricultural land is used to grow maize and casava primarily for household consumption and for local markets. Other major crops include tomatoes, chilis, leafy vegetables (e.g. spinach, *gboma*) and exotic vegetables (e.g. carrot, water melon, pepper). Fruits and vegetables are mostly sold on the local and provincial markets. Women are more involved in fruits and vegetables production than in staple crop production. However, the processing of casava into casava flour (i.e. "gari" or "tapioca") is also undertaken by women.

22. **Livestock husbandry** is undertaken at a small scale with the animals being kept in small basic enclosure or free roaming. In the targeted areas, small livestock such as goats, cows, sheep and chickens are dominant. However, in recent years, the demand for pigs has been increasing. Livestock husbandry is generally a secondary economic activity for the household. However, some semi-modern pig farms have been established as well as hens and rabbits farming systems on stilts and in claustration in Sèmè-Kpodji, Ouidah and Abomey-Calavi communes. Eggs are sold on local and national markets. Rabbits are produced on command for the tourism industry. In addition to rabbits' production, snails and cane rats' production are emerging as new activities to diversify income sources.

23. Based on the field visits, **ecotourism** is present mostly in Grand-Popo, Ouidah and Sô-Ava. Each of these communes have a budget line for ecotourism development. According to the National Tourism Policy 2013–2025, there are four interesting subzones for tourism (ZIT[19]) in the targeted area: i) "ZIT of estuaries" in the lower Valley of Mono River; ii) "ZIT of Lakes" covering Lakes Ahémé and Nokoué; iii) "ZIT of Deltas" in the lower Valley of Ouémé; and iv) "ZIT of coastline" including beaches and coastal lagoons. Some remarkable sites include La Bouche-du-Roy which corresponds to the Mono river mouth, the Slaves road, private parks and sacred water bodies. Tourism tours and corresponding infrastructure have been established in Grand-Popo and Ouidah. In Sô-Ava, there is an association of guides who coordinates transportation and activities for tourists on the lake. Hand-crafting products from water hyacinth are sold to tourists by women. Overall, the tourism sector makes a small contribution to the development of the area but it is a significant source of income in some of the targeted communities particularly for women.

24. **Salt production** is an important source of income in Ouidah followed by Grand-Popo and Abomey-Calavi. The production of cooking salt is an inter-cropping season activity which is practiced by all households in districts close to mangrove ecosystems. The produced salt covers the consumption need of the local communities, and more than 50% of the national consumption. Salt extraction only occurs during the dry season as traditional agricultural activities become impossible without rainfall. Salt production is generally undertaken by women and provides them a consistent income to fulfil their essential needs. In Ouidah, women are organized into well-functioning cooperatives and can access financial support. The salt is sold on local markets and to retailers for the national market. This activity necessitates lots of calorific energy and mangroves' wood is often preferred for its slow burning properties.

25. Several **Non-Timber Forest Products (NTFPs)** are harvested in mangrove areas and sold to the market. These include: i) leaves of *Thalia geniculata* and of elephants' ears (*Lasiomorpha senegalensis*) used as natural wrapping material in markets; ii) *Typha domingensis* and *Cyperus articulatus* transformed into mats; iii) several species harvested for medicinal purposes; and iv) snails (particularly in Comè) and some water birds such as moorhens sold in local market or in Nigeria. Harvesting of *Cyperus articulatus* to make artisanal mats is an important source of income in Grand-Popo commune particularly for women[20]. Forest degradation has had a major impact on the

[19] sous-Zones d'Intérêt Touristique

[20] Gnansounou S C et al. (2021) Local uses of mangroves and perceived impacts of their degradation in Grand-Popo municipality, a hotspot of mangroves in Benin, West Africa. Trees, Forests and People 4

availability of medicinal plants. Today, it is no longer possible for traditional healers to find adequate plant diversity to support the traditional medicine[21]. In Grand Popo, medicinal plant collection focuses primarily on *Rhizophora racemosa, Avicennia germinans, Moringa oleifera, A. indica, Jatropha curcas*, and *Cocos nucifera* to cure illnesses such as malaria, hypertension, cough, digestive issues, headache, infertility, abortion and cancer among others.

26. Multiple **plantations** have recently been established in the targeted communes as a result of the efforts of NGOs and government institutions to combat deforestation. A diversity of trees is therefore grown for fuelwood, for their fruits or for restoration interventions. The main species grown in the targeted communes are: i) for timber and energy: Acacia, teck, filao and eucalyptus; and ii) for fruits: palm trees, lemon and orange trees, mangoes and coconut trees. In addition, mangrove trees are produced in Grand-Popo, Aguégués, Sèmè-Kpodji, Sô-Ava and Abomey-Calavi. Some particularities among the different communes include the production of Neems in Sô-Ava and Moringa in Abomey-Calavi. Palm fruits and coconuts from plantations are transformed into oil, generally by women.

27. Other sources of income found in the targeted communes include **timber extraction** from natural forests, **hunting**, **sand exploitation** and **fluvial transportation** of goods (e.g. in Grand Popo). Timber extraction is primarily undertaken by men to address the need in construction material[22]. Hunting is not a widespread activity, but it is practiced by some community members. It focuses on mammals such as monkeys, pangolins and mongooses, reptiles such as varans and pythons, and birds. Hunting is poorly regulated and is undertaken without authorization or permit. However, some areas are considered as sacred and are therefore exempt from hunting activities.

ACCESS TO LAND

28. Land accessibility varies from one commune to another based on the level of urbanisation. In Kpomassé, Sèmè-Kpodji and Grand-Popo, the majority of the land is communal. In Kpomassé and Sèmè-Kpodji, pressure from urbanization is very low and the land remain used primarily for agricultural purposes. Land is inherited, donated or occasionally purchased. In Abomey-Calavi and Ouidah, urbanisation and the project "Fishing routes" have led to a major increase in the demand for land from private investors to develop tourism. As a result, in Ouidah, most of the land is now private and farmers' landowners are rare. In Sô-Ava, land ownership is scarce because a large portion of the area is covered by water. The communities have however defined a system to divide the water body into plots. These plots are sold to fisherman who undertake the Acadja fishing practice. The Land-Tenure policy which consider the 25m of banks on both sides of water ways as natural public land is therefore not applied in Sô-Ava. Overall, land accessibility in the targeted communes is limited, even more so for women who face additional socio-cultural barriers (see Part II Section 3).

CURRENT CLIMATE CONDITIONS AND FUTURE CLIMATE SCENARIOS

Current climate conditions and observed trends in the targeted area

29. There are four climatic seasons in the targeted area: dry season from mid-November to mid-March, wet season from mid-march to mid-july, mild dry season from mid-July to mid-September, and mild wet season from mid-September to mid-November. Rainfall along the coastline reduces from East to West with 1500 mm/year in Sèmè-Kpodji, 1100 mm/an in Ouidah and 900 mm/year in Grand-Popo. The majority of the rainfall occurs in June. Seasonal variations in temperature are low (i.e. 2 to 6 ˚C) with temperatures ranging between 27-32˚C during the warmest season and 22-25˚C during the coolest season.

30. The mean average temperature has increased since 1960 by 1.1ºC, the average number of "hot" days[23] per year in Benin has increased by 39 between 1960 and 2003, and hot nights by 73 in the same period[24]. In contrast, the frequency of "cold" days and nights, annually, has decreased significantly since 1960. Moreover, the annual count of wet days as well as the annual maximum 30-day total rainfall showed a substantial decrease over the 1960-2000 period[25]. Annual precipitations have not significantly increased or decreased over the period 1951-2010 but there is a

[21] Teka O et al. (2019) Mangroves in Benin, West Africa: threats, uses and conservation opportunities. Environ Dev Sustain (2019) 21:1153–1169.
[22] Teka O et al. (2019) Mangroves in Benin, West Africa: threats, uses and conservation opportunities. Environ Dev Sustain (2019) 21:1153–1169.
[23] 'Hot' day or 'hot' night is defined by the temperature exceeded on 10% of days or nights in current climate of that region and season. 'Cold' days or 'cold' nights are defined as the temperature below which 10% of days or nights are recorded in current climate of that region or season.
[24] McSweeney et al. (2010)
[25] Climate Service Centre (2015): Climate fact sheet Benin, Ghana, Togo http://www.climate-service-center.de/

succession of short periods with excess and shortage of rainfalls. In addition, seasonal variability has significantly increased between 1971 and 2010[26]. Both droughts and rains have intensified thereby enhancing soil erosion and teh frequency of floods.

31. SLR is a major factor of degradation of Benin coastline. According to a study undertaken in 2017 on the coastline of Togo and Benin, the coastline has receded by on average 2.2 m/year between 2000 and 2015. In Ouidah commune, as an example, sea level has risen by 33 m in the South East and 28 m in the South West between 2002 and 2014. As a result, the village of Djondji – located between Grand-Popo and Ouidah – has almost completely disappeared.

Future climate scenarios and expected impact

32. Diffenbaugh and Giorgi (2012) identified the Sahel and tropical West Africa as hotspots of climate change for both RCP4.5 and RCP8.5 pathways, and unprecedented climates are projected to occur earliest (late 2030s to early 2040s) in these regions[27]. This report adds that the Western Africa shoreline is critically vulnerable to climate change.

33. In Benin, climate models project an increase in the normal annual maximum temperature for the whole country ranging from slight (1–1.5°C) to substantial (2.5–3.0°C)[28]. The mean annual temperature is projected to increase by 1.0 to 3.0℃ by 2060, and by 1.5 to 5.1℃ by 2090. The range of projections by the 2090s under any emissions scenario is around 2.0-2.5℃. Precipitations are also expected to decrease. The latest Intergovernmental Panel on Climate Change (IPCC) models provide different estimations, but they concur to say that there will be an average decrease in annual precipitation by 2050 and 2070[29]. Increasing temperature will lead to increased evaporation which will further reduce water availability. It is predicted that these changes will have a negative impact on communities' well-being and health, agricultural and pastoral productivity, and on the provision of ecosystem services.

1.3 Description of the institutional and policy context for the management of natural resources and biodiversity in Benin

INSTITUTIONAL FRAMEWORK (KEY MINISTRIES AND THEIR ROLE) – FROM CENTRAL TO LOCAL LEVEL

34. At the governmental level, the protection and management of natural resources related to the mangrove landscapes is part of the mandate of two main ministries: the **Ministry of Living Environment and Sustainable Development (MCVDD)** and **Ministry of Agriculture, Breeding and Fisheries (MAEP[30]). The Ministry of Culture, Handicrafts and Tourism (MCAT)** also has an important role in the protection of natural resources. These three ministries have a major role to play in the project. Other important governmental institutions to be involved in the project are presented in Annex I2.

35. **MCVDD** is in charge of overseeing, monitoring and evaluating the implementation of the national policies for housing, urban development and sustainable cities, geomatic, land-use planning, sanitation, environment, climate, and the preservation of ecosystems as well as water, forests and hunting resources. Regarding environment and climate, MCVDD's role is to: i) implement processes and measures for livelihoods improvement and combatting pollution sources; ii) organise and promote jobs in the environment, climate change adaptation and mitigation as well as natural resources management sectors among others; and iii) monitor the implementation of Benin's commitments regarding sustainable development as well as regarding regional and international agreements. MCVDD has nine technical departments/services. Six of them are particularly relevant to the present project: the General Direction for Environment and Climate (DGEC); the General Directorate for Water, Forestry and Hunting (DGEFC) and its Forestry Inspections; the Direction of Eco-Citizenship; Beninese Agency for the Environment (ABE[31]); the National Fund for the Environment and Climate (FNEC[32]); and the Provincial Directorates of MCVDD.

[26] Ministère de l'Environnement, 2015. Contributions Prévues Déterminées au Niveau National.
[27] https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap22_FINAL.pdf
[28] Jalloh et al. (2013): West African Agriculture and Climate Change, A Comprehensive Analysis, IFPRI. http://www.ifpri.org/publication/
[29] TCN (2019), Troisième Communication Nationale du Bénin à la convention cadre des nations unies sur les changements climatiques. Ministère du Cadre de Vie et du Developpement Durable.
[30] Ministère de l'Agriculture de l'Élevage et de la Pêche
[31] Agence Béninoise pour l'Environnement
[32] Fond National pour l'Environment et le Climat

36. The Decentralized Departments of Living Environment and Sustainable Development (DDCVDDs) in each province monitor and control the application of the legislation pertaining to the environment, nature protection, urbanism, sanitation and habitat. The DDCVDDs also support the communal and provincial authorities in the implementation and monitoring of interventions aimed at improving the living environment of the communities.

37. DGEC is in charge of developing, implementing and monitoring the national strategies and policies regarding the environment, the management of climate change effects and the promotion of a green economy in collaboration with relevant institutions. One of its tasks for example is to coordinate national institutions to mainstream climate change into national policies and planning.

38. The DGEFC's role is to develop, implement and monitor national strategies and policies pertaining to the management of water, forest and hunting resources. Its mission is to ensure the development and sustainable management of forests and natural resources, notably through the National Program for Sustainable Natural Resources Management. It is the main institution responsible for mangrove forest management. Specific tasks of DGEFC include compiling, managing, and sharing quantitative and qualitative information on water, forest and hunting resources. DGEFC oversees and supports the Provincial Directorates and Forest Inspections in fulfilling their role at the decentralised level.

39. The Forest Inspections under DGEFC are responsible for the implementation of the National Forestry Policy at the provincial level. Their attributions that are most relevant to the GEF-funded project include: i) undertaking inventories of fauna and flora species in forest ecosystems and categorizing them based on their uses; ii) contributing to the design and implementation of participatory management plans for natural forests and plantations; iii) enforcing the law pertaining to forest and fauna, delivering exploitation permits, and informing and training stakeholders on the legislation; iv) developing and disseminating guidelines and technologies for natural resources' management; v) organizing reforestation campaigns; vi) supporting value addition for wood products and NTFPs, and contributing to the development of alternative energy sources; vii) ensuring M&E and the elaboration of activity reports on forests and natural resources; and viii) supporting the establishment of a consultation platform with MAEP.

40. National Centre for the Management of Fauna Reserves (CENAGREF) and Centre for Studies, Research and Training in Forestry[33] (CERF) are two offices under MCVDD. CENAGREF is a public organization responsible for the conservation and management of protected areas in Benin. It currently focuses on the management of Pendjari and W National Parks. The creation of and support to Community-based Biodiversity Conservation Area (ACCBs[34]) and Community-based Protected Areas (APCs[35]) are part of CENAGREF mandate. CERF is scientific organization that contributes to the implementation of the National Forest Policy and advancing science. It also centralizes data from a diversity of studies on forests including inventories.

41. The ABE is a parastatal organization with a social, cultural and scientific purpose. It has the mandate to implement environmental policies as defined in the national development framework and to ensure that environmental considerations are integrated into key sectoral policies and strategies. Its tasks include for example providing technical and financial support to Community-based Natural Resources Management (CBNRM) organisations in the development and implementation of their five-year management plan, the implementation of Environmental Impact Assessments and the integration of environmental education into the curriculum.

42. The Department for the Promotion of Eco-citizenship [36] (DPE) is responsible for the design and implementation of the eco-citizenship policy to raise awareness on environmental matters. This role includes training journalists, preparing education material and organizing awareness-raising campaigns, and monitoring the progress of information and education interventions.

43. The FNEC is also a parastatal organization, created in 2020. Its objective is to finance programmes and projects for the protection and sustainable management of the environment and natural resources, climate change adaptation and mitigation, and sustainable development. Its role includes to identify and secure external sources of

[33] Centre d'Etudes, de Recherches et de Formation Forestières
[34] Aires Communautaires de Conservation de la Biodiversité
[35] Aires Protégées Communautaires
[36] Direction de la Promotion de l'Ecocitoyenneté

funding, for example through the financial mechanisms established under the international agreements on environment and climate. It is also in charge of monitoring and evaluating the supported programmes and projects.

44. **MAEP** is responsible for the development and implementation of the agricultural policies and strategies, contributing to food security and developing the agricultural and fisheries' sectors. Its tasks include for example the modernization of value chains to improve the production, productivity, transformation and conservation of agricultural, fish and livestock products. The Directorate of Fish Production (DPH) focuses on the development and monitoring of national strategies and policies pertaining to fisheries. It coordinates the Fisheries and Aquaculture Development Programme. The Decentralized Departments of Agriculture, Livestock Husbandry and Fisheries[37] (DDAEP) are in charge of undertaking MAEP mission at the provincial and communal levels. They oversee the implementation of sectoral plans and provide technical assistance at the local level. The Decentralized Agency for Agricultural Development (ATDA) and its Communal Units support awareness raising and adoption of improved agricultural practices at the local level.

45. **MCAT and the National Agency for the Promotion of Heritage and Tourism** have the mission to make Benin one of the leading tourism destinations in West Africa. To do so, these institutions focus on highlighting the natural, historical and cultural heritage through the creation and development of innovative tourism projects.

46. At the provincial level, the prefect is the main representative of the government. He/She is supported by an Administrative Committee, which includes members of each decentralised government sectors. Each province also has a Provincial Council for Consultation and Coordination which includes the prefect, the mayor and deputy mayor, and other deputies of each commune or constituency (i.e. group of villages), and a representative of the National Union of Producers among others.

47. Besides government institutions, a diversity of NGOs (e.g. EcoBenin, BEES, CORDE, RID) are actively working on the protection of mangroves and the development of sustainable livelihoods in Benin. The presence of these NGOs significantly contributes to addressing the limitation in financial and human resources of government institutions. They work closely with local communities, government staff and other relevant partners. Local communities are more or less organized for the management of natural resources depending on the commune. Fishermen associations are found in each commune, but few Community-based Management Associations aimed to jointly manage natural resources (e.g. ACCBs, APCs) are found in the targeted area, and are restricted to some small areas of Ramsar site 1017.

POLICY FRAMEWORK (INCLUDING LAND TENURE) – FROM CENTRAL TO LOCAL LEVEL

Law[38]	**Objectif/ Area of interest**
Law 2019-40 of 07 November 2019 replacing the law 90-32 of 11 December 1990 on the Constitution of the Republic of Benin	The revised constitution stipulates that every person has the right to benefit from a healthy, satisfactory and sustainable environment and has to defend it. The government is in charge of protecting the environment. The elements that are cited are water, soil, land, forests, air and fauna. There is no particular mention of mangroves in this policy document, they are integrated under the "forests" category.
Law n°93-009 of 02 July 1993 on forest management in the Republic of Benin and its application decree (decree 96-271 of 2 July 1996);	This law determines the conditions for the management, protection and exploitation of forests, and the commercialisation and the industry of forest products. Forests are defined as land covered with trees excluding agricultural crops and: i) provide wood and other non-agricultural products; ii) provide habitat for wild fauna; iii) has an indirect effect on soil, climate or water cycles. Article 28 stipulates that clearing of wood or shrubs is prohibited within a buffer of 25 m on both sides of rivers and other water bodies. It does not include specific regulations or guidance regarding the management of mangrove ecosystems.
Draft Law on Forestry in the Republic of Benin	Contrarily to other policy documents, this new law focuses explicitly on fragile ecosystems in a chapter entitled: "Conservation and Restauration of Fragile Ecosystems". It includes several articles on mangroves ecosystems and promote the creation of a specific protection status that limit users' rights to conservation, value-

[37] Directions Départementales de l'Agriculture, de l'Elevage et de la Pêche
[38] General Profile | FAOLEX Database | Food and Agriculture Organization of the United Nations

Law[38]	Objectif/ Area of interest
	addition through ecotourism and sustainable exploitation of NTFPs. Overall, it supports the development of a blue economy. The draft law also states that the Forest authorities as responsible for the delineation, protection, securing and planning of mangrove ecosystems. According to this document, fishing in spawning beds is permanently prohibited particularly in mangroves as well as the destruction of young fry.
Framework Law n°98-030 of 12 February 1999 on the environment in the Republic of Benin;	This law aims to protect the environment, restore degraded sites, and ensure a balance between environment and development. Article 49 stands for the protection and regeneration of fauna and flora for biodiversity preservation and to maintain the ecological balance of natural systems. In addition, according to Article 50, any activity that could affect fauna or their natural habitat is prohibited or necessitate an authorization from the government. Under Article 53, if the conservation of a natural area presents a special interest, it should be protected for any human activities that could alter, degraded or change it. Any portion of the marine, terrestrial and freshwater systems can be classified as Protected Areas. Land protection against desertification, erosion or salinization of agricultural land is of public utility. Mangroves are not specifically mentioned but they are protected under Article 50 and 53.
Law n°2018-18 of 06 August 2018 on climate change in The Republic of Benin and its application texts	This policy focuses on combatting climate change and its effects, and to increase communities' resilience. It provides guidance for sustainable socio-economic development, security and energy efficiency in alignment with national and international strategies and agreements. Article 1 focuses on the adoption of integrated policies and strategies focused on promoting, in partnership with various research Centres, of studies for the development of climatic scenarios for the different agroecological zones, rehabilitating degraded ecosystems, regenerating plant cover, improving the productivity of degraded land and gradually changing production and consumption patterns to reduce wastes and improve living and working environment at all levels, in particular at grassroot or local communities' levels. Article 10 states that the State takes all appropriate measures to safeguard ecological processes and biological systems, preserve biological and genetic diversity, and ensure the sustainable use of natural resources. It protects and preserves rare or fragile ecosystems, rare and threatened or endangered species of fauna or flora and their habitats. It takes all appropriate measures aimed at promoting and strengthening collaboration and cooperation at sub-regional, regional or international levels in order to ensure the preservation and improvement of the management of natural resources of biological and geological systems. It supports local communities in taking all measures to increase the resilience of local populations. Article 33 Paragraph 1 stipulates that the State and local communities ensure the implementation of policies, strategies, programs and projects for the protection and integrated management of wetlands.
Law n°97-029 of 15 January 1999 on communal organisation in the Republic of Benin	This law lead the path for decentralization in Benin and provides communes with legal personality and financial autonomy. It grants the communal governments with several responsibilities including the protection of natural resources such as forests, soil, fauna, surface and ground water, and the promotion of their sustainable management.
Law n°2013-01 of 14 August 2013 on Land Tenure Code in the Republic of Bénin completing laws n°2017-15 of 10 August 2017 and n°2020-08 of 23 April 2020	This law defines the rules and principles of land tenure in Benin and applies to public and private land of State and local authorities. Natural public land includes the natural sites including: i) coastlines; ii) navigable water ways and 25m of banks on both sides; iii) non-navigable water ways and their sources; iv) lakes, ponds and lagunas including a buffer of 25m around them; v) groundwater sources; vi) flood-prone and wetland areas; and vii) airspace. Mangroves are therefore included in the natural public land category and should therefore be delimitated by decree to define the regulations for their management and conservation (Article 266). Hence, they are strongly protected by Article 273 which states that the integrity of public and private state land must be respected by any individual land-tenure registration. Finally, natural public state goods are inalienable, unseizable and imprescriptible.
Law 2002-016 of 18 October 2004 on fauna in the Republic of Benin	The objective of this law is to determine the conditions for the protection, the management and the development of fauna and its habitat. It promotes the implementation of interventions for the conservation, value addition and sustainable use of wild fauna, its habitat and its genetic diversity.

Law[38]	Objectif/ Area of interest
Ministerial Order 0122/ MEHU/MDGLAAT /DC/SG /DGFRN/SA on the sustainable management of sacred forests in the Republic of Benin	This inter-ministerial decree provided an institutional framework for the management of sacred forests. It prohibits fishing and wood collection in specific areas. It does not mention mangrove ecosystems.
Law 2016-06 on land-use planning in the Republic of Benin	This law defines the main practices for land-use planning in Benin. It also stipulates in Article 7 Paragraph 2 that the states should support local authorities in promoting special territories such as Indigenous Heritage and Communities' Areas.
Law 2018-10 of 02 July 2018 on the protection, land-use planning and enhancement of the coastal zone in the Republic of Benin	This law promotes the implementation of research projects and initiatives to collect data on the characteristics and resources of the coastal zone; the restauration and protection of biological and ecological balance; the combat against erosion and pollution; the preservation of sites, landscapes and heritage; the preservation and development of economic activities such as fishing, flood recession agriculture, crop cultivation and salt exploitation (Article 2). Mangroves are explicitly included in the coastal zone under this law (Article 3).
Law 2010-44 of 24 November 2010 on water management in the Republic of Bénin	This law determines the conditions for the integrated management of water resources for a balanced use, an equitable distribution and a sustainable exploitation. According to this law, any wetland or areas where water is regularly present falls under the public water domain. This is aligned with the definition of the Natural Public State land.
Decree 2014-410 of 21 July 2014 on the creation of ACCB Togbin-Adounko Decree 2014-411 of 21 July 2014 on the creation of ACCB Vodounto	Such decree – which are specific to one ACCB – enable the community to delineate a conservation area that they will thereafter manage. This decree establishes a community-based biodiversity conservation area focused on mangroves. The aim of this ACCB is to: i) ensure ecosystem conservation and their sustainable and participatory management in alignment with Ramsar conservation and national policies; and ii) promote ecotourism (Article 4). The total area covered by this ACCB is 94,4 ha (including 43 in Togbin and 51,4 in Vodounto).
Order n°94/052/C-GP/SG/SDPL-SEHAVE of 14 September 2016 on the creation of ACCB La Bouche-du-Roy in Grand-Popo commune and Order n°93/77/CC/SG-SADE of 15 September 2016 on the creation of ACCB La Bouche-du-Roy in Comé commune	These two orders have the same structure and focus on conserving natural resources and biodiversity (particularly fish, mangroves and turtles) to develop sustainable fisheries, tourism and education. In Grand-Popo, the areas covered by the ACCB are Avlo and Gbéhoué with a surface of 8,255 ha. In Comè, the ACCB covers 451,5 ha in Agatogbo.

48. As a note, as a results of the advocacy interventions of EcoBenin with the government, the destruction of mangroves was prohibited in 2016[39].

DECISION-MAKING AND PLANNING PROCESSES – FROM CENTRAL TO LOCAL LEVEL

49. Development planning in Benin revolves primarily around the Communal Development Plans (PDCs[40]). Each commune has a similar development planning process. A service provider is first selected to develop the PDC. The consultation process starts with the organisation of a public meeting with all community groups. Each community member can express the difficulties they face and make suggestions to develop its sector of interest as well as the commune. A draft report is developed thereafter based on this consultation and some document review. The draft PDC is then discussed and validated by the communal council during an assembly. After validation, the PDC becomes the leading document for the development of the commune that guides the communal council headed by the mayor. Community engagement in the process is therefore limited to the public audience. Communities have no visibility on the content of the PDC and how much of their concerns was integrated in the document until it is validated and can no longer be amended.

50. Mangrove conservation is recognized across the PDCs of the 9 communes. However, corresponding interventions on the ground are more or less visible. In Grand-Popo and Ouidah, local authorities see the value of mangrove ecosystems because of the income generated through ecotourism, they are therefore more involved in its

[39] https://www.ecobenin.org/la-destruction-des-mangroves-interdite-au-benin/
[40] Plans de Développement Communaux

protection. This engagement is not clearly visible in other communes, particularly in Sô-Ava, Sèmè-Kpodji and Kpomassé.

51. Other than the PDCs, some regional or transboundary plans can be developed in an ad-hoc manner. This is the case of the Mono Biosphere Reserve Management Plan. At the local level, local management plans can also be developed by local communities as shown with the ACCB management plans.

COVID CONSIDERATIONS

52. 52. Benin reported 26,567 as cumulated coronavirus cases on 22 February 2022, including 163 deaths. To contain the propagation of the SARS-CoV-2, the Government of Benin put in place containment measures that were gradually lifted since the onset of the pandemic. National containment measures and those of other countries impact the agriculture sectors in multiple ways, including through: limited access to extension services, limited access to labourers (seasonal workers oftentimes from Burkina Faso and Togo), slowed trade in cash crop industries such as cotton, pineapple, cashew nuts due to severe lockdowns in client countries, causing significant falls in prices and income (e.g. 37% decrease of the pineapple exportations in February-March alone), negative repercussions on animal production and health, among others. These impacts have sadly translated into increased poverty and food and nutrition insecurity in the country. As a response, Benin has identified medium-long term objectives to build back better the agriculture sectors, including:

- Improve production and productivity along food value chains;
- Facilitate commercialization of agricultural and agro-food products; and
- Improve the living conditions of vulnerable agricultural households.

53. These longer-term objectives can be met by immediate priority actions:

- Facilitation of access to production factors and markets;
- Promotion of digital solutions in the agriculture sectors; and
- Improvement of social security networks to combat COVID-19 and M&E of interventions.

54. The LDCF-GEFTF project is well equipped to support some of these priority actions identified by the Government of Benin, while it complements them by addressing environmental degradation, which is believed to help mitigate future pandemics. Indeed, the Covid-19 pandemic dramatically exposed the impact of ecosystem degradation on and the vulnerabilities of our societies. The planning and management component of the project offers an opportunity to carefully consider the human-wildlife interactions and how to limit these along efforts to strengthen ecosystem's health and limit fragmentation. The project may help identify high-risk areas and consider appropriate mitigation measures.

55. Short-term responses can be delivered thanks to some of the adopted approaches in the project, including the Farmer Field Schools. These have continued to operate during the pandemic (and therefore delivered important extension services), and have successfully integrated modules on hygiene and social distancing measures to contain propagation of viruses. The project will also address market access issues, and can integrate lessons from the recent past into its activities. During the PPG phase, opportunities to build back better have been explored and integrated into the project design.

56. Despite the limited number of case numbers in Benin, the PPG was negatively impacted by containment measures nationally and internationally. Therefore, Covid-19 related risks are explored and mitigation measures identified further below.

2) The baseline scenario and any associated baseline projects.

2.1 Threats, root causes, drivers and barriers

MAIN ENVIRONMENTAL THREATS IN THE TARGETED MANGROVE AREAS

The loss of mangrove ecosystems

57. The data available on mangrove trend in the past decades differ from one source to another. However, all the studies concur to say that there has been a drastic decrease in the surface of mangroves in coastal Benin since 1980.

Based on the mapping exercise undertaken during the PPG phase, the remaining surface of mangroves today is 1303.3 ha. Intensive conservation and restoration efforts from NGOs and government institutions have contributed to maintaining these mangroves.

ROOT CAUSES AND DRIVERS OF FOREST DEGRADATION AND BIODIVERSITY LOSS IN THE MANGROVE LANDSCAPES

Root causes of ecosystem degradation

Climate change hazards and their impact on mangrove ecosystems and adjacent production landscapes

58. Sea level is expected to rise by 20 cm by 2030, 40 cm by 2070[41] and 81 cm by 2100[42]. This will likely lead to floods and sea water intrusions in the targeted coastal area. Some urban areas of Cotonou city and Grand-Popo commune are expected to disappear.

59. The agricultural production capacity in the intensively cultivated south will be affected by increased frequency of droughts, late and intensive rains, floods, extreme winds[43] and soil salinity[44]. This is expected to have a significant impact on food security in Benin. Since agriculture is of greatest importance for the Beninese economy, the agricultural sector will need to adopt adaptive measures in order to respond to the consequences of climate change that threaten food security[45]. ND-Gain assessment of Benin's exposure, sensibility and ability to adapt to the negative impacts of climate change ranked it 163 out of 181 countries. Benin ranks 147th in terms of ability to leverage investments and convert them into adaptation actions[46].

60. Climate change is expected to have a major impact on mangrove ecosystems. Firstly, an increase in temperature is predicted to reduce the range suitable for mangroves in Benin. Secondly, a decrease in precipitations and increase in temperature is expected to lead to high concentration of salt in mangroves' niches and thereby reduce the distribution range of mangroves and their species diversity. Indeed, Sinsin (2021) predicted that the expected climate changes would cause significant changes in physico-chemical conditions (salinity, dissolved oxygen, and conductivity) in mangrove ecosystems at the favor of most salt tolerant species. Less salt tolerant species may become extirpated from mangroves if they fail to adapt which will reduce animal and plant diversity and most probably drift to monospecific mangroves of salt tolerant species such as *Acacia germinans*[47]. Salinization will also affect flora species established on the shoreline and embankments in other coastal ecosystems. As outlined in the AR5 report of the IPCC, moderate warmings are also likely to destabilize plankton dynamics and thereby affect food resources for higher trophic levels of many planktivorous fish, which will in turn lead to the loss of freshwater fishes, among others.

61. Based the current rate of wetlands destruction, the coastal wetland in Benin is projected to decrease by 40% by 2080[48]. This combined with sea level rise is likely to exacerbate coastal catastrophes such as coastal erosion, floods, and storm waves[49]. In addition to the degradation of wetlands and farmlands, salinization will affect groundwater tables thereby impacting communities' health. Internal migration and urbanization of the country's coast is also likely to increase the number of people vulnerable to coastal climate change impacts[50].

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[41] CEDA, 2017. Rapport National sur l'Environnement Marin et Côtier du Bénin. Ministère de l'Environnement et de la Protection de la Nature. 68p

[42] DCN (2011), Deuxième Communication Nationale du Bénin à la convention cadre des nations unies sur les changements climatiques. Ministère du Cadre de Vie et du Developpement Durable.

[43] Centre for World Food Studies (SOW-VU) (no date): The impact of climate change on crop production and health in West Africa, An underutilized Middle Belt in West Africa, http://www.sow.vu.nl/Activities/Benin.html

[44] CEDA, 2017. Rapport National sur l'Environnement Marin et Côtier du Bénin. Ministère de l'Environnement et de la Protection de la Nature. 68p

[45] https://ees.kuleuven.be/klimos/toolkit/documents/684_CC_benin.pdf

[46] https://gain.nd.edu/our-work/country-index/rankings/

[47] Sinsin C B L et al. (2021) Potential climate change induced modifications in mangrove ecosystems: a case study in Benin, West Africa. Environment, Development and Sustainability https://doi.org/10.1007/s10668-021-01639-y

[48] http://www.undp.org/content/dam/benin/docs/environnement/PANA_BENIN.pdf

[49] UNDP; Beninese Ministry of Environment and Nature Protection (2008)

[50] Niang, I., O.C. Ruppel, M.A. Abdrabo, A. Essel, C. Lennard, J. Padgham, and P. Urquhart, 2014: Africa. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, V.R., C.B. Field, D.J. Dokken, M.D. Mastrandrea, K.J. Mach, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1199-1265.

Direct anthropogenic causes of mangrove degradation

62. Anthropic pressures on mangrove ecosystems are driven by population growth and high poverty rates. The population in Benin grows by 2.7% every year based on the latest estimated[51]. The population estimated at 12,1 million inhabitants in 2020 is expected to reach 20 million in 2040 and 47 million in 2100. The demand for food and housing will continue to grow and the pressure on natural ecosystems will therefore increase particularly in the southern coastal areas of the country.

63. The main anthropogenic causes of mangrove degradation in the targeted area are: i) mangrove wood harvesting; ii) disturbance of water ways leading to riverbanks erosion; iii) expansion of agricultural and urban land; and iv) unsustainable fishing practices. Natural factors (e.g. high salinity, low availability of nutrients, poor microbial activities in the soil substrates) also affect mangroves, although the impacts of these factors are considered less significant than the anthropogenic ones[52]. In the targeted area, mangrove ecosystems are mostly used for fuelwood, service wood (structural and construction timbers, and joinery wood), forage, salt production, medicinal uses and fish resources. According to a study undertaken in 2019 that focuses on Ouidah, Sèmè-Kpodji and Grand-Popo, the uses of mangroves vary significantly between communes. Mangroves in Ouidah were mostly used as fuelwood (70%), service wood (46.6%) and for salt production (40%). In the district of Grand-Popo, the medicinal use (53%), fishery (55%) and fodder (13.3%) were mentioned as the most important use categories. In Sèmè-Kpodji, mangroves were mainly used as sources of fuelwood (66%), medicinal products (50%), fodder (3%) and for salt production (3%)[53].

Harvesting of mangrove wood:

64. Firewood is the main source of energy at both Ramsar sites, followed by charcoal. Based on a study undertaken in 2020, on average, 8.21 m^3 of firewood and 23.19 kg of charcoal are consumed per inhabitant per year in Ramsar sites 1017 and 1018[54]. Annual firewood and charcoal needs in these sites are 12.83 m^3 and 36.25 kg per capita, respectively. The current needs of the surveyed populations with respect to fuelwood in the mangrove areas of Ramsar sites 1017 and 1018 are high and not fully covered. A gap of around 36% remains to be filled to meet wood energy needs. Despite the prohibition of mangrove exploitation by the Beninese Government, mangroves are still exploited to meet fuelwood needs because: i) the wood of mangrove species burns for longer compared to other species and is most suitable for the production of salt; ii) there are limited energy alternatives; and iii) mangrove wood is relatively cheap. The use of mangroves as fuelwood to smoke fishes and shrimps might also improve the appearance of the smoked products which is a factor of competitiveness in the market for these products. The wood needs are projected to increase steadily by 2027 as a result of population growth[55]. This is expected to significantly increase the pressure on mangrove ecosystems.

65. Salt production requires an important amount of firewood generally collected from mangroves. 30% of mangroves were lost in the past 25 years because of fuelwood extraction for salt production, to smoke fish, and as building material for housing and fish tanks. Approximately 70% of the wood used to process salt comes from *Rhizophora racemosa*. It is assumed that extraction of 100 Kg of salt requires 1 m^3 of mangrove wood. Fishing practices also require similar and even higher quantity of mangrove wood. Likewise, crabs and shrimp traps are generally fabricated with mangrove woods. *Rhizophora racemosa* is also the most harvested for construction as it is a strong raw material for house building that does not decay easily[56].

66. Mangrove cutting has favoured, low water depth, sediment loading, shallow and muddy bottom. Consequently, these changing habitat conditions, coupled with the high temperatures, high turbidities and oxygen

[51] https://data.worldbank.org/indicator/SP.POP.GROW?locations=BJ consulted on 18 November 2021
[52] Zanvo M. G. S. et al. (2021) Mapping spatio-temporal changes in mangroves cover and projection in 2050 of their future state in Benin. Bois et Forêts des Tropiques, 350 : 29-42. Doi : https://doi.org/10.19182/ bft2021.350.a36828
[53] Teka O et al. (2019) Mangroves in Benin, West Africa: threats, uses and conservation opportunities. Environ Dev Sustain (2019) 21:1153–1169.
[54] Adanguidi J et al. (2020) Fuelwood consumption and supply strategies in mangrove forests – Insights from Ramsar sites in Benin. Forest Policy and Economics 116.
[55] Adanguidi J et al. (2020) Fuelwood consumption and supply strategies in mangrove forests – Insights from Ramsar sites in Benin. Forest Policy and Economics 116.
[56] Gnansounou S C et al. (2021) Local uses of mangroves and perceived impacts of their degradation in Grand-Popo municipality, a hotspot of mangroves in Benin, West Africa. Trees, Forests and People 4

depletion have led to a progressive colonization of some sites by a grass, *Paspalum vaginatum*, precursor of terrestrial formation, thus reducing the coastal lagoon area with the loss of habitats and inhabiting biodiversity[57].

Agriculture:

67. In order to meet a growing demand for food, most of agricultural activities in the targeted area use chemical fertilizers (e.g. NPK, Urea) and pesticides[58]. The use of pesticides and fertilizers is an important source of pollution of water bodies[59]. An ecotoxicological study undertaken in 2008 in the lower Valley of Ouémé showed high concentrations of pesticides residuals in freshwater species[60]. The impact of these pesticides on biodiversity and human health have not yet been investigated in the area. Some villages in Bopa, Aguégués and Abomey-Calavi have adopted more sustainable practices. This is the case of Adounko village – who received support from the West Africa Coastal Areas Management Programme – where the production is based on the use of animal wastes and compost as fertilisers, and Neem extract as insecticides.

68. Because of a combination of population growth, low productivity because of inadequate practices and loss of agricultural products caused by inadequate processing capacity, the demand for agricultural land is constantly increasing. The expansion of agricultural land is often done through the use of fire to clear out land. This was identified as a major factor in the reduction of mangrove areas[61]. Unsustainable agricultural practices such as slash-and-burn technique are also detrimental to mangroves. Furthermore, fallow time is being increasingly reduced because of greater pressure on agricultural land from a growing human population. This leads to soil impoverishment and pushes farmers to find new agricultural land.

Urban expansion:

69. The expansion of urban Centres is a major cause of deforestation. This trend is clearly visible in all communes except Grand-Popo and Ouidah. Overall, the surface of urban areas has increased by 4.3% between 2010 and 2020 (38,357 ha to 40,094 ha) with the sharpest increase observed in Comè, Abomey-Calavi, Sèmè-Kpodji and Sô-Ava.

Overfishing and inadequate practices:

70. The rapid growth of human population is leading to an increased demand for fish resources. Inadequate fishing practices and poor enforcement of fishing regulations are causing a drastic decrease in fisheries productivity[62,63]. Detrimental practices include *inter alia* the use of Acadja. This technique is prohibited as it is generally made in wood material harvested in the mangrove ecosystems and it can prevent adequate water flow in water bodies. Other prohibited fishing practices include the use of non-selective nets with small meshes, Mèdokpokonou (traditional small mesh nets) and fish traps that deteriorate the habitat and put a lot of pressure on fishing populations. These practices are less common nowadays than they used to be but they are still having a significant negative impact on mangrove ecosystems. Inadequate practices have led to a significant reduction in the number of fish caught and in fish sizes, with catches being dominated by juveniles. Some species are not present anymore such as *Bagrus docmak* or are becoming rare (*Lates niloticus, Heterobranchus longifilis*), and fish size is significantly reducing for some species such as *Gymnarchus niloticus*. More sustainable fishing techniques such as cast-net fishing are rarely used in the targeted communes.

Plantations:

71. As previously mentioned, an increasing number of plantations have been established in recent years. Fruit tree plantation have significantly expanded between 2010 and 2020 in Bopa, Comè, Grand Popo, Abomey-Calavi and Sô-Ava. High-value plantations are often established in natural systems including in mangroves.

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[57] Adite at al. (2013) Fish Assemblages in the Degraded Mangrove Ecosystems of the Coastal Zone, Benin, West Africa: Implications for Ecosystem Restoration and Resources Conservation. Journal of Environmental Protection, 2013, 4, 1461-1475

[58] Lawani R. A. N., Kelome N. C., Agassounon Djikpo Tchibozo M., Hounkpe J. B., Adjagodo A. (2017). Effets des pratiques agricoles sur la pollution des eaux de surface en république du Benin. Larhyss Journal, n°30, Juin 2017, pp. 173-190.

[59] Gnansounou S C et al. (2021) Local uses of mangroves and perceived impacts of their degradation in Grand-Popo municipality, a hotspot of mangroves in Benin, West Africa. Trees, Forests and People 4

[60] Yehouenou A. Pazou E., 2008, Concentration des résidus de pesticides dans les écosystèmes aquatiques du bassin versant du fleuve Ouémé, du lac Nokoué et des régions cotonnières du Zou, Communication Séminaire, Gestion Intégrée des Ressources en Eau, Ouidah, 30 p.

[61] Lawani R. A. N., Kelome N. C., Agassounon Djikpo Tchibozo M., Hounkpe J. B., Adjagodo A. (2017). Effets des pratiques agricoles sur la pollution des eaux de surface en république du Benin. Larhyss Journal, n°30, Juin 2017, pp. 173-190.

[62] PDC Grand Popo, 2019. Plan de développement communal de Grand Popo (2019-2023) ; version definitive. 260p.

[63] FAO, 2020. Stratégie nationale et plan d'actions de gestion des écosystèmes de mangroves du Bénin. Cotonou. https://doi.org/10.4060/ca2352fr.

Hydro-electrical infrastructure

72. The hydro-electrical dam of Nangbéto has greatly modified the Mono River flooding regime, water quality and the fish composition of the Benin coastal lagoon system. A study undertaken in 2013 showed that the fish composition of the mangrove ecosystem of Benin was now greatly dominated by marine estuary species whereas the number of rivers' fish species was reduced. Among the 51 fish species inventoried, 11 species (20%) originated from the Mono River and the remaining (80%) originated from the marine/estuarine environment. This was explained by the change in coastal lagoon water quality caused by the construction of a hydro-electrical dam on the Mono River[64]. The construction of the dam has led to a reduction in water flow and sand is therefore retained upstream. This further reduces water flow and provokes coastal erosion during intense rains. The change in water flow threatens the wetland and mangrove habitats.

Invasive species:

73. Inland water bodies are threatened by several invasive species. The most common ones in the targeted areas are the water hyacinth *Eichhornia crassipes*, water lettuce *Pistia stratiotes*, duckweed *Lemna paucicostata*, and *Nymphea s.p.p*. The communes most affected by invasive species are Bopa, Grand-Popo, Sèmè-Kpodji, Aguégués and Sô-Ava. Invasive species are leading to a reduction of water quality including eutrophication which threatens the species community that live in these water bodies.

Livestock husbandry:

74. Traditional enclosures are often made with mangrove wood, particularly in Ouidah and Bopa. Seasonally migrating herders increasingly use mangrove areas during the dry season that leads to mangrove degradation through trampling and grazing, and to conflicts between farmers and herders.

Inadequate harvesting techniques and management for NTFPs:

75. NTFP harvesting is an additional cause of mangrove degradation. The harvesting of crabs in mangrove areas is often done using fire to push them out of hiding which is a cause of mangrove habitat deterioration. Oysters' harvesters sometimes cut the entire mangrove roots to collect the oysters. Similarly, because a reduction in the habitat of *Cyperus articulatus* as a result of changes in waterflow caused by the dam, some areas (e.g. in Avlo) are kept open to maintain and support the growth of this species instead of enabling mangrove natural regeneration. The search of rarefying medicinal plants is also a source of degradation of mangrove areas, as harvesters cut through the mangrove to create access paths.

Waste pollution:

76. Because of their proximity to major coastal cities, mangroves are exposed to urban pollution, particularly from wastes being disposed or carried by rainfalls in lakes and lagoons (e.g. in Porto Novo lagoon and Nokoué Lake). This leads to water pollution and affects water flows because of waste accumulation in natural ecosystems. Increasing population size has led to an increase in waste disposal in water bodies. In addition, more than 80% of national industries are located on Benin's shoreline[65] which is another source of pollution of mangrove ecosystems.

Sand exploitation:

77. Sand exploitation in lagoons can be undertaken by hand or mechanically. It affects water flows and accentuate erosion and sedimentation in water ways.

BARRIERS TO SUSTAINABLE MANGROVE AND BIODIVERSITY MANAGEMENT

Barriers to be addressed under Component 1 "Increased adaptive capacity of the natural systems"

1/ Limited data and knowledge available on mangroves and their value, and as a result, poor awareness of mangroves' role in maintaining biodiversity and in mitigating climate change effects

Knowledge on mangrove ecosystem functioning and biodiversity

78. There are major knowledge gaps on the health, biodiversity, ecology and resilience of mangrove ecosystems in Benin. The little information that does exist is scattered, difficult to access and not always reliable. As an example,

[64] Adite at al. (2013) Fish Assemblages in the Degraded Mangrove Ecosystems of the Coastal Zone, Benin, West Africa: Implications for Ecosystem Restoration and Resources Conservation. Journal of Environmental Protection, 2013, 4, 1461-1475

[65] https://wedocs.unep.org/bitstream/handle/20.500.11822/10418/Rapport_PNUE_Draft_FINAL.pdf?sequence=1&isAllowed=y

the information collected during the PPG phase through the literature review and the interviews on the distribution and surfaces of mangroves in Benin was often not concordant. Reliable data is available on the location and biodiversity of mangrove areas in Ramsar site 1017 as a result of FAO and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) projects in the area, but none on the mangroves of Ramsar site 1018. There is also a lack of regional and global knowledge about the causes, patterns and consequences of climate change impacts on mangrove ecosystems and on climate-resilient mangrove ecosystems management. Some studies have recently been undertaken[66] but there are important gaps to be fulfilled such as mangrove capacity to adapt to sea level rise.

Limited data available and awareness on mangroves' economic value

79. The economic, social, cultural and environmental value of mangrove ecosystems in Benin is poorly known, captured, documented, and disseminated. Mangroves have an important social role for surrounding local communities and are linked to traditional customs and religious beliefs, but this value has not been measured. Similarly, their role is buffering climate change effects is well documented globally but it is poorly recognized locally and the economic value of this service in Benin's coastal zone is unknown. The absence of this information prevents efficient advocacy for mangrove preservation with communities, private sector and government institutions.

Limited awareness of local communities on the impact of their activities on mangrove ecosystems

80. Based on the field visits and on a study undertaken in Grand Popo, local communities often believe that mangrove degradation is mainly due to natural disturbances rather than human activities. Yet, according to the National Forestry Department of Benin, the degradation of mangrove ecosystems in the country predominantly results from human activities. As an example, an analysis of changes in the land cover of the Mono Transboundary Biosphere Reserve reported that 93% of the mangrove coverage of the reserve has been lost between 1986 to 2015 as a result of anthropogenic activities rather than natural disasters[67].

2/ Inadequate natural resources' management practices, limited capacity for integrated and participatory management planning, and low community organization

Inadequate practices

81. As previously discussed, mangrove resources are serving multiple purposes in the targeted areas and have an important role in communities' livelihoods. However, fishing and harvesting practices in mangrove areas can be unsustainable and are insufficiently regulated, as a result the availability of these resources for local communities is reducing and is also leading to biodiversity loss. Alternative fishing methods and improved management practices (e.g. the creation of marine no-take zones) do exist but they require participatory decision-making processes within the community and efficient law enforcement in order to benefit the entire community. Indeed, the adoption of sustainable practices might at first lead to a reduction of the catch until fish stocks have recovered. It can therefore not be adopted by a fisherman in isolation, it must be a decision from the fishing community and accompanied by the development of required support systems during the transition period. Similarly, agricultural practices focus on immediate productivity, thereby motivating the use of chemical fertilizers and pesticides despite their negative effect on soil and water resources, and on natural ecosystems. There is no concerted plan to maintain productivity in the long term. The same applies to the collection of timber and non-timber forest products. Another limiting factor is access to financial resources to purchase new equipment.

Limited capacity and availability of successful examples for integrated/participatory management planning

82. Mangrove ecosystems are facing multiple threats and are critically declining. Despite the implementation of various initiatives, mangrove restoration and conservation management planning processes insufficiently engage local stakeholders. Without appropriate awareness of the vital importance of mangrove ecosystems in a context of climate change, resilience is likely not to be achieved and further conservation and restoration efforts are likely not to be supported by local stakeholders. Past initiatives have often lacked a comprehensive consultation process to ensure that communities are on board and that their interests are adequately integrated in the design of the activities. As a result, few restoration initiatives have produced results that are still visible today. In addition, most initiatives have focused thus far on very specific reforestation or mangrove protection investments, and have not considered the mangroves' landscapes as a whole. Mangrove ecosystems need to be urgently managed at a landscape level in an informed and comprehensive manner to increase the resilience of communities and natural habitats.

[66] Sinsin C B L et al. (2021) Potential climate change induced modifications in mangrove ecosystems: a case study in Benin, West Africa. Environment, Development and Sustainability https://doi.org/10.1007/s10668-021-01639-y

[67] Adjonou et al. (2020) Land use/land cover patterns and challenges to sustainable management of the Mono transboundary biosphere reserve between Togo and Benin, West Africa. International Journal of Biological and Chemical Sciences. Vol. 14 No. 5.

Limited community structures

83. Some community structures (e.g. ACCBs, APCs) have been created in Ramsar site 1017. However, none of these structures exist in Ramsar site 1018. In addition, most existing structures required capacity strengthening to operate efficiently. The absence of strong community-based structures prevents the design of integrated management plan that consider all community groups and their needs. A harmonized approach to natural resources management planning that enable both community development and environmental preservation is therefore very difficult to achieve. This also prevents the efficient implementation of local laws to prohibit unsustainable practices to benefit the entire community. Finally, without strong Community-based Organisations (CBOs), it is difficult for communities to state their needs and influence projects and policies development processes to ensure that they adequately take their needs and aspirations into consideration.

Barriers to be addressed under Component 2 "Increased adaptive capacity of the human systems thanks to livelihood diversification and development"

3/ Limited access to sustainable livelihoods by local communities, and low capacity for entrepreneurship

84. To address the current issue of biodiversity loss and mangrove ecosystem depletion, climate-resilient, biodiversity-friendly and economically-viable livelihood activities are required. However, several factors are preventing community from adopting improved livelihoods. Firstly, there is limited knowledge on the livelihood opportunities that are adapted to local conditions and very little success stories available on people who have adopted new practices or sources of income. Secondly, communities have limited capacity to design funding application and to meet the criteria to access funds (e.g. difficult to provide required guaranties). In addition, interest rates can be too high while the loans are too small (especially for women) based on the interviews with local communities in the targeted area.

85. Existing economic activities that could potentially provide a lucrative and sustainable source of income are poorly developed. NTFP value chains for example are not well structured and poorly controlled. There is insufficient opportunities for community members to access training courses on more sustainable and cost-effective harvesting practices, processing techniques and marketing. As a result, the financial value of the products on the market is very low thereby forcing communities to harvest more in an attempt to meet their financial needs. Communities have limited opportunities to adopt emerging livelihoods to diversify their sources of income – such as aquaculture, snail production, mushroom cultivation and bee-keeping – because of limited support and training availability. Similarly, existing groups of NTFP producers such as women undertaking handcrafting with water hyacinth for tourists are often poorly organised, and have rudimentary material and working conditions.

86. There is insufficient technical and financial capacity to adopt more resilient and more efficient agricultural practices in order to increase productivity on the limited amount of agricultural land that is available. For example, agricultural activities are generally rain fed. Irrigation infrastructure is scarce and poorly developed. As a result, they are highly vulnerable to changes in rainfall patterns. Climate change impact on rainfall is particularly detrimental to agricultural activities in Aguégués, Bopa, Sô-Ava, Sèmè-Kpodji and Abomey-Calavi. Furthermore, insufficient knowledge of processing and marketing methods for agricultural products, limited organisation of producers into associations and cooperatives, and the difficulties to access financial support from existing financial structures prevent farmers from adopting improved practices to generate greater and more resilient income. For example, poor linkages between producers and buyers and inadequate processing equipment are leading to a significant loss of agricultural production (e.g. tomatoes). These weaknesses of the agricultural value chains further increase the vulnerability of communities' livelihoods.

87. Similarly, livestock production is poorly organized. This activity suffers from inadequate access to financial opportunities, the low integration of agriculture with livestock husbandry, the absence of infrastructure for on-farm livestock husbandry and for shelter in case of heavy rains, insufficient producers' organisation into associations, limited technical capacity to prevent pest outbreaks and to manage pastoral resources sustainably, and insufficient access to veterinary services among others. Availability of livestock feed is also limiting the economic and environmental sustainability of livestock husbandry activities. Some attempts have recently been made to produce livestock feed based on Moringa and zooplanktons, but the necessary inputs and technologies remain costly.

88. Insufficient financial opportunities and the weakness of the existing value chains can also be explained by the lack of incentives for the private sector to invest in economic activities that support the sustainable management of

mangrove ecosystems. Due to the public goods nature of climate resilient and biodiversity conservation investments and the low level of revenue, the private sector – including private companies, microfinance institutes, banks – is not engaged in supporting these investments and smallholder farmers do not have access to funding to improve their activities. Corporate Social Responsibility (CSR), Payment for Ecosystem Services (PES) or the carbon offsetting markets are not well developed in Benin which limits the opportunities to access private funding to support mangrove management.

Barriers to be addressed under Component 3 "Enabling environment for sustainable management of mangrove ecosystems in a context of climate change"

4/ Insufficient consideration of mangrove ecosystems in the policy framework, weaknesses in the mangroves management system and insufficient evidence base and knowledge sharing to guide the sustainable management of mangrove landscapes

Institutional framework and coordination for mangroves management:

89. There is some overlap in the role of the main departments involved in mangroves' management. Within MCVDD, DGEFC and DGEC have some attributions that are similar which can create confusion and reduce the operational efficiency of these institutions. For example, DGEC is in charge of developing, implementing and monitoring the application of policies pertaining to the environment and climate change. DGEFC does the same exercise for policies pertaining to reforestation and the sustainable management of natural resources (forests and fauna among others). These themes are interdependent and overlapping which can make it difficult to differentiate the policy strengthening responsibilities of these institutions (e.g. for the development of policy documents to support the management of mangrove landscapes under a changing climate). Furthermore, MAEP through DPH is in charge of riverbanks management, which can include mangroves. Other weaknesses of the institutional framework include for example the unclear hierarchy of Forestry Inspections – which have an important role in mangrove management – that could limit their efficiency. There is currently no official document that clarifies the role of each of these institutions in the management of mangrove landscapes for the coordinated, harmonised, efficient and sustainable management of these ecosystems.

90. Inter-institutional collaboration between MCVDD departments and other relevant institutions such as the MAEP and Ministry of Decentralization and Local Governance (MDGL) takes place on an ad-hoc basis. There is currently no intersectoral cooperation platform to facilitate knowledge exchange and consultations. Insufficient collaboration between relevant entities is a barrier to the application of an integrated, landscape-level approach to successfully address the issue of mangrove ecosystems' degradation. The different departments under MCVDD – DGEFC, DGEC and ABE – would also benefit from a continuous collaboration mechanism to ensure that the complementarity and synergies of their respective activities is maximised. Increased collaboration between government authorities and local communities is also needed from the local to the communal and provincial levels to harmonise the efforts regarding development planning and apply a coherent and efficient approach to the management of mangrove landscapes.

Policy framework for mangrove management

91. The policy framework has a diversity of laws pertaining to environmental protection which caters for all natural ecosystems (please Part II Section 1.a Sub-section 1 Point 1.2) but it does not mention the protection of mangrove ecosystems in particularly (e.g. Benin Constitution, National Law on Forests, National Law on Environment). Mangroves are considered as part of forest ecosystems and don't benefit from specific regulations for their protection. As the policy framework supports forest protection, it does give the opportunity to develop local decrees for the application of national policies specifically for mangroves where necessary. For example, the decrees for the creation of each existing ACCB in the Ramsar site 1017 for the protection of mangroves and biodiversity was developed based on the existing national policy framework. However, these decrees are highly localised and rare, and the implementation of the national policy framework is not sufficiently supported by such application texts to promote specifically the protection of mangroves, in alignment with their unique socio-economic and ecological role.

Capacity and knowledge gaps on good practices for the sustainable management of mangrove landscapes

92. Communities' involvement in development planning and decision making is insufficient based on the field visit and observed ownership of PDCs by local communities. Government authorities do not have the required experience and skills to adopt participatory approach for planning processes. Participatory processes would increase community ownership and therefore increase the likelihood for PDCs to be implemented successfully and timely,

thereby supporting the successful implementation of national strategies and plans. Furthermore, current technical capacity within government institutions regarding the management of mangrove landscapes – including for example biological restoration techniques, hydrological restoration techniques, identification of suitable habitat under the future climate scenario – is limited. Decision-making tools to guide the sustainable management of mangrove landscapes in Benin are also missing which further impede government institutions such as DGEFC and DGEC in successfully fulfilling their mandate. The capacity of government institutions for sustainable mangrove management is further limited by the existing knowledge gap on good practices, success factors and lessons learned for mangroves' restoration and protection. Multiple initiatives have been implemented within and outside of Benin for mangrove restoration and protection using different approaches and techniques but this information is not readily available for practitioners. This is because of inadequate monitoring of mangrove management practices, and insufficient knowledge sharing and collaboration between the government institutions, NGOs and other actors working in mangrove management.

2.2 The baseline projects

Potential baseline projects:

Project Title	Funding sources, budget and Implementation period	Objective and main interventions	Opportunities for complementarity
West Africa Coastal Areas Management Programme (**WACA**) WACA-ResIP (Resilience Impact Programme): WACA-BAR[68] (Regional Support Office for Investment Projects for Coastal Resilience in West Africa – 6 countries) – lead by Intergovernmental Panel on Climate Change (IUCN) Regional Marine and Coastal Programme (MACO)	Funded by the World Bank IUCN MCVDD Phase 1: 2018-2023 Budget: USD 221 million for 6 countries Next phase with a larger budget and 9 countries (total duration of the programme: 15 to 20 years)	WACA has a strong focus on **infrastructure along the coastline to protect human and natural areas from erosion** processes caused by an increasing sea level rise, and address issues of pollution and flooding. https://www.wacaprogram.org/ MACO and West African Economic and Monetary Union (UEMOA) established **WACA BAR** in 2019. It is the support unit to implement WACA interventions in Mauritania, Senegal, Benin, Togo, Ivory Coast and Sao Tomé Principe against coastal erosion. There is one Project Management Unit per country that includes government representatives. WACA interventions include: • establishment of a regional observatory in Dakar (MOLOA) as well as national observatories in each country; • establishment of the required protocols linked to the Abidjan Agreement (waste, gas, petrol, mangroves...); In Benin in particular, under WACA Sub-Component 2.4 "Coastal Observation" (Budget: USD 640,000) a georeferenced system for environmental information[69] will be established under ABE and coastal assessments will be undertaken on the river banks and in the coastal part of the Mono River (i.e. in the communes of Grand-Popo, Ouidah, Comé, Athiémé, Djakotomey and Aplahoué). Under Sub-Component 3.1 (Budget: USD 58 million), hard infrastructure for transfrontier coastal protection will be supported in Grand-Popo commune as well as stabilisation and land management interventions from Gbékon to Grand-	Cofinancing budget: **USD 58,64 million** The GEF-funded project will complement and strengthen the investments of the WACA programme by protecting, restoring and promoting the long-term, sustainable management of mangrove landscapes as a natural barrier to the effects of climate change, for increased resilience of communities living in the mangrove landscapes including in the commune of Grand-Popo where WACA is focusing. The interventions of WACA in Grand-Popo – e.g. building hard infrastructure for coastal protection – will benefit from the GEF-funded interventions that will increase the capacity of mangrove ecosystems in providing a natural protection against erosion, storms and floods among others. The complementarity of hard and soft infrastructure will increase the efficiency and sustainability of the investment of both projects. The GEF-funded project will also complement the investments of WACA in establishing the national observatory by addressing knowledge gaps on biodiversity, ecosystems and climate resilience, and using existing platforms for knowledge sharing to support integrated coastal management in the region. Corresponding GEF-funded outputs: • Outputs 1.3, 1.4 and 1.5 on the design/update and implementation of Community-based Management Plans for mangrove landscapes in the 9 communes including Grand-Popo • Outputs 2.1, 2.2 and 2.3 that aim to promote sustainable sources of income to create incentives

[68] Projet d'investissement de résilience des zones côtières en Afrique de l'ouest
[69] Système Géographique de Gestion de l'Information Environmentale

		Popo. This includes building new and strengthening existing groynes, reforestation around hard infrastructure and building a cycling way among others.	for the long-term protection of mangrove ecosystems • Outputs 3.3 that will support knowledge sharing for the integrated and sustainable management of mangrove landscapes in Benin coastal areas.
Support Project for the implementation of PADAAM project (UTF/BEN/062/BEN)	FAO USD 253,000 Dec 2020 – Dec 2023	The project provides support for the implementation of Component 1 of the PADAAM project (see immediately below). This includes support for: i) the coordination of private stakeholders in the agricultural sector; ii) building the technical and project management capacity of the ATDAs; iii) support in using Rural Invest software for the implementation of PADAAM project; and iv) support in attracting funding from financial institutions for loans' allocation in the agricultural sector.	Cofinancing budget: **USD 1,971,797** A strong collaboration will be built with the PADAAM project towards supporting more sustainable and productive agricultural practices following agroecology principles in the targeted mangrove landscapes. The PADAAM project and the GEF-funded projects will join forces to support sustainable, resilient and biodiversity-friendly agricultural value chains. Corresponding GEF-funded outputs: • Outputs 1.3, 1.4 and 1.5 on the design/update and implementation of integrated Community-based Management Plans –that are climate resilient and promote biodiversity – for mangrove landscapes including agricultural land in the 9 communes (including improved soil management practices) • Outputs 2.1, 2.2 and 2.3 that aim to promote sustainable sources of income to create incentives for the long-term protection of mangrove ecosystems (including the strengthening of agricultural and small-livestock value chains) • Outputs 3.1, 3.2 and 3.3 that will strengthen the policy framework to promote and facilitate the implementation of good practices including improved agricultural practices, provide training to address institutional capacity gaps in integrated, participatory and gender-sensitive processes for the sustainable management of mangrove landscapes where required (including for MAEP), and the knowledge management and dissemination interventions.
Support Project for Agricultural Development and Market Access – PADAAM project	OPEP Fund and International Fund for Agricultural Development 2019–2025	This project focuses on three commodities: rice, maize and casava. It targets the agricultural communities particularly youth and women in the Atlantique (Allada, Toffo, Zè, Ouidah, Kpomassè Abomey-Calavi), Collines, Couffo, Mono, Ouémé, Plateau and Zou provinces. The objective of	Cofinancing budget**: USD 0** The GEF-funded project will promote improved agricultural practices following agroecology principles (agroforestry, crop rotation, crop diversification,

	Budget: USD 104,4 million	the project is to create partnerships between producers and buyers to increase producers access to the markets and to agricultural inputs. In Kpomassé and Bopa, the project focuses on the cassava flour value chain.	mulching, organic compost...) in 9 communes of Mono, Atlantic and Ouémé provinces. This will complement the interventions of PADAAM towards increased resilience of agricultural systems and food security. The GEF-funded project will also provide expertise on the integration of biodiversity and climate change considerations in agricultural development interventions, to enable increased resilience and productivity of agricultural land. Corresponding GEF-funded outputs: • Outputs 1.3, 1.4 and 1.5 (budget USD 2,5 million) on the design/update and implementation of integrated Community-based Management Plans – that are climate resilient and promote biodiversity – for mangrove landscapes including agricultural land in the 9 communes (including improved soil management practices) • Outputs 2.1, 2.2 and 2.3 (budget USD 2 million) that aim to promote sustainable sources of income to create incentives for the long-term protection of mangrove ecosystems (including the strengthening of agricultural and small-livestock value chains) • Outputs 3.1, 3.2 and 3.3 (budget USD 800,000) that will strengthen the policy framework to promote and facilitate the implementation of good practices including improved agricultural practices, provide training to address institutional capacity gaps in integrated, participatory and gender-sensitive processes for the sustainable management of mangrove landscapes where required (including for MAEP), and the knowledge management and dissemination interventions.
Support Project for seed production of indigenous and exotic forest species in Benin (Technical Cooperation Project TCP/BEN/3804)	FAO USD 253,000 Oct 2021 – Sept 2023	The project focuses on supporting improved livelihoods in agroecological landscapes in North and South Benin. The main interventions include: i) mapping existing plantations and rehabilitating two production sites for exotic species; ii) mapping seed sources for indigenous trees and capacity building of forestry government staff and private seed producers for the production of indigenous species; iii)	Cofinancing budget: **USD 253,000** The nurseries supported by the project in South Benin will support the activities of the project regarding the development of woodlots and agroforestry practices to respond to the demand for fuelwood and timber. The project will also contribute to the conservation of forest species by promoting indigenous forest species in

		establishing a cold room at CERF for the conservation of forest species seeds.	agroforestry systems and further strengthening the capacity of CERF. Corresponding GEF-funded outputs: • Output 1.1 under which research will be undertaken on mangrove forests and compounding species. Output 1.4 under which restoration interventions, agroforestry and woodlots establishment interventions will be established. • Output 3.2 and 3.3 focused on centralizing information on the health of mangrove ecosystems, previous and ongoing initiatives in and around mangrove ecosystems, and building capacity for the integrated and sustainable management of mangrove landscapes to protect mangrove ecosystems and their biodiversity.

3) Theory of Change and proposed Alternative Scenario of the project.

3.1. Theory of Change

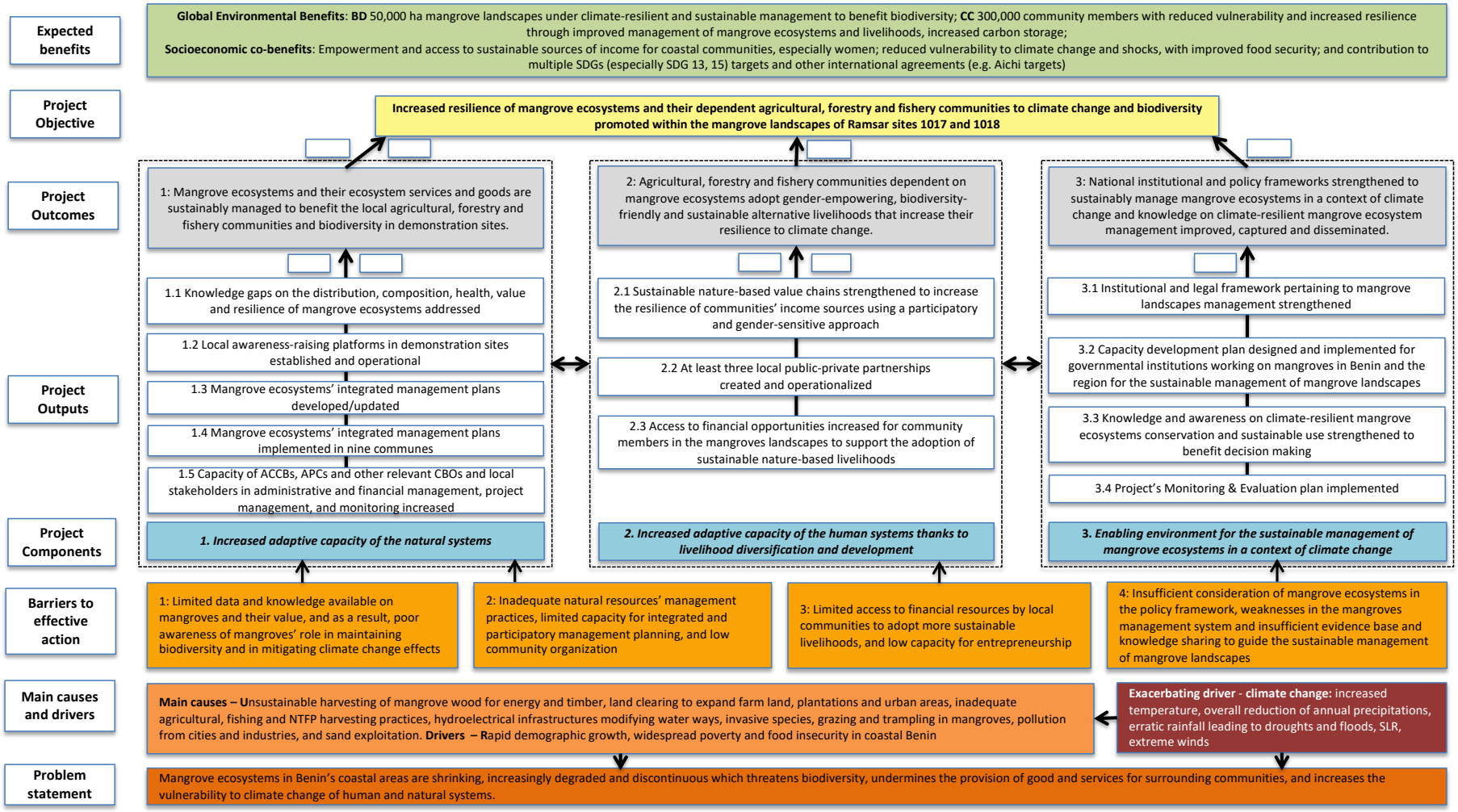

Figure 3: Theory of Change diagram of the proposed GEF-funded project

The achievement of the project outcomes and progress towards the project objective and expected results depends on a number of wider assumptions[70] (depicted by an 'A' in Figure 3), operating over different scales and at different points along the causal chains, being met. Assumptions that directly relate to achievement of the project's outcomes are that:

Key Assumptions:
A1 – Decentralised government institutions, community leaders, community groups, NGOs and private sector institutions are willing to engage in participatory landscape-level cross-sectoral management planning processes for mangrove ecosystems, and continue to support the community-based management approach for mangrove areas.
A2 – Local communities and Civil Society Organisations (CSOs) grasp the opportunities offered by community-based mangrove management, and are willing to invest the required time and energy to make their livelihoods more resilient.
A3 – Private sector actors including microfinance institutions and private companies are willing to support and invest in sustainable, nature-based value chains.
A4 – The demand for nature-based sustainable value chains to be supported by the project remain stable or on the rise and enables to provide secured, long-term sources of income for local communities, investors and buyer companies.
A5 – National government institutions involved in natural resources' management continue to acknowledge the necessity to increase inter-sectoral collaboration to protect and sustainably management mangrove ecosystems.
A6 – Mangrove ecosystems are able to adapt to changing climate conditions (e.g. increased temperature and salinity, droughts, floods, winds and SLR) and future suitable habitat can be identified.
A7 – Mangrove landscapes can retrieve their healthiness through improved management practices, and provide a suitable and stable habitat for globally significant biodiversity.

In addition, an impact driver[71] (depicted by a 'D' in Figure 10), that may make progress along the causal chain more likely, and over which the project or its partners could exert some influence, has been identified:

Impact Drivers:
D1 – Increased awareness among local communities, decision and policy makers from the local to the national level about the value of mangrove ecosystems and their role in climate change adaption and sustainable development

3.2. Proposed alternative scenario

79. Objective statement: The objective of the proposed project is to increase the resilience of mangrove ecosystems and their dependent agricultural, forestry and fishery communities to climate change and support the conservation of biodiversity and ecosystem services within the mangrove landscapes of Ramsar sites 1017 and 1018.

93. The approach and structure of the project were designed with the double aim of increasing biodiversity and strengthening the resilience to climate change of mangrove landscapes – including the terrestrial and coastal elements of mangrove ecosystems and surrounding production land – across Benin coastline. Existing livelihoods will be strengthened by diversifying sources of income (opportunities identified through participatory processes, addressing the needs of the most vulnerable *in primis*), and promoting more sustainable and efficient practices that support biodiversity and increased resilience. Mangrove ecosystems protection and restoration will be promoted throughout the project activities to increase the capacity of these ecosystems in providing ecosystem services such as mitigating the effects of climate change, and supporting income sources and well-being. The engagement of women will be maximised across the project interventions. Similarly, considering the high proportion of young people in the population, the project will put a strong focus on engaging and supporting the youth. This will support behavioural changes and the maintenance of good practices long after the project closure. The project interventions will contribute towards achieving multiple SDGs: No Poverty (SD1), Zero Hunger (SD2), Good Health and Well-Being (SDG 3), Gender Equality (SDG5), Decent Work and Economic Growth (SDG8), Reduced Inequalities (SDG10), Responsible Consumption and Production (SDG12), Climate Action (SDG13), Life Below Water (SDG14), Life on Land (SDG15) and Partnerships (SDG17).

[70] *Assumptions* are external factors or conditions that need to be present for change to happen, but are beyond the power of the project to influence or address, e.g., turnover of government officials, global financial situation.
[71] *Impact drivers* are significant external factors that can positively influence the direction of change along the project's causal pathways from outputs to outcomes to impacts, and over which the project, or its stakeholders/partners has some degree of control or influence, e.g., public pressure on decision-makers.

Component 1: Increased adaptive capacity of the natural systems

94. Component 1 of the project will first focus on addressing the required knowledge gaps on mangroves' ecosystems and species composition, land use and trends, future habitat suitability for mangroves under the climate change scenario, and the uses and value attributed to mangroves by local communities (Output 1.1). This information will then enable to develop tailored-made material to raise awareness of local communities in the targeted communes on the role of mangrove ecosystems, the impacts of climate change on these ecosystems, adaptation opportunities, the ecosystem services provided by the mangroves, the current threats faced by mangrove ecosystems, and the existing legal instruments related to mangrove ecosystems management (Output 1.2). Addressing information gaps will also provide a solid foundation for the participatory development planning exercise (Output 1.3). Community members will be supported in the creation of CBOs for natural resources management where required. Existing and new CBOs will thereafter be supported in the design and implementation of integrated management plans for mangrove ecosystems using a participatory approach (Output 1.4). This will go hand-in-hand with capacity building interventions to ensure that the targeted CBOs have the necessary set of skills and tools to sustainably manage natural resources, increase biodiversity and strengthen their resilience to climate change (Output 1.5).

Outcome 1: Mangrove ecosystems and their ecosystem services and goods are sustainably managed to benefit the local agricultural, forestry and fishery communities and biodiversity in demonstration sites.

Indicator 1: Number of ha of vulnerable and degraded mangrove landscapes under climate-resilient and sustainable management to benefit biodiversity
Target 1: 50,000 ha of vulnerable and degraded mangrove landscapes under climate-resilient and sustainable management to benefit biodiversity

Indicator 2: Number of communes adopting and implementing mangrove ecosystem management plans, and number of people benefitting from increased resilience
Target 2: 9 communes adopt and implement mangrove ecosystem management plans, benefitting directly the climate resilience of at least 300,000 people including 50% of women

Output 1.1 Knowledge gaps on the distribution, composition, health, value and resilience of mangrove ecosystems addressed in order to inform integrated management planning of mangrove landscapes under Output 1.4

Current situation:
95. The knowledge available on mangroves' repartition and health in Ramsar site 1018 is limited to the data collected during the PPG phase and mapping exercise undertaken. No other reliable sources of data on these mangroves could be identified. Inventories have been undertaken in the mangrove ecosystems of Ramsar site 1017 in 2017 as part of the FAO project "Restoration of mangrove ecosystems in Ramsar site 1017". This inventory was undertaken by Laboratory of Applied Ecology (LEA). There is no inventory available for mangrove of Ramsar 1018, whose biodiversity is therefore poorly known. In addition to knowledge gaps on mangroves, the economic value of the services provided by mangrove ecosystems regarding coastal protection, ecological regulation and the support of communities' income sources is unknown and must be addressed. As previously mentioned, mangroves seem to have an important place in people's culture and livelihoods but this social and cultural values have not been investigated and measured. Furthermore, there is a major need to increase understanding on i) mangrove biophysical and ecological requirements along Benin coastline; ii) the effect of current climate change trends on mangrove ecosystems and species; and iii) mangroves' resilience and capacity to adapt to future climate conditions. The latter is needed to identify future suitable habitat, to enable the design and implementation of successful and sustainable mangrove restoration interventions[72]. Finally, initiatives that have attempted to develop alternative sources of energy and more efficient cooking methods (i.e. solar energy, plantations, improved cook stoves) for local communities have not managed to significantly reduce the harvesting of *Rhizophora racemosa*. It is not clear why these initiatives were not successful, what are the socio-economic drivers behind the harvesting of *Rhizophora racemosa* and what are the other reliable energy sources that could be explored.

Proposed interventions:
(i) Develop detailed maps of mangrove ecosystems distribution, health and tree density in the targeted communes

[72] Sinsin C B L et al. (2021) Potential climate change induced modifications in mangrove ecosystems: a case study in Benin, West Africa. Environment, Development and Sustainability https://doi.org/10.1007/s10668-021-01639-y

(ii) Undertake inventories of flora and fauna in the mangroves of Ramsar site 1018 and update the inventories undertaken in Ramsar 1017 where necessary (could be undertaken by LEA and the Laboratory of Biomathematics and Forest Assessments – LABEF – under the Faculty of Agronomical Sciences, in collaboration with the Faculty of Human and Social Sciences)

(iii) Develop fine scale maps of suitable habitat for mangroves by 2030, 2050 and 2100 under the climate scenario to support mangrove management planning under Output 1.3 [based on the lessons learned from the technical cooperation project for mangrove restoration in Ramsar site 1017 from ONG Action Plus – drones and small boats will be provided to enable access to isolated areas]

(iv) Address knowledge gaps on land-use changes and development/conversion trends in mangroves, lagoons and lakes, wetlands, gallery forests, farmland and plantations within the targeted mangrove landscapes to support the participatory management process under Output 1.3

(v) Undertake a comprehensive analysis of the economic, social, cultural and environmental uses and value attributed to mangrove ecosystems in the targeted landscapes

(vi) Establish research partnerships with universities, schools and/or research centres (e.g. LEA, LABEF, CENAGREF) to address remaining knowledge gaps (e.g. ecosystem capacity for natural regeneration, mangrove trees' germination and growth requirements particularly in So-Ava, climate change/SLR resilience of mangrove species and ecosystems, relationship between mangrove ecosystems and neighbouring communities) through Masters, PhDs and/or PostDocs

Note: Specific research projects that could be undertaken include investigate the trends of mangrove ecosystems in the past 50 to 70 years, experimenting different planting techniques and sites to identify the required hydro-ecological and socio-cultural conditions necessary for successful restauration interventions in So-Ava Commune. In Abomey-Calavi, a research project could focus on identifying restoration methods for degraded salt marshes in Togbin.

(vii) Analyse the social, economic and/or cultural barriers to the success of previous initiatives in promoting alternative energy sources to *Rhizophora racemosa*'s wood (e.g. understand the low uptake of improved cook stoves) and identify reliable energy solutions

Output 1.2 Local awareness-raising platforms in demonstration sites established and made operational to mobilise and engage local stakeholder groups in mangrove ecosystem management planning, implementation and monitoring

Current situation:

96. There are no awareness-raising platforms in the targeted sites or institution implementing awareness-raising campaigns on a continuous basis. Awareness-raising interventions remain project-based and limited to the projects' scope, objectives and timeline rather than on priority environmental topics. This is the case for both government projects and NGO projects. Awareness-raising interventions generally receive insufficient human and financial resources to have a significant impact. Most awareness-raising campaigns are limited to meetings and group discussions, and messages on local radios. They rarely use audio-visual communication tools. Insufficient prioritisation of awareness-raising interventions in projects has resulted in inadequate involvement of local communities which has limited the success and sustainability of multiple projects. Awareness-raising in schools is limited, therefore preventing the initiation of a behavioural change within coastal communities through the younger generation.

97. In a recent study undertaken in Grand-Popo, it was shown that the majority of community members interviewed believed that their activities did not negatively impact mangroves despite popular recognition of the reduction of mangroves' coverage[73]. However, there was a general recognition that their income, health and security are impacted by mangrove degradation. Another study undertaken in Grand-Popo, Ouidah and Sèmè-Kpodji in 2019 revealed that local communities were well aware of the degradation of mangrove, the possible effects of mangrove destruction on their livelihoods and the need for mangrove restoration and conservation. Regarding restoration, the

[73] Gnansounou S C et al. (2021) Local uses of mangroves and perceived impacts of their degradation in Grand-Popo municipality, a hotspot of mangroves in Benin, West Africa. Trees, Forests and People 4

informants stressed that planting mangrove trees (*Rhizophora racemosa* and *Avicennia germinans*) should be coupled with the development of alternatives to timber and non-timber forest products[74].

Proposed interventions:
(i) Establish local awareness-raising platforms in the targeted sites through the identification of community champions and funding sources to support awareness raising and behavioural changes within their community groups

(ii) Provide training on awareness-raising methods to identified community champions, as well as communal staff, CSOs, local NGOs and local decision makers, and participatory development of awareness-raising tools

- Local gathering events with men, women and local authorities (around cooking for example which is preferred activities for women locally)
- "Wetlands celebration day"
- Exchange visits
- Social networks
- Newspapers
- Local radio shows
- Short documentaries

(iii) Organise awareness-raising activities for local communities, CSOs, local authorities, agricultural extension and advisory services, private companies and other relevant stakeholders in the targeted mangrove landscapes on the ecosystem services provided by mangroves, the current threats faced by mangrove ecosystems, the current and expected impacts of climate change, adaptation opportunities (with a particular focus on ecosystem-based adaptation strategies), and the existing legal instruments related to mangrove ecosystems management (e.g. Land-Tenure Code particularly regarding river banks and coast lines)

(iv) Create environmental clubs in schools neighbouring the mangrove areas, provide training to teachers, raise awareness of scholars and establish plant nurseries in each club

Output 1.3 Mangrove landscapes' integrated management plans developed/updated in nine communes involving local stakeholders, including from agriculture, forestry and fishery sectors

Current situation:
98. Regarding community organization, three ACCBs and two APCs already exist in the targeted communes. Indeed, one of the six ACCBs created in Transfrontier Biosphere Reserve of Mono Delta (RBT-Mono) is part of the targeted zone, namely ACCB Bouche-du Roy. Two more ACCBs have been created since then in Ramsar site 1017: ACCB Togbin Adounko and ACCB Vodounto. Another ACCB is under creation with the support of EcoBenin and PAP-Bio project around Lake Ahémé. In addition, two out of the four APCs of the Biosphere Reserve of the lower Valley of Ouémé are located in the targeted communes: Community-based National Park of Satatunga Valley in Zinvié (Abomey-Calavi Commune) and Intercommunity Reserve of Grand Nokoué (Aguégué, Sèmè-Kpodji, Sô-Ava communes). These CBOs are functioning more or less well. ACCB La Bouche-du-Roy has benefited from continuous support from EcoBenin and is therefore functioning efficiently, but others are needing support to become fully operational and gain autonomy. Some of these community-based organizations have a management plan for their conservation area to guide interventions. For example, ACCB Bouche-du-Roy has a Land-Use and Management Plan 2017-2021 for the reserve (i.e. 10,000 ha) under the Mono-RBT. It includes *inter alia* mangrove restoration activities that are currently under implementation with support from EcoBenin. However, most of the interventions of the management plan could not be implemented because of the absence of funding and now need to be updated.

99. Each commune has a five-year PDC. The next revision process for these PDCs is 2022 (except for Grand-Popo in 2023). In alignment with central government's guidance, each of these PDCs contain some mangrove planting activities under the programme "improving livelihoods, natural resources management and the environment". This programme includes two projects: i) restoration and sustainable exploitation of natural resources; and ii) increased resilience to climate change. However, on the ground, this government objective is less visible as most of the restoration interventions are undertaken by NGOs with international partners' funding. There is often limited data on

[74] Teka O et al. (2019) Mangroves in Benin, West Africa: threats, uses and conservation opportunities. Environ Dev Sustain (2019) 21:1153–1169.

current land uses and trends, and species richness, to inform PDCs which prevents precise mapping and planning exercises. Biodiversity and future climate conditions are not sufficiently considered in the PDCs to enable the maintenance of ecosystem functioning and climate change resilience.

100. Other management plans that have been developed in the targeted area include the National Strategy and Action Plan for the Sustainable Management of Mangrove Ecosystems developed under the GIZ project. This plan focuses on the mangrove areas of Ramsar site 1017. According to the consultations undertaken during the PPG phase, this plan has not been sufficiently disseminated and is not currently under implementation. The management plan of ACCB La Bouche-du-Roy was aligned to this strategy.

Proposed interventions:
(i) Create relevant CBOs for natural resources management (i.e. ACCBs, APCs or others) where they do not yet exist

(ii) Support ACCBs, APCs and other relevant CBOs in the targeted communes in developing or updating their management plans to ensure adequate integration of biodiversity and climate change considerations in a participatory manner and in alignment with existing plans where adequate (e.g. La Bouche-du-Roy and Gbaga Management Plans to be aligned with the Management Plan of the Mono Transboundary Biosphere Reserve which they are part of)

(iii) Support the revision process for the PDCs of the targeted communes planned in 2022/2023 to integrate the sustainable management of mangrove landscapes

(iv) Expand the National Strategy and Action Plan for the sustainable management of mangrove ecosystems 2020 to integrate the mangroves of Ramsar site 1018

(v) Identify activities to secure land tenure with the Public Land and Environmental Services

Output 1.4 Mangrove landscapes' integrated management plans implemented in nine communes, promoting innovative and integrated technologies and approaches in the agriculture, forestry and fisheries sectors that contribute to ecosystem restoration, resilience and sustainability

Current situation:
101. Except for the management plan of some existing ACCBs and APCs, the majority of the targeted mangrove areas are not currently being managed based on a concerted plan to address the current threats on these ecosystems and to develop sustainable economic opportunities. Multiple governmental and non-governmental initiatives have however implemented projects to address current issues faced by mangrove ecosystems.

102. With regards to initiatives aimed at improved exploitation practices, several initiatives have been implemented to improve fishing practices. Pisciculture in above-ground basins was piloted but its uptake was limited by the small size and high cost of the basins. Cast nets have also been promoted but they are difficult to afford. Previous attempts with improved cook stoves were made by NGO Action-Plus but uptake from women was low. In Ouidah, salt production using solar energy was experimented to reduce demand on fuelwood. However, the users were not satisfied with the efficiency of this technique which produced salt that melts easily in the sun. LEA is currently working on new salt extraction methodologies. In addition, ONG Action-Plus, EcoBenin and UNDP have implemented a project in Grand-Popo, Comè, Bopa and Ouidah for compost production between 2017 and 2019. It has significantly increased local technical capacity but some limitations such as difficulties to access the market to sell compost have hindered large scale production. EcoBenin has also participated to the implementation of a project to train youth in entrepreneurship and agroecological practices which provides a basis for the GEF-funded project to build on, but more technical support is needed based on the feedback received during the field visits. Two experimental sites for agroecological techniques were established in the village of Yondo-Codji, but there has been limited uptake from farmers. At the national scale, several institutions such as GIZ, French Development Agency (AFD) and FAO have promoted agroecology. This approach is currently gaining interest in the country as shown by the recent creation of the Gardens of Hope[75] initiative and the National Network to promote Agroecology (ReBPA). The Gardens of Hope initiative has established five production farms and promote the use of agro-boot camps to provide training-of-trainers. Other interesting initiatives includes AFD's support to the Benin's government for Agroecological Transition in

[75] « Les Jardins de l'Espoir » https://www.facebook.com/lesjardinsdelespoir/ – http://www.burkinadoc.milecole.org/agroecologie-afrique/agroecologie-benin/article-les-jardins-de-lespoir/

Cotton production Zones (i.e. TAZCO) in the northern half of the country, and the programme "Promoting food security and network of agroecological farms in Togo and Benin" funded by the Christian Support Service for Rural Animation.

103. With regards to plantations, private plantations have been established at a small scale across the two Ramsar sites and they are locally recognized for their potential to alleviate pressure on natural forests including mangroves. However, this strategy is limited by the low availability of land in the study areas. In addition, the species used in the plantations do not always meet the population's needs. In some mangrove areas, people live on islands that do not have enough available land for both food crops and tree plantations[76]. A good initiative was implemented in Ouidah whereby the protected forest of Pahou is composed of 500ha of Acacia plantation to meet demand for wood and to buffer the 225 ha of forests. It was established under the Fuelwood Project and aims to address energy needs for Ouidah and neighbouring communes. However, the regulation system is weak and the management of the park is not optimal. The fast-growing species *Acacia auriculiformis* has been widely planted in Sô-Ava. It is used as the principal substitute species to mangrove wood in Benin's coastal area and successfully grows in these areas. It is well appreciated by these communities as fuelwood. Despite these multiple efforts, the demand for mangrove wood from *Rhizophora racemosa* remains high and is still the main driver of mangrove degradation. Further integration of firewood species in agroforestry systems is necessary to increase their availability as an alternative to mangrove wood[77,78].

104. Multiple investments have focused on mangrove restoration. The increase in mangroves' cover observed between 2010 and 2020 has certainly resulted from increased efforts for mangroves' restoration in the Benin coastal region. This was achieved through intensive production and plantation of seedlings of mangrove species *Rhizophora racemosa* and *Avicennia germinans* on degraded sites in collaboration with local communities but also efforts to raise local communities' awareness for the conservation of mangroves[79]. These actions were led by the government and NGOs. A guide for the production and plantation of mangrove species in Benin was developed with support from FAO. Traditional conservation systems for forests through sacred groves have also been effective for mangrove conservation[80]. Indeed, it was observed that sites where mangrove wood harvesting was low corresponded to the sites hosting the local divinity ''Zangbeto''. These sites showed higher tree density, structural diversity, and growth characteristics[81]. Besides, the increased density of *Rhizophora racemosa* and *Avicennia germinans* communities tend to attract tourists and allows women to engage in commercial activities (e.g. foods selling, farming products selling, handcrafting)[82]. Further efforts are needed as current mangrove areas remain discontinuous with moderate to high levels of degradation in most places.

Proposed interventions:
(i) Signage to delineate the zones of the conservation area (including marine areas) and sacralisation process if adequate across the mangrove zones – including the buffer zone where harvesting is regulated and a rotation system is established if adequate – taking into account future habitat suitability based on climate scenarios

(ii) Support the creation process of Protected Areas/sanctuaries or other classified zones for mangrove ecosystems including as much as possible marine areas, including areas of future habitat suitability

(iii) Support mangrove (Assisted Natural Regeneration – ANR – and/or direct), riverbank and coastal vegetation restoration interventions including the establishment of nurseries (in the Coastal Patch and the Patch of Porto-Novo Lagoon and Ouémé River, except So-Ava where preliminary research is needed) using the Practical Guide for the

[76] Adanguidi J et al. (2020) Fuelwood consumption and supply strategies in mangrove forests – Insights from Ramsar sites in Benin. Forest Policy and Economics 116.
[77] Adanguidi J et al. (2020) Fuelwood consumption and supply strategies in mangrove forests – Insights from Ramsar sites in Benin. Forest Policy and Economics 116.
[78] Zanvo M. G. S. et al. (2021) Mapping spatio-temporal changes in mangroves cover and projection in 2050 of their future state in Benin. Bois et Forêts des Tropiques, 350 : 29-42. Doi : https://doi.org/10.19182/ bft2021.350.a36828
[79] Zanvo M. G. S. et al. (2021) Mapping spatio-temporal changes in mangroves cover and projection in 2050 of their future state in Benin. Bois et Forêts des Tropiques, 350 : 29-42. Doi : https://doi.org/10.19182/ bft2021.350.a36828
[80] Teka O et al. (2019) Mangroves in Benin, West Africa: threats, uses and conservation opportunities. Environ Dev Sustain (2019) 21:1153–1169.
[81] Zanvo M. G. S. et al. (2021) Mapping spatio-temporal changes in mangroves cover and projection in 2050 of their future state in Benin. Bois et Forêts des Tropiques, 350 : 29-42. Doi : https://doi.org/10.19182/ bft2021.350.a36828
[82] Gnansounou S C et al. (2021) Local uses of mangroves and perceived impacts of their degradation in Grand-Popo municipality, a hotspot of mangroves in Benin, West Africa. Trees, Forests and People 4

production and plantation of mangrove species in Benin and the experience generated through previous initiatives [international expertise needed for hydrological restoration, national and regional expertise needed for ANR]

(iv) Establish ecological corridor between the core mangrove sections (with both mangrove trees and fast growing species) particularly in Patch of Porto-Novo Lagoon and Ouémé River to increase the connectivity of mangrove sites

(v) Establish private and public woodlots – based on land availability – in areas surrounding mangrove ecosystems with species selected by local communities to address their demand for fuelwood and timber (based on the experience of EcoBenin, 2 ha of woodlots planted for each ha of mangrove restored) using improved seedling production and handling processes
[where land availability is a barrier, agroforestry in farmland with fast-growing species will be prioritised]

(vi) Support the adoption of improved soil management practices following an agroecology approach (including agroforestry, crop-rotation systems, mulching, production and use of natural pesticides and fertilisers such as compost, integrated food and energy systems, small-scale irrigation systems and water conservation) in the buffer zones and transition zones based on the experience of EcoBenin, Action-Plus, BEES, GIZ, AFD and FAO and building on existing structures (e.g. Agro Boot Camps of The Gardens of Hope, ReBPA)

(vii) Support the establishment of nurseries and pilot restauration plots for indigenous plants with high-value medicinal properties

(viii) Support the adoption of improved fishing practices and management (more selective fishing equipment and harvesting methods, reinforcement of traditional regulations that limit the number of days at sea...)

(ix) Support the reopening and maintenance of overgrown waterways in and around the mangroves for the circulation of small boats

(x) Support conservation activities for threatened species (protection measures for sea turtle eggs and nurseries, manatee conservation interventions...) in alignment with the development of ecotourism interventions and based on the expertise of partner NGOs

(xi) Train women on improved techniques for salt extraction and processing (e.g. promotion of the production of clean energy salt combining solar and wind energy enabling women to produce salt without degrading mangrove ecosystems)

Output 1.5 Capacity of ACCBs, APCs and other relevant CBOs and local stakeholders increased in administrative and financial management, project management, and monitoring

Current situation:

105. Some ACCBs and APCs have been created in Ramsar site 1017 but they are none in Ramsar site 1018. Based on the information collected during the PPG phase, existing ACCBs and APCs need support in administrative and financial management, project proposals' development to access funding, and project management and monitoring. Village Committees – which exist in most villages – also need capacity strengthening to make them more active and more engaged across development activities. In addition, women are rarely involved in decision making and activities for the community. Training in leadership is needed to support women in asserting their voices.

106. The monitoring of project interventions (e.g. planting activities) to adopt an adaptive approach and generate lessons learned is a common weakness of the initiatives implemented in the targeted areas. As a result, the positive results of the investments are rather limited or poorly known. This explain why there is little evidence-based information available on efficient approaches and techniques for mangrove restoration, species conservation and livelihoods strengthening.

107. Some species such as *Laguncularia racemosa*, *Rhizophora harisonii* and *Conocarpus erectus* seem particularly rare[83] (e.g. *Rhizophora harisonii* is only along the Lagoon of Grand Popo and Channel Gbaka). There is

[83] Sinsin C B L et al. (2021) Potential climate change induced modifications in mangrove ecosystems: a case study in Benin, West Africa. Environment, Development and Sustainability https://doi.org/10.1007/s10668-021-01639-y

very limited knowledge available on these species which prevents the design of adequate interventions for their conservation.

Proposed interventions:
(i) Provide administrative, financial and management training to ACCBs, APCs and other relevant CBOs, and strengthen savings and credit schemes

(ii) Provide training on women leadership and the uniform act of OHADA (Organisation pour l'Harmonisation en Afrique du Droit des Affaires/ Organisation for the Harmonization of Business Law in Africa) to CBO members and other interested women within the targeted communes

(iii) Design a citizens' mangroves monitoring system and support ACCBs', APCs' and other CBOs' members in adopting relevant monitoring tools (e.g. SMART tool based on the experience of EcoBenin, GPSs and/or CollectMobile) to monitor and measure the efficiency of the restoration and conservation interventions and draw lessons learned on best practices

(iv) Design and implement with local government institutions and in collaboration with ACCBs, APCs and other relevant CBOs a biomonitoring species that looks at: i) ecosystem regeneration, degradation and health; and ii) trend of mangrove species of high ecological and economic interest (e.g. *Rhizophora racemosa, Rhizophora harisonii, Avicennia germinans, Laguncularia racemosa, Accrostimum aureum* and *Conocarpus erectus*).

(v) Design and implement a monitoring plan to ensure compliance to exploitation rules using a participatory approach with Forest Inspections, DPHs and ATDAs

Component 2: Increased adaptive capacity of the human systems thanks to livelihood diversification and development

108. Component 2 will build on Component 1 and support the strengthening of value chains based on the sustainable natural resources' management practices promoted under Output 1.4. This component focuses on strengthening and diversifying income sources for local communities in mangroves' landscapes – with a particular focus on women and youth – to increase their resilience to climate change and support biodiversity conservation. These interventions will build on the extended experience of local NGOs in livelihoods' strengthening. The supported sources of income will be climate resilient and promote biodiversity and mangroves' ecosystem preservation (Output 2.1). The economic benefits generated through the development of sources of income that rely on functioning ecosystems (e.g. ecotourism, NTFPs, fisheries) are expected to incentivise the preservation of natural ecosystems by local communities beyond project closure as shown in Grand-Popo and Ouidah. Dialogues and negotiations with representatives of government funding mechanisms, microfinance systems and private companies will be undertaken to identify and secure additional sources of funding to complement GEF resources (Output 2.2). This additional funding will strengthen and sustain the value chains targeted by the project and expend the number of groups and associations benefitting from support in adopting resilient livelihoods. In addition, community-based finance systems will be established or strengthened to increase communities' access to financial support to maintain and further develop their sources of income (Output 2.3).

Outcome 2. Agricultural, forestry and fishery communities dependent on mangrove ecosystems adopt gender-empowering, biodiversity-friendly and sustainable alternative livelihoods that increase their resilience to climate change.

Indicator 1: Number of people benefit from increased income thanks to improved, climate-resilient livelihoods
Target 1: 5,000 people including 50% of women benefit from increased income thanks to improved, climate-resilient livelihoods (including 1,500 fishermen and 3,500 agricultural and forestry producers, processors and traders)

Output 2.1 Sustainable nature-based value chains strengthened to increase the resilience of communities' income sources using a participatory and gender-sensitive approach

Current situation:

109. As previously mentioned, existing value chains in the sectors of agriculture, fisheries, forestry and tourism are poorly developed (please see Part II Section 1 Sub-section 1.2 for more information). This prevents producers from generating a significant income from these activities thereby fueling more harvesting and increased pressure on natural ecosystems and resources. Some initiatives are underway in the targeted areas to strengthen specific value chains on which the project can build. For example, the United States Agency for International Development (USAID) is providing support in Kpomassé to establish a certification system for cassava flour through infrastructure development and capacity building in order to increase the financial return for women.

110. Multiple initiatives have been implemented for ecotourism development by EcoBenin in the Mono Delta more specifically in the communes of Ouidah and Grand-Popo. Ecobenin's programme Ecosystems Alliance focused on the development of ecotourism and has enabled the establishment of five ecotourism sites in Ouidah, Comè and Grand-Popo, namely in Avlo, Kpétou, Yondo-Codji, Adounko and Djègbadji. 10 natural and cultural tourism routes have also been established in this commune. According to the consultations during the PPG phase, increased economic value of the targeted natural ecosystems and strong engagement of local communities has resulted in a significant decrease in the pressure on these ecosystems in Ouidah commune. The Connected Ecotours' Network project of EcoBenin funded by the Programme of Québec for International Development aims to improve ecotourism services in the South of Benin. Its interventions include capacity strengthening for tourism guides in Zinvié, Avlo-Plage, Avlékété, Adounko and Possotomé. The Community-based Ecotourism Project of EcoBenin and Village Monde (Québec) supports micro-entrepreneurship for the establishment of a network of accommodations in the South of Benin, while contributing to mangrove restauration (with the aim to restore 100 ha). In Grand-Popo, EcoBenin is mandated to develop sightseeing tours that include palm and coco oil producers, and selling points for "toffis", handcrafted necklaces and bracelets. As a result, mangroves are being maintained in the sites and the trends of urbanization, and encroachment for the expansion of agricultural land and plantations are lower in these two communes compared to the other targeted communes. Community-based ecotourism is poorly developed in the communes of Ramsar site 1018 while there is good potential to attract tourists. For example, Sô-Ava has the highest bird species diversity in Southern Benin.

Proposed interventions:

(i) Refine the identification of priority value chains that support biodiversity conservation and increased resilience to climate change in a participatory manner, and in full alignment with the mangrove landscapes' integrated management plans

(ii) Support community members within the same value chain in organising themselves into cooperatives, strengthen existing cooperatives and support the grouping of cooperatives into clusters for the whole value chain where adequate, based on GIZ's experience with the coaching system (e.g. strengthen existing fishing cooperative through supporting registration processes and provide training in marketing in Sô-Ava, Abomey-Calavi and Sèmè-Kpodji)

(iii) Define a set of selection criteria and rating system to evaluate business plans for the development of sustainable nature-based economic activities, including as example: cost effectiveness, contribution/invesment from the applicants, resilience to climate change, financial viability and sustainability, benefits for biodiversity and for mangrove conservation, number of benefitting members, and social and economic benefits for the overall community

(iv) Provide training in entrepreneurship and in the development of a bankable business plan (preferentially as a group or association) for the development or strengthening of sustainable nature-based economic activities to interested community members in the mangrove landscapes following a learning-by-doing approach – with a particular focus on youth and women – based on the experience of EcoBenin with the Entrepreneurship and Funding Programme for Youth

(v) Select the business plans to be supported by the project based on the set of criteria previously designed

(vi) Provide training to local government institutions, NGOs, CBOs and/or community champions on improved production/harvesting/processing techniques for them to: i) undertake the training activities for community members (using a training-of-trainers approach); ii) provide long-term support for the maintenance of the improved livelihoods; and iii) support outscaling of these techniques.

(vii) Provide required training and equipment for the implementation of the selected business plans, including the establishment of tailored channelling systems for financial support (e.g. loans, revolving funds, grants) based on the experience of existing financial structures and relevant NGOs

Potential livelihoods to be supported under these business plans – based on the information collected during the PPG phase – include:

- Strengthen agricultural value chains from agroecological systems with a particular focus on women (e.g. processing and preserving agricultural products to minimise losses and increase quality of the product – tomatoes, chilli and casava as example, facilitating access to certified, climate resilient varieties – maize) building on the guidelines developed through the GIZ's PROSOL project
- Support the development of integrated farming system with small livestock such as poultry, rabbits and/or goats where fodder is producers and animal manure as fertilisers following an agroecology approach with a particular focus on women
- Support the adoption of improved processing practices for fish processing which is generally undertaken by women (e.g. more efficient fish smoking techniques such as the Thiaroye Processing technique) and other value chains strengthening activities (e.g. certification system for smoked fish)
- Pilot the development of sustainable fisheries or biodiversity-friendly aquaculture-based value chains (e.g. mangrove oyster, *Crassostrea sp.*, freshwater prawn, *Macrobrachium sp.*, peneids shrimps, crabs, *Callinectes sp.*, *Cardiosoma sp.*[84]) inhabiting the mangrove zone to sustainably increase communities revenue and resilience, and to reduce fishing pressure
- Support value chain development for non-timber mangrove products such as snails, mushrooms and others (e.g. creation of cooperatives, establishment of production and processing units, support access to financial support such as FNEC, certification systems)
- Develop the local market for sustainably produced fuelwood, timber, charcoal (e.g. adoption of efficient wood-to-charcoal conversion technologies, charcoal made with invasive species *Typha australist* in Aguégué and Sémé-Kpodgi or with coconut wastes), solar energy systems and/or biofuel (with water hyacinth) with a particular focus on women based on the result of study undertaken under Output 1.1
- Support community-based ecotourism (and agrotourism) development (training guides, accommodation, nature circuits, bird hides, farm activities, tourism association, tourism website, hand-crafted products based on water jacinth *Eichhornia crassipes* or other relevant natural resources...), valuing habits and customs of local communities in collaboration with EcoBenin (particularly for youth, and particularly in Kpomassé and Sémé-Kpodgi for development, and Grand-Popo, Ouidah and So-Ava for strengthening)
  Note: For ecotourism development, particular attention will be given to attracting national tourism (from Cotonou for example) in order to be less vulnerable to potential future travel restrictions.

Output 2.2 At least three local public-private partnerships created and operationalized to catalyse investments for alternative nature-based livelihoods and value chains in the targeted communities

Current situation:

111. Few initiatives have focused on increasing private sector engagement in sustainable value chains and mangroves preservation in South Benin. The PADAAM project supports *inter alia* the establishment of partnerships between women producing Cassava flour "Gari" in Comè and Kpomassé with local retailers. This project focuses particularly on youth and women. Based on the consultations undertaken during the PPG phase, GIZ's Mono Delta Project had planned to implement PES systems to finance the forest guards to control exploitation activities. However, they did not manage to identify interested private partners. One successful engagement initiative with the private sector was with CIMBENIN – a cement production company – who has factories in both Togo and Benin, and whose activities were causing air pollution. CIMBENIN worked with BEES NGO on the "Reforestation project of the hedges of Sèmè-Podji lagoon and the Biosphere Reserve of the Lower Valley of Ouémé". They support this initiative as part of their Corporate Social Responsibility programme. EcoBenin is currently working on setting up a carbon offsetting project in ACCB Bouche-du-Roy in order to generate long-term funding for mangrove conservation and restoration. The carbon storage analysis is currently underway to measure the storage capacity of the mangrove ecosystem in this site. Other than these initiatives, private sector engagement and linkages with local communities in the targeted area have been very limited.

[84] Adite at al. (2013) Fish Assemblages in the Degraded Mangrove Ecosystems of the Coastal Zone, Benin, West Africa: Implications for Ecosystem Restoration and Resources Conservation. Journal of Environmental Protection, 2013, 4, 1461-1475

Proposed interventions:
(i) Identify opportunities for the development of Public-Private Partnerships (PPPs) for the strengthening and long-term maintenance of agricultural, forestry, fisheries and/or ecotourism value chains development

(ii) Identify the opportunities for the development of PES schemes based on GIZ's, BEES and EcoBenin's experience to increase private sector involvement in the protection of mangrove landscapes and their biodiversity

(iii) Create and operationalise the selected PPPs

(iv) Support EcoBenin in certifying the carbon credit project in La Bouche-du-Roi

Output 2.3 Access to financial opportunities increased for community members – including the most vulnerable and poorest – in the mangroves landscapes to support the adoption of sustainable nature-based livelihoods

Current situation:
112. A diversity of microfinance systems exist in the targeted communes. The ones that are most commonly used are: Local Fund for Agricultural and Mutual Credit (CLCAM), Financial Services Association (ASF), Auto-managed Village Fund for Savings and Loans (CAVECA), Auto-managed Credit, Solidarity and Services Fund (CESCA), Support Project do Develop Micro-Enterprises (PADME), United Members Cooperative of Bethel Actions (COMUNBA), Savings and Credit Cooperative (COPEC), Association to promote Development Initiatives (ALIDE), and Village Associations for Savings and Loans (AVEC). The latter is specific to Grand-Popo commune. These structures offer mostly microloans and operate via revolving funds with interest rates ranging from 12 to 24% except for AVEC (5 to 10%). The saving services offered to coastal communities use the tontine system. Some of these structures also provide support on financial management. Despite these multiple systems, based on the field visits, the communities surrounding mangrove ecosystems – particularly farming communities – have difficulties to access financial support. The main challenges mentioned by the communities are: high interest rates, difficulty to provide required warranties (e.g. having a financial guaranty representing 10 to 15% of the loan or integrating a group of three to five people for the third-party guarantee), insufficient women education level, having an ID card, access conditions not suitable to agricultural activities, very small budgets allocated (e.g. the maximum amount of 100,000 FCFA – USD 176 – for women), and delays in making the money accessible (i.e. funds arrive two to 12 weeks after the request has been accepted). Financial structures also mentioned previous issues with outstanding depts, insufficient guaranties leading to high investment risks and weak business plans among others. Some new financial opportunities for women exist to facilitate their access to funding: PADME in Comè and ASF in Bopa which facilitate access to loans by women, microloan Alafia of the National Microloan Fund (FNM) and United States Development Fundation support to Gari producers in Kpomassé.

113. AVECs were piloted by EcoBenin in Grand-Popo. AVECs were created in 20 villages of ACCB Bouche-du-Roi which had limited access to microfinance opportunities. These structures focuse primarily on women involved in the commercialisation of natural products, salt production or in the exploitation of common rush *Juncus effusus*. The objective is to empower women, and enable them to improve their livelihoods and reduce their dependence on natural resources. These AVECs are currently functioning successfully and well appreciated by local communities accordingly to the consultations undertaken during the PPG phase.

114. Existing government funds such as the FNEC, the National Support Fund for Agricultural Development (FNDA) piloted by MAEP created to facilitate access to microfinance for farmers, and the Support Fund for Communal Development (FADeC) with its seventh component focused on agriculture are good opportunities to increase access to funding in the targeted communes. However, these funds remain difficult to access by local communities who struggle to develop eligible projects.

Proposed interventions:
(i) Train and support community members – particularly women – in the set up and management of AVECs or other adequate community-based finance systems to support the strengthening of climate resilient and biodiversity-friendly income sources

(ii) Create/strengthen and operationalise AVECs or other adequate community-based finance systems based on the experience of EcoBenin in the ACCB La Bouche-du-Roy and in full alignment with the mangrove landscapes'

integrated management plans to enable community members – particularly women – in improving their livelihoods and adopting more resilient, sustainable and biodiversity-friendly practices, and provide required training in financial and administrative management (including for the existing AVEC in la Bouche-du-Roy)

(iii) Train cooperative members and entrepreneurs in the development of projects eligible for existing government funds (e.g. : FNEC, FNDA, FADeC7) and establish collaboration agreements between AVECs and government funds where appropriate

(iv) Advocate for the allocation of increased human resources within the ATDA of MAEP to support agricultural producers in accessing financial opportunities such as FNDA

Component 3: Enabling environment for sustainable management of mangrove ecosystems in a context of climate change

115. The interventions under Component 3 will focus on mainstreaming, sustaining, documenting and sharing knowledge on the good practices implemented under Components 1 and 2. The policy framework and role of the different institutions pertaining to the management of mangrove landscapes will be strengthened and clarified where required. As a result, the policy environment in Benin will become more conducive to participatory, integrated, gender-sensitive decision-making and planning processes for mangrove landscapes. Training will be provided to government and non-government institutions involved in mangrove landscapes' management to make sure that they are fully capacitated to: i) continue applying the approach demonstrated under the project; and ii) continuously strengthen participatory decision-making and planning processes based on the experience generated over time following an adaptive approach. To support the replication and upscaling on the project approach, a diversity of knowledge management and communication tools will be developed and disseminated to facilitate access to the results and lessons learned from the GEF-funded project and partner projects. A diversity of national, regional and international platforms will be used to maximise the level of uptake of the knowledge generated under the GEF-funded project. A national awareness-raising campaign will be implemented using a training-of-trainers approach to support the implementation of continuous and harmonised awareness-raising interventions on mangrove ecosystems in South Benin. This campaign will focus on raising awareness on the role of mangrove ecosystems and sustainable development opportunities.

Outcome 3. National institutional and policy frameworks strengthened to sustainably manage mangrove landscapes in a context of climate change and knowledge about climate-resilient mangrove ecosystem management improved, captured and disseminated.

Indicator 1: Number of local decrees developed and proposed amendments to policy documents to support sustainable and climate-resilient mangrove management
Target 1: At least 3 local decrees developed and proposed amendment to 1 national law to support sustainable and climate-resilient mangrove management

Indicator 2: Number of institutional coordination mechanisms for integrated planning of mangrove landscape strengthened
Target 2: At least two institutional coordination mechanisms (one collaboration platform and one decision-making and planning process) for integrated planning of mangrove landscape strengthened

Output 3.1 Institutional and legal framework pertaining to mangrove landscapes' management (including community-based management) strengthened

Current situation:
116. As previously mentioned, the policy framework does not provide specific regulations for mangrove ecosystems. It does protect forests in general and gives the opportunity to adapt the national documents specifically to mangrove ecosystems at the local level. The exception however is the Draft Law on Forestry. It is the first policy document to explicitly recommend mangrove ecosystems' conservation under the chapter on the conservation of fragile ecosystems and promote the development of income sources that support their preservation. It present a good opportunity to develop the local laws focused on the preservation and sustainable management of mangroves to support its application. No projects so far have focused on creating terrestrial and marine protected areas for mangrove protection. However, the PIFSAP project "Project to integrate sacred forests in Benin's Protected Areas Network"

provides a good opportunity to identify the best methods to increase the protection status of mangroves. Clarifications on the role of different departments under MCVDD pertaining to the management of mangrove ecosystems are required.

Proposed interventions:
(i) Refine the gap analysis of relevant national legal instruments and institutional arrangements pertaining to mangrove ecosystems management, and identify opportunities for improvements under the project

(ii) Address identified priority gaps to improve the enabling conditions for integrated and sustainable management of mangrove landscapes such as:

- developing local decree for the application of existing legislations including the New Forest Code and other required local decrees and regulation documents to support the implementation of Mangrove landscapes' integrated management plans under Output 1.4 (e.g. regulations for fishing and harvesting of forest products in the conservation area);
- raising awareness on existing national laws and new local decrees, and capacity building for their local enforcement where required;
- support the mainstreaming of community-based natural resources management systems such as ACCBs and APCs;
- integrating mangroves ecosystem good and services in all planning efforts at national and decentralised levels;
- strengthening the collaborative platform between the agricultural and environmental sectors at both central and decentralised level;
- amending or developing a law to clarify the legal/land tenure status of mangrove ecosystems (excluding unsustainable practices such a cutting standing trees, promoting sustainable practices and giving access/management rights to local communities); and
- developing and disseminating policy briefs on relevant policy documents to facilitate their uptake and supporting policy dialogues where necessary.

(iii) Clarify DGEC and DGEFC's mandates in mangroves' landscapes management and refine decision-making and planning processes pertaining to mangrove landscape to ensure adequate participatory processes with local communities

(iv) Support local authorities in the inclusion of ACCBs', APCs and other CBOs' management plans in existing local development plans (PDCs and other administrative levels)

(v) Support the development of a financing plan for the updated National Strategy and Action Plan for the sustainable management of mangrove ecosystems

Output 3.2 Capacity development plan designed and implemented for governmental institutions working on mangroves in Benin and the region to be able to support integrated, participatory and gender-sensitive processes for the sustainable management of mangrove landscapes

Current situation:
117. There is limited capacity within government institutions who play a key role in natural resources management (e.g. DGEFC, DGEC and ABE) to lead participatory planning process, integrate the gender dimension, and design and implement efficient monitoring plans. In addition, technical knowledge of these institutions on mangrove ecosystems and restoration techniques remains limited. This includes institutions in charge of leading the protection of forest ecosystems on the ground, such as the Forestry Inspections and CENAGREF. Finally, joint capacity strengthening between government institutions around cross-border landscapes such as the RBT-Mono is necessary for the sustainable management of mangroves landscapes.

Proposed interventions:
(i) Undertake a three dimensional capacity needs assessment following FAO approach to identify gaps and weaknesses of key national and regional stakeholder groups in integrated and participatory processes for the sustainable management of mangrove landscapes as well as technical capacity gaps (primarily MCVDD's DGEC, DGEFC and ABE, MAEP's DPH and ATDA, MCAT, CENAGREF and other relevant organisations from Benin and neighbouring countries such as Togo)

(ii) Develop and implement a capacity development plan based on identified gaps (study visits, research exchange programmes, training sessions...) including as examples:

- Strengthen the capacity of Forestry Inspections to fulfil their role more efficiently; and
- Strengthen the capacity of CENAGREF in fulfilling its mandate through training in mangrove management and provision of tools for mangroves biomonitoring.

(iii) Identify and integrate local and tailored governance planning tools for bottom-up and participatory management of resilient mangroves and other relevant coastal landscapes

Output 3.3 Knowledge and awareness on climate-resilient mangrove ecosystems conservation and sustainable use strengthened to benefit decision making at the national scale

Current situation:

118. At the national of sub-national level, no knowledge-sharing platforms (online or documentation centres) on past and ongoing projects have been identified. Each organisation creates its own system to share progress reports, technical reports and research thesis within the organisation. However, existing platforms can potentially provide good opportunity for knowledge sharing to support the upscaling of good practices: i) National Association of Benin's communes; ii) Associations of the Communes of Mono, Atlantique and Ouémé Provinces; and iii) the platform of environmental NGOs in Benin – Pro-Environnement.

119. At the regional level, a collective of NGOs was recently created with support from Kinomé and led by EcoBenin. This collective called "Collective of the Deltas of Benin's Gulf" includes 12 NGOs from Togo, Benin, Ghana, Ivory Coast and Nigeria. It is based on the model of the Collective 5Deltas which focuses on Guinea, Mauritania, Guinea Bissau, Gambia and Sénégal. This initiative aims to increase knowledge sharing between countries, provide technical support and facilitate access to finance to the members for mangrove management.

Proposed interventions:

(i) Design and implement a tailored gender-sensitive knowledge management strategy to capture and share lessons learned from the project and other relevant initiatives based on existing platforms such as the Collective of NGOs headed by EcoBenin "Collectif des Deltas du Golf du Benin", this could potentially include:

- establishing a database centralizing information on the health of mangrove ecosystems, previous and ongoing initiatives in and around mangrove ecosystems, to be easily accessible to all relevant actors at national level – to be managed by a government institution such as CERF;
- develop a diversity of communication material on the approach, results and lessons learned from the project interventions adapted to government and non-government audiences;
- establishing a national platform for consultative decision making and experience sharing on mangrove ecosystems;
- disseminate communication material on existing platform such as the Association of Communes of Mono, Atlantique and Ouémé Province;
- publishing regular report on the state of mangrove ecosystems and trends.

(ii) Design and implement national awareness-raising campaigns on the role and value of mangrove ecosystem and sustainable management opportunities

(iii) Organise regional knowledge sharing activities through the Collective of Benin's Gulf Deltas headed by EcoBenin on good practices for the sustainable management of mangrove landscapes (exchange visits) and building on the efforts of IUCN in creating a knowledge sharing platform on mangroves in the Mono Transboundary Biosphere Reserve under PAP-Bio project

(iv) Organise international knowledge sharing activities on good practices for the sustainable management of mangrove landscapes

Output 3.4: Project's Monitoring & Evaluation plan implemented

A detailed M&E Plan using a results-based management approach will be developed to monitor the performance of the project. To do so, an M&E expert will be hired in PY1 to design and establish an M&E system to obtain information on progress in meeting targets, evaluating results and facilitating the systematization of experiences. Throughout the duration of the project, monitoring reports will be prepared by the Project Management Unit (PMU) according to the M&E system. The results matrix (Annex A1) presents the expected results from the project, related gender-sensitive indicators and measurement methods and tools that will be used. Throughout the project duration, annual financial audits will be conducted to ensure that resources are appropriately used as planned. An independent MTR will be conducted at the end of PY3 by experts selected by FAO with the approval of the Project Steering Committee (PSC). The technical MTR will be important to assess the project progress towards achieving its targets and objectives and also to assess the project management effectiveness. Recommendations to eventually adjust and update some of the outputs and activities will also be made if necessary. At the end of the project, an independent Terminal Evaluation will be conducted. Lessons learned and recommendations produced by the terminal evaluation will be fundamental to inform future initiatives.

Proposed interventions:

(i) Support the M&E officer in refining and implementing the project's M&E plan in collaboration with other PMU members, this includes clearly identifying the role of the team members and other project actors in data collection / analysis and ensuring that all required data is collected systematically and rigorously and align with and reinforce co-learning and co-creation.

(ii) Undertake the Mid-Term Evaluation

(iii) Undertake the Final Evaluation

4) **Alignment with GEF focal area and/or Impact Program strategies;**

120. *Climate Change Adaptation*: By designing and implementing mangrove landscapes' integrated management plans in vulnerable sites on one hand (Outputs 1.3 and 1.4) and by catalysing climate-resilient and biodiversity-friendly livelihoods (Output 2.1) on the other hand, the project will contribute to reducing the vulnerability of human and natural systems to the adverse effects of climate change (CCA-1). In addition, the project will support the strengthening of institutional and technical capacities for effective adaptation (CCA-2) through capacity building at the local level under Outputs 1.3, 1.4, 1.5 and 2.1 as well as at the national level under Outputs 3.1 and 3.2. In addition, increased access to knowledge and awareness-raising interventions under Outputs 1.2 and 3.2 will further increase the capacity of the population in the targeted communes and at the national level in adapting to climate change.

121. *Biodiversity*: by implementing community-led mangroves restoration and conservation activities in the most climate vulnerable and biodiversity sensitive ecosystems (please see Part II Section 1.a Subsection 6) the project will directly contribute to biodiversity conservation. In addition, supporting the adoption of improved agricultural, fishing and forest exploitation practices in the production land surrounding mangrove ecosystems will reduce the pressure on mangrove ecosystems. Biodiversity in production land will also be increased through the promotion of sustainable practices including agroecology and sustainable fishing. Finally, the project will contribute to mainstream biodiversity across sectors within and beyond the targeted landscapes through biodiversity mainstreaming in development plans (BD-1-1).

5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;

Component 1: Increased adaptive capacity of the natural systems

Baseline and co-financing:
122. WACA makes major investments in coastal planning and hard infrastructure for coastal protection in the region. This hard infrastructure might not be able to sustainably protect the coastal zone in the long term against the increased frequency and intensity of storm surges, and sea level rise. In addition, their maintenance will require

significant funding from the government which might not always be available. The monitoring of climate change effects on the coastal zone through the establishment of observatories will provide very valuable information for the adequate planning of coastal development. Without GEF support, further investments in hard infrastructure will be needed in the near future because mangrove ecosystems which provide a natural protection against the effects of climate change will continue to be degraded and to shrink.

123. The FAO Support Project for seed production of indigenous and exotic forest species in Benin will pilot interventions for improved livelihoods in agroecological landscapes in demonstration sites in South Benin, but the budget is limited and does not allow replication or upscaling. This project will also generate valuable information to support the conservation of indigenous forest species. Further funding is needed to put good practices for forest species' conservation into practice.

GEF support and financing:

124. *Climate change adaptation:* The implementation of the mangrove ecosystems' integrated management plans supported by the GEF-funded project will support the climate-proofing of the infrastructure funded by WACA. Indeed, mangrove conservation and restoration under the project will increase the capacity of mangrove ecosystems in fulfilling their role of buffer against erosion, storms and floods among others. The hard infrastructure supported by WACA and the soft infrastructure strengthened under the proposed project will complement each other towards the protection of coastal zones from the impact of waves and storms. The complementarity of hard and soft infrastructure will increase the efficiency and sustainability of the investments of both projects. The proposed project will also provide evidence-based information on the landscape-level approach to increasing coastal communities' resilience to guide future investments in coastal protection. Moreover, the GEF-funded project will address knowledge gaps on mangrove ecosystems in Benin including their resilience to climate change which is fundamental for informed decision-making on the use and management of these ecosystems.

125. *Biodiversity conservation:* Increased knowledge on mangrove ecosystems (Output 1.1) will provide the required information to enable adequate planning for biodiversity conservation by government and non-government institutions. Biodiversity will be supported in mangrove landscapes under Output 1.4 through their protection and restoration, and increased vegetation cover in buffer zones, and in production land using the agroecology approach. In addition, the GEF-funded project will complement the FAO TCP project by making use of the supported nurseries to develop woodlots and support the adoption of agroforestry practices to respond to the demand for fuelwood and timber, thereby reducing pressure on mangrove ecosystems. It will also contribute to the conservation of forest species through promoting indigenous forest species in agroforestry systems under Output 1.4 and 2.1, and further strengthening the capacity of CERF under Output 3.2.

Component 2: Increased adaptive capacity of the human systems thanks to livelihood diversification and development

Baseline and co-financing:

Through the implementation of coastal protection interventions, the WACA project will enable to safeguard communities' livelihoods against coastal erosion. This will give an opportunity for subsequent investment in the adoption of sustainable livelihoods within Benin coastal areas. In addition, the ongoing national programme PADAAM – which is not co-financing the GEF-LDCF investment though it is an important baseline project – is a partner programme that undertakes investments in staple crops. These investments are crucial for food security and for the strengthening of agricultural livelihoods. However, the project interventions made little consideration of biodiversity and methods for climate-change resilience such as crop diversification, crop rotation and mulching. Without GEF funding, the investments of PADAAM will likely be unsustainable and agricultural production will be negatively impacted by the effects of climate change. It could also hinder agrobiodiversity in the targeted sites if small-scale farmers convert their activities to specialise on these crops. The business-as-usual for Component 2 also includes initiatives of the government and the private sector in developing tourism activities that make little use of biodiversity richness as a marketing campaign and lack sufficient involvement of local communities to be sustainable and have a significant positive impact on the preservation of the natural systems they rely on.

GEF support and financing:

126. *Climate change adaptation:* Under Component 2, the GEF-funded project will build on the safer coastal environment created by the WACA project and GEF-funded project (Output 1.4) by strengthening nature-based Value Chains taking future climate conditions into account. These value chains will support sustainable and climate-resilient sources of income for the communities living in mangrove landscapes. The GEF-funded project will promote

improved agricultural practices following agroecology principles (agroforestry, crop rotation, crop diversification, mulching, organic compost...) in nine communes of Mono, Atlantic and Ouémé provinces. These interventions will build on and further threaten the breath of local and national initiatives that are supporting the development of agroecology in Benin such as the ReBPA network. The GEF-funded interventions will also complement the interventions of PADAAM towards increased resilience of agricultural systems and food security. Moreover, the GEF-funded project will provide evidence-based information and training on good agricultural practices following an agroecology approach and on the integration of biodiversity and climate change considerations in agricultural development interventions, to enable increased productivity and resilience of agricultural land and corresponding value chains.

127. *Biodiversity conservation*: Under the GEF-funded project, the socio-economic and financial benefits of Value Chains that promote biodiversity and mangrove conservation will be demonstrated. These benefits are expected to create incentives for the maintenance and upscaling of the sustainable production practices that they rely on. This will therefore promote biodiversity conservation across the targeted landscapes and beyond. The project will also collaborate with the PADAAM programme by ensuring that the results from the demonstration site are readily available and easy to use, and by supporting the identification of opportunities to improve agricultural practices that provide the dual benefit of promoting biodiversity and sustainably increasing productivity. This will enable the project to have a deeper and wider contribution to biodiversity conservation in agricultural systems in Benin. Furthermore, the GEF-funded project will support the development of ecotourism and agrotourism interventions in the coastal zone and other mangrove areas. The conservation and restoration of mangrove ecosystems will be a great asset for tourism development. The GEF-funded project will also support the development of community-based ecotourism activities that will complement and sustain ongoing investments from government institutions, NGOs and CBOs. It will also promote adequate consideration of climate change and biodiversity across the investments in tourism development in the mangrove landscapes to further support their sustainability thereby supporting the maintenance of ecotourism activities, as incentives for the conservation of natural habitat and biodiversity.

Component 3: Enabling environment for the sustainable management of mangrove ecosystems in a context of climate change

Baseline and co-financing:
128. WACA will support knowledge generation and monitoring of the biophysical and socioeconomic trends impacting coastal health, as well as knowledge sharing between West African countries on the protection of human and natural infrastructure against erosion. The baseline for Component 3 also includes the efforts of the government of Benin in strengthening the policy framework for forest conservation as demonstrated by the Draft Law on Forestry. This text now needs to be put into application. Furthermore, the project will build on NGOs' investments in awareness-raising interventions for environmental protection. These interventions are generally localised, short-term and project-specific which reduces their impact and prevents behavioural changes. Capacity-building interventions under FAO TCP projects for the conservation of indigenous forests are also limited in resources and time, and need strengthening for the conservation of forest species to be successful. World Bank/IUCN investments in increasing knowledge sharing and collaboration at the regional level through the MOLOA and the establishment of the Collective of the Deltas of Benin's Gulf have the potential to make a significant difference for the sustainable management of natural resources at the regional level. These platforms must however be operationalised and used in a systematic manner to be effective.

GEF support and financing:
129. *Climate change adaptation:* The knowledge sharing interventions at the national and regional level under the GEF-funded project will focus on good practices for the integrated management of mangrove landscapes as a mean to increase the resilience and well-being of coastal communities and will therefore complement the WACA project towards strengthening coastal resilience in West Africa. The GEF support will also build on government efforts to strengthen the policy framework and assist with the implementation of relevant documents at the local level in the targeted communes for the conservation of biodiversity and mangrove ecosystems under a changing climate.

130. *Biodiversity conservation:* The GEF-funded project will support increased impact of awareness-raising interventions towards a behavioural change regarding mangrove ecosystems' protection and biodiversity conservation. A significant proportion of the GEF funding is allocated to the production of a diversity of awareness-raising tools based on evidence generated through the proposed project and partner projects. These awareness-raising tools will be developed in a participatory manner as part of a training programme that will increase the capacity of

government institutions and NGOs in the implementation of awareness-raising campaigns. These tools will be available for use thereafter by upcoming projects and programmes to support the implementation of government strategies and commitments towards mangrove ecosystems' and biodiversity conservation. Finally, under Output 3.3 and 3.4, the strengthening and operationalisation of the newly created knowledge-sharing platforms will be supported by using them for the dissemination of evidence base on good practices, including the organisation of exchange visits and support to knowledge-sharing events to promote the sustainable management of mangroves and biodiversity conservation under future climate change scenario at the regional level. Global platforms will also be used to broaden the reach of the project results.

6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF);

131. The project will generate various adaptation benefits. By funding the additional costs of interventions necessary to integrate the expected impacts of climate change on conservation and restoration of mangrove ecosystems, the project will contribute to ensuring that the risks related to climate change, including variability, are integrated into biodiversity restoration and conservation management plans in mangrove areas. The expected area of land under climate-resilient management (Least Developed Country Fund– LDCF – core indicator) will be 50,000 ha. Under component 2, the project will invest into the identification, development and strengthening of alternative livelihoods that diversify livelihood opportunities for local communities in the agriculture, forestry and fishery sectors. It is believed that diversification is a successful adaptation strategy, contributing positively to the adaptive capacity of human systems to respond to the impacts of climate change. Throughout Components 1 and 2, both coastal communities and ecosystems' capacity to cope with climate change will be reinforced. The number of people with enhanced capacity to identify climate risk and/or engage in adaptation measures is expected to reach 10,200 (50% men, 50% women – LDCF core indicator), as they are directly benefiting from training. In total, 300,000 people will directly benefit from the project, large part of which, as a result of improvement land-use planning (50% men, 50% women – LDCF core indicator).

132. The project will also directly contribute to Aichi target 7 of the Convention on Biological Diversity (CBD), whereby areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity. This is captured in core indicator 4.1, i.e. 50,000 ha of mangrove landscapes under improved management to benefit biodiversity. BD investments will also directly benefit 300,000 women and men (50% men, 50% women).

133. The following table illustrates to which Aichi targets the project primarily contributes (from Benin's updated 2016 NBSAP).

National Aichi Targets	SMART Indicators	How the Project contributes
1: By 2020, decision makers, civil society organizations and communities become aware of the value and fragility of natural ecosystems and get involved in their conservation (Aichi target 1).	Existence of a data collection and sharing framework.	Through its Components 1 and 3, the project will contribute to raise awareness of communities and CBOs as well as decision-makers at the governmental level about mangrove ecosystems' value and fragility. A participatory approach was adopted across the decision-making, planning and implementation of integrated management plans for mangrove landscapes under Components 1 and 2. In addition, the capacity of government staff in implementing participatory planning processes will be increased under Component 3.
3: Community management plans are designed, adopted and monitored in an effective manner. By 2020, at least 60% of the forests reserves and other important massifs are managed through community	Percentage of national ecosystems management through participatory planning.	The project will support the creation of CBOs where needed, and the strengthening of existing ones. It will thereafter assist these CBOs in the development of

participatory management processes (Aichi targets 7, 11, 14).		integrated management plans for mangrove landscapes.
4: By 2020, the pace of deforestation in forest areas and buffer zones decrease by 20% (Aichi target 5).	Deforestation rate in forests areas an buffer zones.	Through its Components 1 and 2, the project will contribute to addressing mangrove degradation issues and contribute to conservation and restoration of remaining mangrove stands. It will also support the develop of sustainable, nature-based, resilient livelihoods that increase the economic value of healthy mangrove ecosystems to incentivise their long-term conservation (based on the experience in Grand-Popo and Ouidah).
9: By 2015, the on-going mangroves recovery programs are strengthened (Aichi targets 5, 11).	Percentage of mangroves recovered.	The proposed project is fully dedicated to restoring and conserving mangrove ecosystems taking into consideration future climate scenario and their impact on habitat suitability.
9: By 2016, the stakeholders involved in vulnerable marine ecosystems are provided with alternative solutions reducing pressures on such ecosystems (Aichi targets 4, 5, 10).	Number of stakeholders who implement marine ecosystem alternative solutions.	Component 2 of the project will identify and catalyse climate-resilient, sustainable livelihoods that aim at lowering anthropic pressure on mangrove ecosystems.
16: By 2014, information on ecosystem services provided to communities are gathered, updated and analyzed.	Updated document on stocktaking exercise about ecosystem services provided.	As part of Component 1, comprehensive analysis of the economic, social, cultural and environmental uses and value attributed to mangrove ecosystems in the targeted landscapes will be undertaken.

134. As previously mentioned, this project will contribute to multiple SDGs, these include as example: Climate Action (SDG13), Life Below Water (SDG14) and Life on Land (SDG15).

Biodiversity

135. The targeted zone covers 20.8% of Ramsar site 1017 and 20.9% of Ramsar site 1018. These sites were designated as Ramsar sites because they host wetlands of critical important for the preservation of migrating turtles and birds, fish species, crustaceans, molluscs and mammal species. The project's intervention area also includes parts of two biosphere reserves designated by United Nations Educational, Scientific and Cultural Organization (UNESCO): Transfrontier Biosphere Reserve of Mono Delta (designated in 2017) and Biosphere Reserve of the lower Valley of Ouémé (designated in 2020). The Transfrontier Biosphere Reserve of Mono Delta includes the flood plains, the delta, and the river bed and banks of the Mono basin. It covers 346,285 hectares at the border between Benin and Togo. One of the most remarkable characteristics of the reserve is that it includes a diversity of marine, terrestrial and lagoon ecosystems. The Biosphere Reserve of the lower Valley of Ouémé is located within the largest water basin of Benin. It provides habitat to a large diversity of fish populations and it is a key site for migratory birds.

136. Green turtles (*Chelonia mydas*, Endangered), olive ridley (*Lepidochelys olivacea*, Vulnerable), hawksbill turtles (*Eretmochelys imbricata*, Critically Endangered), leatherback turtle (*Dermochelys coriacea*, Vulnerable), the Ukami reed frog (*Hyperolius torrentis*, Endangered), hippopotamus (*Hippopotamus amphibius*, Vulnerable), the African Manatee (*Trichechus senegalensis*, Vulnerable), the slender-snouted crocodile (*Mecistops cataphractus*, Critically Endangered) are some of the species of global significance still living in the mangrove ecosystems of Ramsar sites 1017 and 1018 which are critically receding. In addition, a particularly high diversity of bird species is observed in the lower valley of the Ouémé. Lake Nokoué is also classified as an Important Bird Area (IBA-BJ004). Furthermore, about 20% of flora species are endangered and 27.4% are vulnerable in the two Ramsar sites (FAO,

2018). Overall, 51 fish species belonging to 25 families were recorded in Benin coastal mangroves[85]. Nine species observed in these sites are currently in the process of being included in the IUCN red list. In Grand Popo, as an example, vulnerable fish species include *Pseudotolithus senegalensis* (Endangered) and *Cynoglossus senegalensis* (Near Threatened). Mangroves play a pivotal role in the fish replenishment of coastal and inland waters.

137. The project will contribute to the conservation of biodiversity and threatened species by: i) supporting the development of community-based, integrated, resilient management plan for mangrove landscapes; ii) promoting land-use practices in production landscapes that promote biodiversity; iii) conserving and restoring mangrove areas; and iv) increasing the connectivity between mangrove patches to support species circulation.

Climate change mitigation as co-benefit:

138. By contributing to the preservation and restoration of mangrove ecosystems, the project will support increased soil carbon storage. Based on a study undertaken in 2014 in Ramsar site 1017, aboveground biomass carbon in non-degraded mangrove sites is on average 35.07 t/ha, more than five times that in degraded mangrove sites."[86] In addition, the project will support carbon storage through increased land cover in production landscapes and by promoting agroecological practices.

7) Innovativeness, sustainability, potential for scaling up and capacity development[87] .

Innovativeness

139. The project innovations lie in the design and implementation of participatory integrated mangrove ecosystems' management plans that have been piloted in some parts of Ramsar site 1017, and not yet piloted in Ramsar site 1018. Such approach will be informed by previous projects (e.g. RBT-Mono project) and international best practices in terms of participatory approaches and conservation practices in mangrove ecosystems. Similarly, Component 2 will seek the identification of innovative practices in mangroves area. Such approach will also be informed by international and sub-regional best practices in shifting communities' behaviour towards climate-resilient livelihoods that are sufficiently viable to induce behaviour changes and sustainable use of natural resources in mangrove ecosystems. The public-private partnerships that will aim at strengthening Value Chains through private investments will also be an innovative feature of the project. Private sector involvement in the sustainable management of natural resources is indeed very rare in Benin coastal areas.

140. The description of project components above illustrates a number of innovative technologies and approaches that the project intends to deploy and scale-up (both for ecosystem resilience and sustainable use as well as for livelihood diversification purposes). These technologies have been piloted by previous projects (including BEN/3502 – Restoration of the Mangrove Ecosystem of the Ramsar 1017 site in Benin) and management plans will identify the most appropriate technologies from longlists of best practices, in a participatory manner. Participatory planning will ensure social acceptance of new technologies, a better integration with traditional practices and eventually a greater uptake. Selected innovative technologies will also need to be (i) simple for easy reproduction by the local populations, and (ii) cheap in use and maintenance to be accessible and widely adopted. Other innovative approaches will be introduced, including (i) community-based landscape-level management and monitoring potentially through mobile applications such as Collect Mobile and (ii) innovative financial instruments in support of biodiversity conservation and climate change adaptation.

[85] Adite at al. (2013) Fish Assemblages in the Degraded Mangrove Ecosystems of the Coastal Zone, Benin, West Africa: Implications for Ecosystem Restoration and Resources Conservation. Journal of Environmental Protection, 2013, 4, 1461-1475

[86] Ajonina and al. (2014) Carbon Budget as a Tool for Assessing Mangrove Forests Degradation in the Western, Coastal Wetlands Complex (Ramsar Site 1017) of Southern Benin, West Africa. Book: The Land/Ocean Interactions in the Coastal Zone of West and Central Africa – Estuaries of the world series, Springer, 2014, p139-149.

[87] System-wide capacity development (CD) is essential to achieve more sustainable, country-driven and transformational results at scale as deepening country ownership, commitment and mutually accountability. Incorporating system-wide CD means empowering people, strengthening organizations and institutions as well as enhancing the enabling policy environment interdependently and based on inclusive assessment of country needs and priorities.

a) Country ownership, commitment and mutual accountability: Explain how the policy environment and the capacities of organizations, institutions and individuals involved will contribute to an enabling environment to achieve sustainable change
b) Based on a participatory capacity assessment across people, organizations, institutions and the enabling policy environment, describe what system-wide capacities are likely to exist (within project, project partners and project context) to implement the project and contribute to effective management for results and mitigation of risks.
c) Describe the project's exit / sustainability strategy and related handover mechanism as appropriate.

141. The project will make a real effort to integrate risks related to climate change and biodiversity conservation. The modelling of future habitat suitability and its integration in the delineation and design of the management plans is innovative. Increased capacity for the integration of future climate conditions likely to have a significant impact of mangrove trees such as increased salinity and SLR in decision making for mangroves' management will be maximised.

Sustainability

142. The awareness-raising training, tools and campaign on the role of mangrove ecosystems and existing economic opportunities through their preservation will support a behavioural change towards mangroves' preservation and biodiversity-friendly practices. The CBNRM approach and the participatory management plans will strengthen and expend previous efforts in transforming the way natural resources are managed in Benin coastal areas. The integration of spiritual beliefs and traditional knowledge of mangrove landscapes' medicinal plants will strengthen the link between local communities' livelihoods and mangrove ecosystems' health.

143. The sustainability of the project will be guaranteed by a multi-level capacity development approach whereby not only the system-level but also organizational and individual capacities are developed. Project's results can therefore be adopted at scale, and results can be maintained beyond the life of the project. Continuous involvement of local communities, local and national authorities, NGOs and private investors through the project will ensure the implementation of environmentally-sound and economically-viable interventions. The involvement of the private sector in the local public-private partnerships will also attract private investments for the strengthening of sustainable value chains, hence helping in sustaining these value chains and the corresponding improved production practices.

144. Moreover, social and economic sustainability will be promoted through implementing a participatory approach across the project interventions, including the decision-making, planning, implementation and monitoring stages. The project will demonstrate the ecosystem services of mangrove ecosystems and the economic potential of sustainable livelihoods. With the local communities becoming the basis upon which conservation and restoration efforts are being built in a participatory manner, and thanks to their involvements in public-private partnership for Value Chains' development, communities will become the main decision-maker for the sustainable management of mangrove ecosystems and associated sustainable livelihoods, and primary beneficiaries through increased social and economic resilience. The CBNRM approach used under the GEF-funded project will strengthen and expend previous efforts in transforming the way natural resources are managed in Benin coastal areas. The integration of spiritual beliefs and traditional knowledge of mangrove landscapes' medicinal plants in the management planning efforts will strengthen the link between local communities' livelihoods and mangrove ecosystems' health.

145. Institutional sustainability will be ensured through strengthening the capacities of CBOs, NGOs, MCVDD, and MAEP among other relevant organisations. The communication, trainings and knowledge-sharing methods will utilize a diversity of complementary tools to maximise their uptake. The awareness-raising training, tools and campaign on the role of mangrove ecosystems and existing economic opportunities through their preservation will support a behavioural change towards mangroves' preservation and biodiversity-friendly practices.

Potential for scaling up

146. In the design of the proposed project, a strong focus was given to capturing, disseminating and maximising uptake of the knowledge and experience generated through the proposed project and relevant partner projects. This will be achieved through the project-based, community-based and government-based monitoring systems to be established as well as the knowledge management strategy that will ensure broad dissemination of easy-to-use information. The knowledge management strategy will include as examples increased access to data and knowledge for all sectors at the national level through the creation of a centralised database and the use of newly created regional knowledge sharing and collaboration platforms. Scaling up will also be achieved through the landscape-level approach and the participation to the participatory planning processes of a broad range of government and non-government stakeholders intervening in each landscape. The organisation of exchange visits for peer-to-peer learning will enable the replication of good practices in similar sites. The project partners will disseminate information on the results and lessons learned with other countries along the West African coastal zone, thereby contributing to sustainable mangrove management and connectivity.

147. The project approach to strengthening of income-generating activities will be linked with the approach of existing private and public financial mechanisms. Opportunities to address the challenges faced by the corresponding institutions and to harmonise funding approaches to support biodiversity, resilience to climate change and mangroves' preservation. This will enable the identification of complementary sources of funding to strengthen, sustain and expand GEF investments. In addition, catalysing investments from the private sector for the strengthening of value chain and support to sustainable livelihoods will increase the financial flows towards the development of sustainable and climate-resilient alternative livelihoods in mangrove ecosystems thereby supporting further development within and beyond the targeted communes.

Capacity development

148. Capacity development interventions will be implemented at the local, communal and national levels. The project interventions are systematically paired with training sessions to enable national stakeholders to learn by doing and to be able to maintain the project outputs beyond the project lifespan. At the community level, most of the training will focus on the ACCBs, APCs and other supported CBOs as they are key to the implementation, success and sustainability of the project. Technical training and training on fund raising, administrative and financial management will be provided in a continuous basis during the project to ensure that these organisations have all the required tools to function efficiently and autonomously by the end of the project. To address identified capacity gaps, training will also be provided on the development of business plans and of project proposal to access existing public and private sources of funding to members of the local populations interested in adopting improved livelihoods. They will then be trained and supported in the development of their business plan and project proposals. Existing NGOs will be strongly involved in all project activities. Indeed, the NGOs most active in the landscapes have been selected as Operational Partners. The project will benefit from their extended local knowledge and give them the opportunity to embark on a continuous learning process alongside the project.

149. At government level, national, communal and local staff will be closely involved in relevant project interventions. Training interventions will focus primarily on landscape-level approaches for integrated development planning, participatory processes with local communities, gender inclusiveness, and biodiversity and climate change integration in decision making and planning. Tailor-made technical training on improved agricultural, fishing and forest-management practices will also be provided based on the strengths, weaknesses and priorities of each governmental institutions.

150. Capacity of government institutions and local populations will be further raised through increased access to information (e.g., sharing of all technical reports and main findings, wide dissemination of the technical guidelines and other training material, creation of an open-access database at national level, exchange visits). The awareness-raising interventions on existing policy documents for both government institutions, CSOs and local populations will also increase their decision-making capacity and their understanding of access rights. Awareness-raising on the importance of biodiversity and mangrove ecosystems to support livelihoods and well-being, and the opportunities offered by sustainable management practices, will empower local populations in making informed decision making for their household.

8) Summary of changes in alignment with the project design with the original PIF

Table 4: Changes between the Project Identification Form (PIF) and the Project Document

PIF	Project Document	Comments
Targets		
4: Area of mangrove ecosystem under climate-resilient and sustainable management to benefit biodiversity (target: 120,000 ha), including selected areas in Ramsar sites and surrounding production land 11: Number of direct beneficiaries with reduced vulnerability and increased resilience through improved management of mangrove ecosystems	4: 50,000 ha of vulnerable and degraded mangrove landscapes under climate-resilient and sustainable management to benefit biodiversity 11: 9 communes adopt and implement mangrove ecosystem management plans, benefitting directly the climate resilience of at least 300,000 people including 50% of women	The surface of the nine targeted communes is 245,627 ha. This includes 1,303 ha of mangroves. The mangrove landscapes are estimated to cover approximately 20% (50,000 ha) of the total surface of the communes, which is therefore the total area to be covered by the integrated management plans. An indicator was added to account for the carbon benefits from the project.

and livelihoods (target: 125,000 women and 125,000 men)		The number of direct beneficiaries was amended based on the population size in the targeted communes. It is expected that the project will benefit approximately 20% of the population of the targeted communes – which has a total of approximately 1,500,000 people – who live in the areas that will be under the management areas of the ACCBs, APCs and other CBOs.
Project Objective: Increased resilience of mangrove ecosystems and their dependent agricultural, forestry and fishery communities in southern Benin	**Project Objective:** To increase the resilience of mangrove ecosystems and their dependent agricultural, forestry and fishery communities to climate change and support the conservation of biodiversity and ecosystem services within the mangrove landscapes of Ramsar sites 1017 and 1018	The objective was slightly amended to make it more specific.
Intervention sites: Ramsar sites 1017 and 1018	**Intervention sites:** the 9 communes within Ramsar sites 1017 and 1018 that contain mangrove ecosystems	The targeted intervention area was narrowed down based on the results of the mangrove ecosystems' mapping exercise undertaken.
Components		
1: Increased adaptive capacity of the natural systems	1: Increased adaptive capacity of the natural systems	Unchanged
2: Increased adaptive capacity of the human systems thanks to livelihood diversification and development	2: Increased adaptive capacity of the human systems thanks to livelihood diversification and development	Unchanged
3: Enabling environment for sustainable management of mangrove ecosystems in a context of climate change	3: Enabling environment for sustainable management of mangrove ecosystems in a context of climate change	The wording was amendment slightly to highlight the different scaling dimensions.
Outcomes		
1: Mangrove ecosystems and their ecosystem services and goods are sustainably managed to benefit the local agricultural, forestry and fishery communities and biodiversity in demonstration sites **Targets:** • 120,000 ha of vulnerable and degraded mangrove ecosystems under climate-resilient and sustainable management to benefit biodiversity • X communes adopt and implement mangrove ecosystem management plans, benefitting directly the climate resilience of at least 250,000 women and men • (TBC during PPG)	1: Mangrove ecosystems and their ecosystem services and goods are sustainably managed to benefit the local agricultural, forestry and fishery communities and biodiversity in demonstration sites **Indicators and targets:** • 50,000 ha of vulnerable and degraded mangrove landscapes under climate-resilient and sustainable management to benefit biodiversity • 9 communes adopt and implement mangrove ecosystem management plans, benefitting directly the climate resilience of at least 300,000 people including 50% of women	The outcome name remain unchanged. The surface of the nine targeted communes is 245,627 ha. This includes 1,303 ha of mangroves. The mangrove landscapes are estimated to cover approximately 20% of the total surface of the communes, which is therefore the total area to be covered by the integrated management plans. The number of direct beneficiaries was amended based on the population size in the targeted communes. It is expected that the project will benefit approximately 20% of the population of the targeted communes – which has a total of approximately 1,500,000 people – who live in the areas that will be under the management areas of the ACCBs, APCs and other CBOs.
2.1: Agricultural, forestry and fishery communities dependent on mangrove ecosystems adopt gender-empowering, biodiversity-friendly and sustainable alternative livelihoods that increase their resilience to climate change. **Targets:**	2: Agricultural, forestry and fishery communities dependent on mangrove ecosystems adopt gender-empowering, biodiversity-friendly and sustainable alternative livelihoods that increase their resilience to climate change.	The number of beneficiaries from the income generating interventions under Output 2.1 had to be reduced. Based on the calculations, the Direct beneficiaries from improved practices and business plans are expected to amount approximately 5,000 people. This corresponds to support 50 business plans (with an average of 8 person participating for each business plan, which

• 42,000 women and 42,000 men benefit from increased incomes thanks to climate resilient alternative livelihoods (including 34,000 fishermen and 50,000 agricultural producers)		will enable to benefit the entire households which have an average of 5 people, therefore a total of 2000 direct beneficiaries for the business plans. Other direct beneficiaries include the people benefitting from training on improved practices.
3.1 National institutional and policy frameworks strengthened to sustainably manage mangrove ecosystems in a context of climate change and knowledge on climate-resilient mangrove ecosystem management improved, captured and disseminated. **Indicators:** • Number of legal instruments and institutional arrangements addressing national legal and capacity gaps for sustainable and climate resilient mangrove management • Number of institutional coordination mechanisms for integrated planning expanded	3: National institutional and policy frameworks strengthened to sustainably manage mangrove landscapes in a context of climate change and knowledge about climate-resilient mangrove ecosystem management improved, captured and disseminated. **Indicators and targets:** • Number of local decrees developed and proposed amendments to policy documents to support the sustainable and climate resilient mangrove management • At least 3 local decrees developed and proposed amendment to 1 national law to support the sustainable and climate resilient mangrove management • Number of institutional coordination mechanisms for integrated planning of mangrove landscape strengthened • At least two institutional coordination mechanisms (one collaboration platform and one decision-making and planning process) for integrated planning of mangrove landscape strengthened	The targets could not yet be defined at PIF stage, they have now been determined based on the information collected during the PPG phase. Based on the existing needs and gaps, it was decided to focus more on local laws to support the application of national policies than on national policies per se.
Outputs		
1.1 A comprehensive assessment of the economic, social, cultural and environmental value of mangrove ecosystems performed in order to inform decision making on ecosystem restoration and conservation interventions	1.1 Knowledge gaps on the distribution, composition, health, value and resilience of mangrove ecosystems addressed in order to inform integrated management planning of mangrove landscapes under Output 1.4	The wording of the output was amended to cover all the knowledge gaps to be covered under this output, and clarify the linkages with the other outputs.
1.2 Local awareness-raising platforms in demonstration sites established and made operational contributing to the mobilisation and engagement of local stakeholder groups in mangrove ecosystem management planning, implementation and monitoring	1.2 Local awareness-raising platforms in demonstration sites established and made operational to mobilise and engage local stakeholder groups in mangrove ecosystem management planning, implementation and monitoring	The wording of this output was amended slightly to make it clearer.
1.3 Mangrove ecosystem management plans developed in X communes involving local stakeholders, including from agriculture, forestry and fishery sectors	1.3 Mangrove landscapes' integrated management plans developed/updated in 9 communes involving local stakeholders, including from agriculture, forestry and fishery sectors	The term "integrated" was added in wording, otherwise it remains unchanged.

1.4 Mangrove ecosystem management plans implemented in X communes, promoting innovative and integrated technologies and approaches in the agriculture, forestry and fisheries sectors that contribute to ecosystem restoration, resiliency and sustainability (e.g. innovations in seedling production and handling for restoration purposes, innovative Integrated Food and Energy Systems, improved crop-rotation schemes, small-scale irrigation systems, and more to lift pressure from production land on mangroves)	1.4 Mangrove landscapes' integrated management plans implemented in 9 communes, promoting innovative and integrated technologies and approaches in the agriculture, forestry and fisheries sectors that contribute to ecosystem restoration, resilience and sustainability (e.g. innovations in seedling production and handling for restoration purposes, innovative Integrated Food and Energy Systems, improved crop-rotation schemes, small-scale irrigation systems, and more to lift pressure from production land on mangroves)	The term "integrated" was added in wording, otherwise it remains unchanged.
1.5 Capacity-building, advocacy, monitoring and technical training activities for local stakeholders undertaken	1.5 Capacity of ACCBs, APCs and other relevant CBOs and local stakeholders increased in administrative and financial management, project management, and monitoring	The wording was amended slightly to clarify the targets of the capacity building interventions.
2.1 Alternative nature-based livelihoods in mangrove ecosystems identified using the FAO guiding framework to developing gender-sensitive value chains	2.1 Sustainable nature-based value chains strengthened to increase the resilience of communities' income sources using a participatory and gender-sensitive approach	The wording of this output was amended slightly to make it more specific.
2.2 At least two local public-private partnerships created and operationalized to catalyse investments for alternative nature-based livelihoods and value chains in target communities	2.2 At least three local public-private partnerships created and operationalized to catalyse investments for alternative nature-based livelihoods and value chains in the targeted communities	The target was increased from two to three, one per mangrove patch.
2.3 Complementing output 2.2 and focusing on the most vulnerable and poorest, local community resilience funds set up to support nature-based livelihoods	2.1.3 Access to financial opportunities increased for community members – including the most vulnerable and poorest – in the mangroves landscapes to support the adoption of sustainable nature-based livelihoods	The wording of this output was amended slightly to make it clearer.
2.4 Capacity-building and training provided to local stakeholders in order to ensure the sustainability of the selected livelihoods (e.g. innovative Thiaroye Processing Technique, use of invasive species for handicrafts, improved cookstoves, improved salt processing units, and more)	N/A	This output was removed for more clarity as it was overlapping with Outputs 1.4 that focused on improving natural resources' management practices and 2.1 that focusing on strengthening value chains. The corresponding interventions have been integrated in these two outputs accordingly.
3.1. Institutional framework pertaining to mangrove ecosystems management strengthened	3.1 Institutional and legal framework pertaining to mangrove landscapes' management (including community-based management) strengthened	Based on the stakeholders consultations undertaken during the PPG phase, it was decided to combine the two outputs (Outputs 3.1 and 3.2 of the PIF). Indeed, there is a need to focus more on local laws to support the application of national policies rather than on national policies per se.
3.2. Legal instruments related to mangrove ecosystems management strengthened	N/A	See previous comment.

3.3 Capacity development plan designed and implemented for governmental institutions working on mangroves in Benin and the region to be able to support integrated, participatory and gender-sensitive processes for the sustainable management of mangrove landscapes	3.2 Capacity development plan designed and implemented for governmental institutions working on mangroves in Benin and the region to be able to support integrated, participatory and gender-sensitive processes for the sustainable management of mangrove landscapes	Unchanged
3.4 Local and tailored governance planning tools for bottom-up and participatory management of resilient coastal ecosystem developed and disseminated	N/A	For more clarity in the structure of the logframe, the intervention on the development of governance planning tools was integrated under Output 3.2 on capacity building for integrated planning processes.
3.5 Knowledge and awareness on climate-resilient mangrove ecosystems conservation and sustainable use strengthened to benefit decision making	3.3 Knowledge and awareness on climate-resilient mangrove ecosystems conservation and sustainable use strengthened to benefit decision making at the national scale	The scale of the awareness-raising interventions was clarified in the name of the output to differentiate them for the local-level awareness-raising interventions to be undertaken under Component 1.
3.6 Project progress, results, lessons and best practices documented and disseminated	3.2.1 Project's Monitoring & Evaluation plan implemented	The name of the output was changed slightly to differentiate it better from Output 3.3 of the Project Document on knowledge management.
GEF budget per component: 1: USD 3,676,821 2: USD 2,138,356 3: USD 1,000,000	GEF budget per component: 1: USD 2: USD 3: USD	Unchanged
Co-financing		
GCF: USD 30,000,000 MCVDD: USD 500,000 FAO: USD 4,000,000 Total: USD 500,000	MCVDD: USD 58,640,000 FAO: USD 2,224,797 Total: USD 60,684,797	The co-financing was changed. It was decided not to link with the Green Climate Fund project as it works too far upstream from the selected mangrove landscapes. More relevant opportunities – through the WACA programme mainly – were identified.

1.b Project Map and Geo-Coordinates.

151. The project will take place in nine communes across the coastal zones of Ramsar sites 1017 and 1018. The Geo-coordinates of the administrative Centre of each of them are provided below.

Table 5: Geo-coordinates of the administrative centres of the nine targeted communes

Commune	X	Y
GRAND-POPO	367960	694059
OUIDAH	398803	703018
SEME-PODJI	456047	705478
COME	376359	707698
KPOMASSE	391009	711450
ABOMEY-CALAVI	428777	712266
PORTO-NOVO	458190	714954
AGUEGUES	450085	716836
BOPA	385634	728673

2. Stakeholders.

152. In alignment with the projects' integrated approach, a large array of stakeholders will contribute to the project implementation. These stakeholders were first identified by the PPG experts during field visits and consultations, and the list and roles were further refined during bilateral exchanges with key partners.

153. The first online inception meeting took place as soon as the PPG team was complete, on 27 May 2021 to discuss the agenda of the PPG phase and expectations. Individual meetings were thereafter organised by the Project Design expert with each national expert to discuss the tasks to be undertaken. Thereafter, a technical meeting was held on 25th June 2021 with a group of technical experts from government institutions, NGOs and CSO representatives to assist the national experts with the prioritisation and preparation of the national and local consultation. A first extended field mission took place during two weeks from 9 to 26 July 2021. The six national experts – namely the Institutional Framework Expert, the Value Chains Expert, the Mangroves Expert, the Stakeholders Engagement and Gender Expert, the Geographic Information System (GIS) Expert and the National PPG Coordinator participated in this mission. During this visit, consultations with local authorities, NGOs, CBOs and members of the local populations including women and youth were undertaken. The objective of this first mission was to inform the stakeholders about the project and engage them as much as possible in its design. For example, land-users were asked to identify livelihoods improvement interventions that they would be interested in. Consultations, field visits and group discussion were undertaken.

154. After this first field mission, the national experts prepared a draft report. Several information gaps were remaining and it was therefore decided to undertake a second field mission. The entire team went back to the field. This 7-day field visit was undertaken from 27 September to 03 October 2021 and focused mostly on Ramsar site 1018, particularly on having focus groups with local communities to collect complementary information on their structure and expectations, and undertaking visits in mangrove sites to better understand their distribution, health, uses and threats.

155. Multiple consultations were undertaken at the central level with key stakeholders between July and September 2021, with a wide array of project stakeholder groups, including national and local NGOs, relevant project teams, resource partners and selected technical experts from national institutes. These consultations focused on identifying the strengths and weaknesses of the current institutional and policy framework pertaining to the management of mangrove landscapes, as well as lessons learnt and best practices, and co-financing opportunities.

156. A draft Project Document was prepared based on these consultations and shared with key relevant stakeholders at central and local levels prior to a validation workshop in Cotonou in January 2022. This workshop had the main purpose to provide full disclosure of and validate project intervention logic and activities, beneficiaries, institutional set-up and guiding principles such as inclusion, gender-responsiveness and participation.

Select what role civil society will play in the project:
☐ Consulted only;
☐ Member of Advisory Body; contractor;
☐ Co-financier;
☒ Member of project steering committee or equivalent decision-making body;
☒ Executor or co-executor;
☐ Other (Please explain)

157. A diversity of complementary capacity development interventions will be implemented from central to local levels for government and non-government stakeholders. The results framework includes indicators that ensure stakeholder participation in all components of the project. Adequate engagement of relevant central ministries, local authorities, NGOs, local associations, local populations' groups and private companies will be a prerequisite to undertake all institutional capacity development, participatory planning and strengthening of local regulations which will each require extensive consultation processes.

158. The PMU, under the overall supervision of FAO will be responsible for implementing the stakeholder engagement activities as outlined in the Stakeholder Engagement Plan and Stakeholder Engagement Matrix. It will also be responsible for monitoring and reporting on stakeholder engagement through the annual Project Implementation Review (PIR) reports.

159. In the annual PIRs, the PMU will report on the following indicators:

- Number of government agencies, civil society organizations, private sector, vulnerable groups and other stakeholder groups that have been involved in the project implementation phase.
- Number of engagements (such as meetings, workshops, official communications) with stakeholders during the project implementation phase.
- Number of grievances received and responded to/resolved.

3. Gender Equality and Women's Empowerment.

Provide the gender analysis or equivalent socio-economic assessment. If available provide document in annex and/or provide link.
The analysis conducted is reported below.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women's empowerment? (yes ☒ /no☐) If yes, please explain and upload/annex **Gender Action Plan** or equivalent[88]. Please see further below.

If possible, indicate in which results area(s) the project is expected to contribute to gender equality:
☒ closing gender gaps in access to and control over natural resources;
☒ improving women's participation and decision making; and or
☒ generating socio-economic benefits or services for women.
Does the project's results framework or logical framework include gender-sensitive indicators? (yes ☒ /no☐)

Brief description of the policy framework pertaining to gender

160. Benin's Constitution states that men and women have equal rights. A National Policy to Promote Women was adopted in 2001. The law 2002-07 of 24 August 2004 named "Code of individuals and family" reaffirmed equalitarian principles at all levels. The law 2003-04 of 3rd March 2003 on sexual and reproductive health prohibits sexual mutilations on women. A Policy for Women Education and Training was validated in 2007 and a National Policy to promote Gender followed in 2008. To further support women wellbeing and autonomy, the government created a National Institute for Women in 2009. This structure has not worked efficiently, and its mandate was therefore reviewed in July 2021. It is a government organization under the President's Office responsibility that aims to promote gender equality at the political, economic, social, legal and cultural levels. It combats any form of discrimination. It has a Call Centre to receive any complaints and to represent the victims in court. A National Gender Strategy is currently being elaborated.

Gender equality in the country and in the targeted area

161. According to the Gender Inequality Index measured based on reproductive health, autonomy and economic activity, Bénin is in the 148th position out of 162 countries assessed. As an example, gender inequality is captured by indicators including men and women access to education. To address this issue, the government has made primary education free of charge since 2006 but this imbalance remains. Hence, nowadays in rural areas more boys than girls go to school. Overall, women have lower education levels than men. Women involvement in high-level decision making is low. Only 7% of the members of parliament are women. In the targeted communes, the number of women within each communal council range from 0 to 10%.

162. Regarding women participation in community activities, traditionally in lagunes areas such as Kpomassé and Sèmè-Kpodji, it is not well seen for a married woman to be regularly seen in public places. Married women are rather expected to manage the household, processing and selling a diversity of products or helping their husband in the fields. There is even a risk of repudiation for some married women if they get involved in community activities. As a result, women hesitate to participate in community activities and projects have difficulties to achieve the target of 50% of women among the direct beneficiaries. Women-headed households also have limited access to information on resources' conservation due to traditional and social barriers[89]. According to a study undertake in Grand-Popo in 2021, men do most of the decision making both at village and household levels. The average fertility rate has reduced during

[88] Please refer to GEF Gender Equality Guidelines, Guide to maistreaming gender in FAO's project cycle, GEF Gender Guidelines.
[89] Gnansounou S C et al. (2021) Local uses of mangroves and perceived impacts of their degradation in Grand-Popo municipality, a hotspot of mangroves in Benin, West Africa. Trees, Forests and People 4

the past three decades but it remains high. In 2019, there was an average of 4.8 children per household[90]. This is another factor that reduces women availability to participate to activities outside of the household.

163. During the field visit, the few women found in the ACCBs, APCs and local committees were about 60 years old, therefore with less household and matrimonial duties. Some NGOs working in the targeted areas have given up on trying to involve women. The low education level of many women also prevents them from participating in some training courses, workshops or consultations that are often held in French. A paradoxical situation was therefore observed in the targeted area, women do want and need to equally benefit from projects but lack opportunities to participate in the discussions and decision-making processes.

Women role in household and economic activities

164. Women hold important knowledge for the functioning of the household and the community. Regarding agricultural activities for example, women hold the knowledge on seeds selection and seed conservation. They also know wild plants, how to harvest them, and their nutritional and medical properties.

165. There are significant inequalities regarding access to employment for men and women particularly in rural areas. Most women work in the informal sector or in low-ranking jobs where the salary is lower for women than men. Women participate to the processing and selling of a diversity of products. Women generally gather into informal groups to undertake together their harvesting, processing or handcrafting activities.

166. Based on a study undertaken in three of the targeted communes (i.e. Grand Popo, Ouidah and Sèmè-Kpodji), fuelwood was principally collected by women for cooking while service wood was extracted by men for construction work or handicraft. Timber extraction is mainly undertaken by men and is a major threat for the mangrove forests due to the high population growth and resulting increased need for construction material[91]. Fishing is mainly practiced by men. Women are generally involved in fish processing (e.g. fish smoking and commercialization)[92,93]. Regarding the production of agricultural products, women are mostly involved in small-scale fruits and vegetables production. In Grand-popo, Kpomassé and Sèmè-Kpodji, most of the agricultural activities are undertaken by women as it mostly small scale, subsistence production. Women also undertake the processing of some agricultural products such as casava that they transform into casava flour (i.e. “gari” or “tapioca”). In Grand Popo, Ouidah and Sèmè-Kpodji, salt production is highly practiced by women (particularly in Ouidah). Salt extraction only occurs during the dry season as traditional agricultural activities become impossible without rainfall. Salt production provides a consistent income to women and enables them to fulfil their essential needs[94]. Most of the oil production is undertaken by women. In the targeted communes, palm oil is mostly produced in Grand-Popo, Kpomassé and Sèmè-Kpodji. Coconut oil is produced in Grand-Popo and Ouidah. In Grand-Popo, women also produce coconut sweets called “toffi”. Women undertake most of the handcrafting activities linked to tourism. In Sô-Ava for example, they make bags, hats, key ring and tablecloth with water hyacinth. In Grand Popo, handcrafting with natural material to make necklaces and other items for tourism is a significant source of income for women.

Access to land:

167. Women generally do not have access to inheritance. This is the case in Kpomassé for example, where women can become landowners only by purchasing land in the communes’ land markets, where the sells generally focus on large plots of at least 2 ha. Considering that they practice activities that provide low income and they have limited access to financial opportunity, purchasing land is generally not possible. Options available to women to access land is through rental or sharecropping (i.e. “métayage”) where an agreed amount of the products is given to the landowner. This often takes place on small and/or degraded plots where productivity is low. Most of the time, women undertake agriculture on community land, family land or spouse land, very few women own the land that they work in. Women producers of palm oil or coconut oil generally buy the raw products from male landowners or inheritors. This very limited access to land ownership is an important factor that prevents women from investing in more sustainable exploitation practices and to become agents of change.

[90] https://donnees.banquemondiale.org/indicator/SP.DYN.TFRT.IN?locations=BJ Accessed on 19 October 2021.
[91] Teka O et al. (2019) Mangroves in Benin, West Africa: threats, uses and conservation opportunities. Environ Dev Sustain (2019) 21:1153–1169.
[92] Gnansounou S C et al. (2021) Local uses of mangroves and perceived impacts of their degradation in Grand-Popo municipality, a hotspot of mangroves in Benin, West Africa. Trees, Forests and People 4
[93] Observations from the field visits.
[94] Teka O et al. (2019) Mangroves in Benin, West Africa: threats, uses and conservation opportunities. Environ Dev Sustain (2019) 21:1153–1169.

Socio-cultural groups in the targeted area:

168. There are six socio-cultural groups: Xwla (mostly in Grand Popo), Pédah (mostly in Comè and Ouidah), Toffins (mostly in Sô-Ava and Abomey-Calavi), Sahouè (mostly in Bopa and Kpomassé), Tori (mostly in Tori and Sèmè-Kpodji) and Gun (mostly in Porto-Novo). All these groups belong to a larger socio-cultural and linguistic group: the Adja-fon. They have similar social structure based on family groups with a head of family. Most of the families are polygamous, but there is an increasing number of monogamous families among the Xwla group. Xwla, Pédah and Toffin groups practice mostly fishing. Sahoué people practice both agriculture and fishing. Tori and Gun are mostly farmers, fishing is a secondary activity. None of these groups consider themselves or are considered as indigenous, or as particularly vulnerable. The vulnerability of community groups in the targeted areas are not based on socio-cultural groups but on geographical characteristics. For example, Grand-Popo and Ouidah are accessible through a tar road while Kpomassé has no tar road and access to the commune is difficult during the rainy season, particularly in the village of Kouffonou. Similarly, in Sèmè-Kpodji, the village of Goho is isolated and difficult to access in the raining season as it is located between Porto-Novo Lagoon and Nokoué Lake. Communities in Kouffonou and Goho have major difficulties to access markets to sell their products. The communities in Sô-Ava are affected by heavy rains and often have to move to Abomey-Calavi, Akassoto or Cotonou during high water periods.

Gender consideration in the project implementation

169. The project interventions were designed with the objective to maximize women involvement, ownership and empowerment. It is expected that a target of at least 50% women beneficiaries will be achieved. Under Component 1, the economic, social, cultural and environmental assessment will take into consideration any gender-based differences in the value attributed to – and the goods and services derived from – mangrove ecosystems. Furthermore, the research students to be supported will have an equal number of men and women. Women participation will be maximized in all training activities for governmental and non-government organizations by ensuring the participation of female staff (generally in lower proportion than male staff). Awareness-raising activities will also be specifically designed to reach women and youth as well as isolated areas. The set of communication means will be selected accordingly, with the objective to increase women access to knowledge. Environmental clubs' structures and activities will be designed in such a way that they maximize girls' participation. Women participation in ACCBs, APCs and other CBOs will be promoted in order to reach – as much as possible – 50% of female members. This is crucial to achieve gender balance in decision-making and planning processes in the conservation area. Active participation and involvement of female members will be supported to make sure that the voice of male and female members have equal weight. Similarly, the consultative process to update the PDCs will be gender sensitive. The consultations with Public Land and Environmental Services (SAFE) under Output 1.3 to increase access to land tenure will focus particularly on women as they face significant issues to access land. The on-the-ground activities of the project under Output 1.4 will involve 50% of women participants overall (e.g. restoration activities, agricultural activities, conservation activities). Capacity strengthening activities under Output 1.5 will also benefit 50% of women who are expected to participate actively to the management of the ACCBs, APCs and other CBOs and to monitoring activities. To support this, leadership training modules will be implemented for women specifically to support increased involvement in decision making.

170. Throughout Component 2, the project will work towards promoting women access to alternative climate resilient, economically viable and sustainable livelihoods. Women knowledge on the usage of forest resources, seed management, fabrication of traditional food items, and handcrafting among others will be built on. Economic activities that are mostly practiced by women have been targeted under Output 2.1 to maximize women participation and the benefits they derive from the project. Women entrepreneurship will be supported by assisting women groups in the development of bankable business plans. The interventions to increase access to financial resources under Output 2.3 will include addressing the barriers identified during the PPG phase that women in particular face when applying for loans from microfinance institutions.

171. Under Component 3, any local decree supported under the project will be explicitly gender sensitive. The capacity development interventions with government institutions under Output 3.2 will have the double objective of ensuring sufficient community consultations through the adoption of participatory planning processes and ensuring adequate consideration of women voices during their community consultations. This will promote increased involvement of women into decision making beyond the targeted sites. Finally, the communication tools and format used for the national awareness-raising campaigns to share the knowledge generated from the project and other relevant initiatives will target women as much as possible.

172. The project will ensure that women's specific needs are met, that women enjoy equal access to project activities from the design to the implementation stage and that all potential benefits are equitably accessed through project implementation. The project will monitor its interventions using disaggregated indicators to assess project

results and effects on men and women. Gender sensitive indicators were developed in order to assure a gender-equal participation and access to benefits from the project interventions. Active participation of women during the consultation and decision-making processes will be promoted following FAO's policy on gender equality.

TABLE 6. GENDER ENTRY POINTS FOR MONITORING DURING PROJECT IMPLEMENTATION

#	Question	Answer	Comment
1	*Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women's empowerment?*	Yes	• The intervention will include as a priority female-headed households. • A Gender Expert will be appointed in the PMU. • Women will receive training in leadership for increased participation in decision making. • In order to secure women participation in training at community level, child-care will be provided for (lifting the burden of household chores).
2	*Which area(s) the project is expected to contribute to gender equality:*	All	
2a)	*Closing gender gaps in access and control over natural resources*	Yes	• The interventions will contribute to the clarification of access rights to natural resources with a strong focus on gender balance. • Training and equipment will be provided for increased access to resilient sources of income particularly for women. • Means to secure women access to land will be identified and implemented.
2b)	*Improving women's participation and decision-making*	Yes	• Events and training will be undertaken in local language, and consider the low literacy rate. • Each local committee created will have 50% of female members. • Women will receive training in leadership for increased participation in decision making. • Each environmental club will include 50% of women and girls amongst its members.
2c)	*Generating socioeconomic benefits or services for women*	Yes	• Training in entrepreneurship will be provided with a particular focus on women and youth. • Women empowerment will be supported by the strengthening of existing women groups into associations and cooperatives. • Economic sources of women (agricultural production, agricultural, fish and forest products processing, handcrafting...) were prioritised in the livelihood strengthening interventions of the project. • Access to financial support for women will be increased. • Awareness and capacity of government staff for integrated, gender sensitive planning processes will be increased.
3	*Does the project's results framework include gender-sensitive indicators?*	Yes	• Gender-sensitive indicators have been developed across the project results-based framework, please see the Gender Action Plan (GAP).
	Source: GEF Guidance to Advance Gender Equality 2018.		

Gender Action Plan (GAP)

1. The GAP was designed to ensure that sources of gender inequality are addressed, that the project interventions contribute to closing the gender gap, and that women are empowered under the project's interventions in Ighil Ali and Teniet En Nasr communes, and beyond. Table 3 below set out the GAP provisions per project components, outputs and activities.

Table 7: Gender Action Plan per project activity

OVERARCHING HUMAN RESOURCES AND FINANCIAL COMMITTMENTS	National Project Coordinator (NPC), supported by M&E Officer, Gender Officer (national consultant) and Gender Focal Point at FAO Benin	**Gender milestone actions by Project Activity**
		• Ensure that the gender metrics are effectively monitored
		  o The NPC will be responsible for this activity with the support of an M&E expert and a Gender Officer who will monitor and provide operational support for the implementation of the GAP and the gender-sensitive results-based framework.
		• Insert gender/social inclusion standards in all project staff/consultants TOR:
		  o The NPC will have overall responsibility for GAP implementation and gender-related results including mobilising relevant human and financial resources and taking timely remedial action as needed.
		  o All staff/consultants will be responsible for identifying and integrating practical actions to respond to gender-differentiated issues and their implications for women and men.
		• Carry out briefing on project GAP for all staff and require that all consultants familiarise themselves with the GAP.
		  o The NPC will be responsible for this activity with the support of an M&E expert and a Gender Officer who will monitor and provide operational support for the implementation of the GAP and the gender-sensitive results-based framework.
		• The Gender Officer will review all inputs and ensure relevant input/recommendations/findings are addressed.

Outputs	Responsibilities for ensure compliance to the GAP	Core activities
1.1.1	Project NPC, supported by M&E Officer, Gender Officer, MCVDD and FAO and partners (e.g., CENAGREF, LEA, LABEF, Universities)	(i) Develop detailed maps of mangrove ecosystems distribution, health and tree density in the targeted communes • Map and document the areas used and explored by women (ii) Undertake inventories of flora and fauna in the mangroves of Ramsar site 1018 and update the inventories undertaken in Ramsar 1017 where necessary (could be undertaken by LEA and the Laboratory of Biomathematics and Forest Assessments – LABEF – under the Faculty of Agronomical Sciences, in collaboration with Faculty of Human and Social Sciences) • Document the traditional use of plant species and varieties by women (iii) Develop fine scale maps of suitable habitat for mangroves by 2030, 2050 and 2100 under the climate scenario to support mangrove management planning under Output 1.3 [based on the lessons learned from the technical cooperation project for mangrove restoration in Ramsar site 1017 from NGO Action Plus – drones and small boats will be provided to enable access to isolated areas] • Consider the differentiated use and needs men and women express (iv) Address knowledge gaps on land-use changes and development/conversion trends in mangroves, lagoons and lakes, wetlands, gallery forests, farmland and plantations within the targeted mangrove landscapes to support the participatory management process under Output 1.3 • All community consultations as part of the participatory processes will maximise women participation to achieve – as much as possible – 50% overall. Specific events for women will be organised where needed.

		(v) Undertake a comprehensive analysis of the economic, social, cultural and environmental uses and value attributed to mangrove ecosystems in the targeted landscapes • Value assessments will take into consideration differences between men and women, and value assessments of biodiversity and ecosystems will be disaggregated by gender where differences exist (e.g., differences in cultural, social, economic and/or financial value). (vi) Establish research partnerships with universities, schools and/or research centres (e.g. LEA, LABEF, CENAGREF) to address remaining knowledge gaps (e.g. ecosystem capacity for natural regeneration, mangrove trees' germination and growth requirements particularly in So-Ava, climate change/SLR resilience of mangrove species and ecosystems, relationship between mangrove ecosystems and neighbouring communities) through Masters, PhDs and/or PostDocs • Among the Bachelor, Masters or PhD projects to be supported, 50% of women students will be appointed. (vii) Analyse the social, economic and/or cultural barriers to the success of previous initiatives in promoting alternative energy sources to *Rhizophora racemosa'*s wood (e.g. understand the low uptake of improved cook stoves) and identify reliable energy solutions • This analysis will be gender sensitive, with a particular focus on women whom are the main users of fuelwood.
1.1.2	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO and Operational partners	(i) Establish local awareness-raising platforms in the targeted sites through the identification of community champions and funding sources to support awareness raising and behavioural changes within their community groups • The community champions to be supported will include at least 50% of women. (ii) Provide training on awareness-raising methods to identified community champions, as well as communal staffs, CSOs, local NGOs and local decision makers, and participatory development of awareness-raising tools • The community champions to be supported will include at least 50% of women. It will taken an extra-ordinary effort to identify and mobilise these female champions. One incentive will be the compensation of household chores. • The set of communication tools will be selected in order to reach women and men equally, as well as all community groups. (iii) Organise awareness-raising activities for local communities, CSOs, local authorities, agricultural extension and advisory services, private companies and other relevant stakeholders in the targeted mangrove landscapes on the ecosystem services provided by mangroves, the current threats faced by mangrove ecosystems, the current and expected impacts of climate change, adaptation opportunities (with a particular focus on ecosystem-based adaptation strategies), and the existing legal instruments related to mangrove ecosystems management (e.g. Land-Tenure Code particularly regarding river banks and coast lines) • Awareness-raising events will reach at least 50% of women overall. Based on the field visits, this cannot be achieved for each event as mixed events generally have more male participants. Therefore, specific events targeting women will also be organised. Female staff from NGOs and CBOs will be particularly encouraged to participate in the training sessions. (iv) Create environmental clubs in schools neighbouring the mangrove areas, provide training to teachers, raise awareness of scholars and establish plant nurseries in each club • Environmental clubs' structures and activities will be designed in such a way that they have 50% of girls as members, and maximize active girls' participation across the activities.
1.1.3	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO,	(i) Create relevant CBOs for natural resources management (i.e. ACCBs, APCs or others) where they do not yet exist • Overall, at least 50% of the members of the CBOs supported by the project will be women.

	Operational partners, and local government	(ii) Support ACCBs, APCs and other relevant CBOs in the targeted communes in developing or updating their management plans to ensure adequate integration of biodiversity and climate change considerations in a participatory manner and in alignment with existing plans where adequate (e.g. La Bouche-du-Roy and Gbaga Management Plans to be aligned with the Management Plan of the Mono Transboundary Biosphere Reserve which they are part of) • The presence and active participation of women during the participatory development processes will be a condition for the continuation of the process. Consultations will be held according to the timing of women household and income-generating activities. Late sessions (corresponding to cooking time) will be avoided. Child care will be provided when needed. Previous experience of the project partners (e.g. NGO EcoBenin and BEES) in involving women will be built on. For example, all sessions will be translated in the local language. This will ensure women ownership of the plans. The consultation of men and women together and/or separately, including youth, will enable the adequate integration of the priorities of each group in the plans. (iii) Support the revision process for the PDCs of the targeted communes planned in 2022/2023 to integrate the sustainable management of mangrove landscapes • The participation of female government staff will be maximised during the PDCs' revision processes. Each intervention to be integrated in the PDCs will be gender sensitive. Differences in the interests and activities of men and women will be taken into consideration and the PDCs will integrate interventions that benefit men and women equally. (iv) Expand the National Strategy and Action Plan for the sustainable management of mangrove ecosystems 2020 to integrate the mangroves of Ramsar site 1018 • The supported revised strategy will be gender sensitive. (v) Identify activities to secure land tenure with the Public Land and Environmental Services • This activity will focus primarily on women, as their access to land seems to be more precarious than men.
1.1.4	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO, Operational partners, and local government	(i) Signage to delineate the zones of the conservation area (including marine areas) and sacralisation process if adequate across the mangrove zones – including the buffer zone where harvesting is regulated and a rotation system is established if adequate – taking into account future habitat suitability based on climate scenarios • N/A (ii) Support the creation process of Protected Areas/sanctuaries or other classified zones for mangrove ecosystems including as much as possible marine areas, including areas of future habitat suitability • N/A (iii) Support mangrove (ANR and/or direct), riverbank and coastal vegetation restoration interventions including the establishment of nurseries (in the Coastal Patch and the Patch of Porto-Novo Lagoon and Ouémé River, except So-Ava where preliminary research is needed) using the Practical Guide for the production and plantation of mangrove species in Benin and the experience generated through previous initiatives [international expertise needed for hydrological restoration, national and regional expertise should be sufficient for ANR] • Overall at least 50% of women will participate to the implementation of the on-the-ground interventions. (iv) Establish ecological corridor between the core mangrove sections (with both mangrove trees and fast growing species) particularly in Patch of Porto-Novo Lagoon and Ouémé River to increase the connectivity of mangrove sites • Overall at least 50% of women will participate to the implementation of the on-the-ground interventions.

		(v) Establish private and public woodlots – based on land availability – in areas surrounding mangrove ecosystems with species selected by local communities to address their demand for fuelwood and timber (based on the experience of EcoBenin, 2 ha of woodlots planted for each ha of mangrove restored) using improved seedling production and handling processes • Overall, at least 50% of women will participate to the implementation of the on-the-ground interventions. The beneficiaries of the woodlots on both private and public land will include – as much as possible – 50% of women. (vi) Support the adoption of improved soil management practices following an agroecology approach (including agroforestry, crop-rotation systems, mulching, production and use of natural pesticides and fertilisers such as compost, integrated food and energy systems, small-scale irrigation systems and water conservation) in the buffer zones and transition zones based on the experience of EcoBenin, Action-Plus, BEES, GIZ, AFD and FAO and building on existing structures (e.g. Agro Boots Camps of The Gardens of Hope, the National Network to promote AgroEcology - ReBPA) • Overall at least 50% of women will participate to the implementation of on-the-ground interventions. The beneficiaries of the agricultural interventions will include – as much as possible – 50% of women. This will be achieved by focusing on agricultural products that are generally grown by women. (vii) Support the establishment of nurseries and pilot restauration plots for indigenous plants with high-value medicinal properties • Overall at least 50% of women will participate to the implementation of the on-the-ground interventions. Particular attention will be given to the plants used by women and to conserving their knowledge and customs. (viii) Support the adoption of improved fishing practices and management (more selective fishing equipment and harvesting methods, reinforcement of traditional regulations that limit the number of days at sea...) • This activity will likely have more male participants, but support will be provided as much as possible to female fisherman. (ix) Support the reopening and maintenance of overgrown waterways in and around the mangroves for the circulation of small boats • N/A (x) Support conservation activities for threatened species (protection measures for sea turtle eggs and nurseries, manatee conservation interventions...) in alignment with the development of ecotourism interventions and based on the expertise of partner NGOs • Overall at least 50% of women will participate to the implementation of the on-the-ground interventions. (xi) Train women on improved techniques for salt extraction and processing (e.g. promotion of the production of clean energy salt combining solar and wind energy enabling women to produce salt without degrading mangrove ecosystems – suggestion from Teka et al. 2019) • This activity will likely have more female participants as salt production is mostly practiced by women.
1.1.5	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO, Operational partners and local government	(i) Provide administrative, financial and management training to ACCBs, APCs and other relevant CBOs • At least 50% of beneficiaries of the capacity building interventions will be women. (ii) Provide training on women leadership to CBO members and other interested women within the targeted communes • This activity focuses primarily on women, to increase their participation in decision making and in community life. (iii) Design a citizens' mangroves monitoring system and support ACCBs', APCs' and other CBOs' members in adopting relevant monitoring tools (e.g. SMART tool based on the experience of EcoBenin, GPSs and/or CollectMobile) to monitor and measure the efficiency of the restoration and conservation interventions and draw lessons learned on best practices

		• The presence and active participation of women during the design process will be a condition for the continuation of the process. This will ensure women ownership of the plans. (iv) Design and implement with local government institutions and in collaboration with ACCBs, APCs and other relevant CBOs a biomonitoring species that looks at: i) ecosystem regeneration, degradation and health; and ii) trend of mangrove species of high ecological and economic interest (e.g. *Rhizophora racemosa, Rhizophora harisonii, Avicennia germinans, Laguncularia racemosa, Accrostimum aureum* and *Conocarpus erectus*). • The participation of female staff members will be maximised. Gender equality in role repartition under the biomonitoring system will be required. (v) Design and implement a monitoring plan to ensure compliance to exploitation rules using a participatory approach with Forest Inspections, DPHs and ATDAs The participants of female staff members will be maximised.
2.1.1	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO, Operational partners, and local government	(i) Provide training in entrepreneurship and business plan development to interested community members in the mangrove landscapes – with a particular focus on youth and women – based on the experience of EcoBenin with the Entrepreneurship and Funding Programme for Youth • At least 50% of the beneficiaries of the capacity building interventions will be women. (ii) Support community members within the same value chain in organising themselves into cooperatives, strengthen existing cooperatives and support the grouping of cooperatives into clusters for the whole value chain where adequate, based on GIZ's experience with the coaching system (e.g. strengthen existing fishing cooperative through supporting registration processes and provide training in marketing in Sô-Ava, Abomey-Calavi and Sèmè-Kpodji) • Both mixed and women cooperatives will be supported towards achieving at least 50% of female members overall among the supported associations and cooperatives. (iii) Define a set of selection criteria and rating system to evaluate business plans for the development of sustainable nature-based economic activities, including as example: cost effectiveness, contribution/investment from the applicants, financial viability and sustainability, benefits for biodiversity and for mangrove conservation, number of benefitting members, and social and economic benefits for the overall community • Gender-sensitivity and benefits to women will be part of the selection criteria for the business plans. (iv) Support the trainees from Activity (i) in the development of a bankable business plan (preferentially as a group or association) following a learning-by-doing approach for the development or strengthening of sustainable nature-based economic activities • The submission of women-led business plans will be encouraged as much as possible. (v) Select the business plans to be supported by the project based on the set of criteria previously designed • At least 50% of the selected business plans will be led by women. (vi) Provide training to local government institutions, NGOs, CBOs and/or community champions on improved production/harvesting/processing techniques for them to: i) undertake the training activities for community members (using a training-of-trainers approach); ii) provide long-term support for the maintenance of the improved livelihoods; and iii) support outscaling of these techniques. • At least 50% of the beneficiaries of the capacity building interventions will be women.

		(vii) Establish the required financial support system based on the community needs and the experience of existing financial structures, and provide required training and equipment for the implementation of the selected business plans • This activity will focus on addressing the barriers faced by the targeted communities in accessing financial support. The specific barriers faced by women will be lifted as a priority under this activity.
2.1.2	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO, Operational partners and private sector	(i) Identify opportunities for the development of PPPs for the strengthening and long-term maintenance of agricultural, forestry, fisheries and/or ecotourism value chains development • N/A (ii) Identify the opportunities for the development of PES schemes based on GIZ's, BEES and EcoBenin's experience to increase private sector involvement in the protection of mangrove landscapes and their biodiversity • N/A (iii) Create and operationalise the selected PPPs • PPPs with women-led organisations will be encouraged as much as possible. (iv) Support EcoBenin in certifying the carbon credit project in La Bouche-du-Roi • N/A
2.1.3	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO, Operational partners including MAEP and private sector	(i) Train and support community members – particularly women – in the set up and management of AVECs or other adequate community-based finance systems to support the strengthening of climate resilient and biodiversity-friendly income sources • At least 50% of the beneficiaries of the capacity building interventions will be women. (ii) Create/strengthen and operationalise AVECs the community-based finance systems based on the experience of EcoBenin in the ACCB La Bouche-du-Roy, and provide required training in financial and administrative management (including for the existing AVEC in la Bouche-du-Roy) • The structure of the supported AVECs will be gender sensitive at all levels: decision-making and management structure, membership, access conditions and loan attribution. (iii) Train cooperative members and entrepreneurs in the development of projects eligible for existing government funds (e.g. : FNEC, FNDA, FADeC7) and establish collaboration agreements between AVECs and government funds where appropriate • At least 50% of the beneficiaries of the capacity building interventions will be women. The supported proposals will include at least 50% of women-led projects. (iv) Advocate for the allocation of increased human resources within the ATDA of MAEP to support agricultural producers in accessing financial opportunities such as FNDA • The allocation systems will be strengthened in such a way that it gives equal chances to male and female farmers.
3.1.1	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO, Operational Partners and government	(i) Refine the gap analysis of relevant national legal instruments and institutional arrangements pertaining to mangrove ecosystems management, and identify opportunities for improvements under the project • N/A (ii) Address identified priority gaps to improve the enabling conditions for integrated and sustainable management of mangrove landscapes • Every policy document supported under the project will be fully gender sensitive and support women well-being.

	institutions from all relevant sectors	(iii) Clarify DGEC and DGEFC's mandates in mangroves' landscapes management and refine decision-making and planning processes pertaining to mangrove landscape to ensure adequate participatory processes with local communities • The participation of female staff members will be maximised. (iv) Support local authorities in the inclusion of ACCBs', APCs and other CBOs' management plans in existing local development plans (PDCs and other administrative levels) • The participation of female staff members will be maximised. • (v) Support the development of a financing plan for the updated National Strategy and Action Plan for the sustainable management of mangrove ecosystems • N/A
3.1.2	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO and government institutions from all relevant sectors	(i) Undertake a three dimensional capacity needs assessment following FAO approach to identify gaps and weaknesses of key national and regional stakeholder groups in integrated and participatory processes for the sustainable management of mangrove landscapes as well as technical capacity gaps (primarily MCVDD's DGEC, DGEFC and ABE, MAEP's DPH and ATDA, MCAT, CENAGREF and other relevant organisations from Benin and neighbouring countries) • The capacity needs assessment will be gender sensitive, thereby taking into account any differences in the strengthens, weaknesses and needs of female and male staff. (ii) Develop and implement a capacity development plan based on identified gaps (study visits, research exchange programmes, training sessions...) • Equal participation to training sessions will be sought for both women and men. Female staff from government institutions will therefore be particularly encouraged to participate in the training. (iii) Identify and integrate local and tailored governance planning tools for bottom-up and participatory management of resilient mangroves and other relevant coastal landscapes • The government planning tools to be promoted by the project will be gender sensitive.
3.1.3	Project NPC, supported by M&E Officer, Gender Officer, MCVDD, FAO, Operational Partners and government institutions from all relevant sectors	(i) Design and implement a tailored gender-sensitive knowledge management strategy to capture and share lessons learned from the project and other relevant initiatives based on existing platforms such as the Collective of NGOs headed by EcoBenin "Collectif des Deltas du Golf du Benin" • The knowledge management strategy will be gender sensitive. Following an adaptive approach, it will be adjusted where necessary during the implementation period to ensure that men and women are reached equally. (ii) Design and implement national awareness-raising campaigns on the role and value of mangrove ecosystem and sustainable management opportunities • Any differences regarding the preferred media and events of men and women will be considered. The set of awareness raising tools to be developed will aim to reach 50% of women. The youth will also be strongly targeted. (iii) Organise regional knowledge sharing activities through the Collective of Benin's Gulf Deltas headed by EcoBenin on good practices for the sustainable management of mangrove landscapes (exchange visits) and building on the efforts of IUCN in creating a knowledge sharing platform on mangroves in the Mono Transboundary Biosphere Reserve under PAP-Bio project

		• The knowledge tools to be developed under the project will be gender sensitive. Women participation in these events will be maximised. (iv) Organise international knowledge sharing activities on good practices for the sustainable management of mangrove landscapes • The knowledge tools to be developed under the project will be gender sensitive. Women participation in these events will be maximised.
3.1.4	M&E Expert with support from the NPC, the Gender Officer, MCVDD and FAO	(i) Support the M&E officer in refining and implementing the project's M&E plan in collaboration with other PMU members, this includes clearly identifying the role of the team members and other project actors in data collection and ensuring that all required data is collected systematically and rigorously. • The M&E plan will be gender sensitive. (ii) Undertake the Mid-Term Evaluation • The gender sensitiveness of the project interventions will be evaluated under the MTR. (iii) Undertake the Final Evaluation • The gender sensitiveness of the project interventions will be evaluated under the Terminal Evaluation

4. Private Sector Engagement.

173. As previously mentioned, existing initiatives for private sector involvement in financing environmental protection include: i) PADAAM initiatives with the establishment of partnerships between women producing Cassava flour "Gari" in Comè and Kpomassé with local retailers; ii) EcoBenin carbon offset project to fund mangrove conservation and restoration in la Bouche-du-Roy; and iii) the partnership between CIMBENIN and BEES NGO on the "Reforestation project of the hedges of Sèmè-Podji lagoon and the Biosphere Reserve of the Lower Valley of Ouémé". Except for these few initiatives, private sector involvement in natural resources management and environmental protection has been limited in South Benin. Under Output 2.2, the project will identify and develop opportunities to attract financing from private companies to support the sustainable management of mangrove landscape. The opportunities to be investigated include the financial contribution of medium to large corporates in community-based conservation initiatives – through CSR for example – and approaching private tourism operators for their contribution to sustainable mangrove management using a PES approach.

174. Private sector actors such as retailers and exporters will be involved in the development of sustainable value chains under Output 2.1. MSMEs involved in the value chains to be selected in the agriculture, forestry and fisheries sectors will be engaged to identify opportunities for value chains strengthening based on the demand and gaps, and implement the priority interventions. PPPs will be developed between producer groups and private companies where necessary to officialise the role and engagement of each party in the functioning of the value chain thereby making it more robust and resilient.

175. Microfinance institutions will be involved in Component 2, which aims to increase access to financial support for local community groups. Microfinance institutions that support the development of communities' livelihoods – e.g. CLCAM and ASF – will be approaches at the project inception. Opportunities to address the difficulties faced by both financial institutions and potential applicants will be identified in a participatory manner with these institutions as well as community groups. Interested financial institutions will be supported by the project in implementing identified improvements. Banks such as ECOBANK, BOA, ORABANK and/or UBA might also be approached to assess their potential interest in supporting the adoption of sustainable, climate-resilient, biodiversity-friendly livelihoods.

5. Risks.

Section A: Risks to the project

Description of risk	Impact[95]	Probability of occurance[3]	Mitigation actions	Responsible party
Insufficient inter-institutional cooperation	M	M	Inter-institutional cooperation was identified as one of the barriers that the project needs to address. Several interventions have therefore been designed specifically to increase knowledge sharing and support integrated planning processes. The respective role of each institution in the management of mangrove ecosystems will be clarified, intersectoral collaboration will for knowledge sharing and consultative decision-making processes will be increased, and decision-making tools will be developed to facilitate inclusive processes (Output 3.1).	MCVDD/DGEFC
Climate change impacts on mangroves such as SLR, increased temperature and erratic rainfalls, and their effects such as increased salinity,	M	M	The consideration of current climate trends and future climate predictions are critical to the success of the project. ANR sites will be selected based on models of future habitat suitability according to different climate scenarios. These sites of future availability will be integrated as much as possible in the community-based management areas for mangrove conservation. The information available on mangrove resilience to SLR and increased	MCVDD/DGEFC EcoBenin, BEES and other partner NGOs

[95] H: High; M: Moderate; L: Low.

storms, floods and droughts.			salinity remains limited but it is increasing. It is now known for example that *Avicennia germinans* is more resilient to high salinity than *Rhizophora racemosa*. The latest knowledge available will be built on and the conservation and restoration activities will be designed based on the species-sites combinations presenting the highest chances of long-term success in each sub-site. Besides, research projects on species and ecosystem resilience will be launched under the project to address knowledge gaps to support the design of future climate-resilient restoration efforts.	
Limited interest or involvement by target communities in restoration/conservation activities and implementation of alternative livelihoods	H	L	Limited involvement of communities in decision making and unclear access to natural resources has led communities in some communes to become uninterested in projects. Previous initiatives that haven't had full support from local communities have had very limited success. Communities' interest in the projects' approach (in the adoption of sustainable nature-based livelihoods and/or in mangrove conservation) was included as one of the criteria for the selection of the intervention sites and definition of the selection of the interventions during the PPG phase. Communities' motivation and ownership of the project interventions will be a precondition for their implementation in each site as it is a condition for success. Communities' active participation and input during the inception meetings and participatory decision-making processes at the beginning of the project will enable to confirm communities' interests in the project. The expected financial benefits from the strengthening of sustainable nature-based value chains will enable to maintain communities' motivation to protect mangrove ecosystems in the long term.	MCVDD/DGEFC EcoBenin, BEES and other partner NGOs
Some community members do not comply to the legislation/ frameworks/ decrees/ guidelines and exploit natural resources such as mangrove wood unsustainably	M	M	The design of the project considered lessons and best practices on behavioral change in the project intervention areas, therefore bringing concrete solutions to overcome the stated risk. Local decrees supporting the application of national law will be developed where required to increase the enforcement efficiency of local authorities. Information on the preferred practices as identified under the management plans will be disseminated widely to people from the targeted communes and neighbouring communes using a diversity of communication material and events. In addition, community leaders (religious leaders, traditional leaders, youth leaders...) will be closely involved in every step of the project implementation. They will have an essential role in identifying measures to support the adoption of good practices and the cessation of detrimental practices. Because of their influence, their support of the project is critical as it is expected to facilitate communities' compliance to the local regulations.	MCVDD/DGEFC
The occurrence of another lockdown period because of COVID19 or other pandemic delays the	L	M	Safety measures will be put in place for all individual and group meetings. The budget for each training session and awareness-raising event includes adequate funds to implement necessary security measures throughout the project implementation period (e.g. sanitation tools,	MCVDD/DGEFC FAO

implementation of the project			renting of adequately equipped, spacious and aerated venues. Virtual meetings will be convened whenever necessary at the central level. Permits to continue on-the-ground interventions during critical stages at the local level will be organized if necessary while ensuring the safety of the project staff, community members and partners. It is expected that as the project focuses largely on local stakeholders, a temporary shift in government priorities in the occurrence of a new health crisis should not have a dramatic effect on the project implementation.	
The occurrence of another lockdown period because of Covid-19 or other pandemic stops the importation and exportation of goods and material	L	M	Resilience building under the project includes strengthening value chains in such a way that they are less dependent on external resources. The resources used for production will be essentially available locally and the products will be aimed for local and national markets. Regarding ecotourism, a lockdown period would have a negative impact on international tourism, the project interventions will therefore also look into attracting tourists from other part of the country and neighbouring countries.	MCVDD/DGEF EcoBenin, BEES and other partner NGOs
National, regional and/or global measures to contain impacts from pandemics (such as Covid-19) and their repercussions on availability of technical expertise	L	M	To overcome concerns in mobilizing the technical expertise to support project implementation and specific studies, the project will work as much as possible with locally rooted organizations. Several NGOs that work locally have been identified for their experience in certain geographies and the complementarity of their skills. If some specific areas of expertise that are unavailable nationally (e.g. hydrological restoration) are required, expertise in other West African countries will be identified using the existing NGOs' collectives, or if unavailable in these networks, international expertise will be used. Virtual consultations will be organized were necessary with regional and international experts.	MCVDD/DGEFC
Social dynamics make it difficult to reach the target of having 50% of direct beneficiaries who are women.	M	M	Multiple activities to support women engagement have been integrated in the project. They include training on leadership, focusing on income-generating activities that are practiced primarily by women, and organizing awareness-raising and consultation activities for women specifically in alignment with their routine and preferred gathering activities, among others.	MCVDD/DGEFC

Section B: Environmental and Social risks from the project – ESM Plan

Risk identified	Risk Classification	Mitigation Action (s)	Indicator / Mean(s) of Verification	Progress on mitigation action
ESS #1 Natural Resources Management *Negative impact on land tenure/access rights (the country lacks a land tenure*	Moderate	The project considers resource tenure security and governance as a game-changer in its sustainability pathway. It is therefore designed to adhere to the principles/framework of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT). Also, it is designed to avoid, and when avoidance is not possible, minimize adverse social and	# An operational stakeholder engagement plan to mobilise and engage local stakeholder groups in mangrove ecosystem management planning, implementation and monitoring	Monitored during all the implementation

regime that protects the rights of communities over forests: definition of customary land rights, benefit-sharing mechanisms for communal forests, conflict resolution, etc.)		economic impacts from restrictions on land or resource use or from land and resource acquisition. It will through investment improve or at least restore living conditions of persons who are physically or economically displaced, through improving and restoring their productive assets and security of tenure.	# Mangrove landscapes and area (ha) under integrated management plans developed/updated involving local stakeholders (ACCBs and APCs), including from agriculture, forestry and fishery sectors # Number of awareness-raising events and tools designed and organised/disseminated by local awareness-raising platforms	
ESS#2. Biodiversity, Ecosystems and Natural habitats *-Negative impact on protected area, buffer zone or natural habitats* *- Unregulated access and benefit sharing for genetic resource*	Moderate	The project intervention landscape comprise areas have been designated as Wetlands of International Importance (RAMSAR site #1017 & RAMSAR site #1018) along Benin's coastline. • Mangrove landscapes' integrated management plans will be implemented to promote innovative and integrated technologies and approaches in the agriculture, forestry and fisheries sectors that contribute to ecosystem restoration, resilience and sustainability • The project will harness the opportunity of using traditional knowledge on native species in the agroforestry and reforestation activities. Therefore, the project has a solid bottom-up approach for its planning, implementation and monitoring. Also, the project will (i) ensure, in accordance with applicable domestic law, that knowledge is accessed with the prior and informed consent or approval and involvement of these indigenous and local communities, and that mutually agreed terms have been established; and (ii) ensure that, in accordance with domestic law, benefits arising from the utilization of traditional knowledge associated with genetic resources are shared, upon mutually agreed terms, in a fair and equitable way with indigenous and local communities holding such knowledge. Ensure that the project is aligned with the Elements to Facilitate Domestic Implementation of Access and Benefit Sharing for Different Subsectors of Genetic Resources for Food and Agriculture when it is the case.	Area of landscapes in the vicinity of Ramsar sites under improved management to benefit biodiversity and control the expansion of invasive species and encroachment on the land estates of sacred forests and area under conservation # of crops and varieties per crops conserved and exchanged through Community Seed Banks system. # people benefiting from women benefit from increased productivity thanks to climate resilient technologies and - regulated access and benefit sharing for genetic resource	In the first 3 months of project execution, once the exact sites will be selected, project team will be responsible for finalizing the site specific Environmental and Social Impact Assessment before any investment is made into the landscape. Monitored during all the implementation

ESS #3 Plant genetic resources for food and agriculture *-Negative impact of the provision of seed and planting materials*	Moderate	Due diligence will be applied before any intervention involving procurement of seed and planting material. In particular, the project will: • Avoid undermining local seed & planting material production and supply systems through the use of seed voucher schemes, for instance • Ensure that the seeds and planting materials are from locally adapted crops and varieties that are accepted by farmers and consumers • Ensure that the seeds and planting materials are free from pests and diseases according to agreed norms, especially the IPPC • Internal clearance from AGPMG is required for all procurement of seeds and planting materials. Clearance from AGPMC is required for chemical treatment of seeds and planting materials • Clarify that the seed or planting material can be legally used in the country to which it is being imported • Clarify whether seed saving is permitted under the country's existing laws and/or regulations and advise the counterparts accordingly. • Ensure, according to applicable national laws and/or regulations, that farmers' rights to PGRFA and over associated traditional knowledge are respected in the access to PGRFA and the sharing of the benefits accruing from their use.	# Area of landscapes under improved management to benefit biodiversity and control the expansion of invasive species. # of smallholder farming households who are applying sustainable agricultural intensification and diversifying their production. # of crops and varieties per crops conserved and exchanged through established Community Seed Banks sharing mechanisms. # of training beneficiaries (management of seed conservation, small-scale seed production and climate change adaptation strategies. # Lessons learnt / Recommendations produced on policy and legal environment in relation to access and benefit-sharing	Monitored during all the implementation
ESS#4 Animal (Livestock and aquatic) genetic resources for food and agriculture *-Modification of habitats*	Moderate	The project intervention sites will comprise areas have been designated as Wetlands of International Importance (RAMSAR site #1017 & RAMSAR site #1018) along Benin's coastline. However, the project's intent is to manage production land in the sites to conserve BD and ecosystem health, recognizing the cause of its degradation is agriculture encroachment and unsustainable practices. Furthermore, the project will: • Fully consider and align to the management plans of the sites • Work with communities to ensure the BD and ecosystem values are fully comprehended and management plan is adhered to • Provide alternatives to communities that are currently unsustainably harvesting goods and services from the sites • Initiate and put forward efforts of sacralisation of mangrove areas (documented successful approach to conservation) and delineation,	# of functioning and autonomous ACCBs, APCs and other relevant CBOs # of participatory monitoring and bio-monitoring systems established and operational	Monitored during all the implementation

		effectively expanding the ecosystem and connecting isolated stands • Work with communities to demonstrate and upscale sustainable agriculture, forestry and fishery practices		
ESS#7 Decent work *-Negative impact on creation of better employment opportunities, especially for youth and women*	Moderate	The project has budgeted for: • Appropriate action to anticipate the likely risk of perpetuating poverty and inequality in socially unsustainable agriculture and food systems. • Decent work and productive employment to appear among the priorities of the project or, alternatively, the project should establish synergies with specific employment and social protection programmes e.g. favouring access to some social protection scheme or form of social insurance. • Specific measures and mechanisms introduced to empower in particular the most vulnerable /disadvantaged categories of rural workers such as small-scale producers, contributing family workers, subsistence farmers, agricultural informal wage workers, with a special attention to women and youth who are predominantly found in these employment statuses. Some mitigation actions are planned. • The project will have a gender including youth action plan to ensure all categories are benefiting from the interventions. • The project will tailor some interventions and set up business plan to ensure its actions are rewarding for youth. • The project will implement gender tailored action to ensure access to productive resources by all. • All communication tools and sensitization will be gender sensitive.	# Decent work and full and productive employment created through rural entrepreneurship in the agri-food system to achieving food security and reducing poverty. It is anchored in FAO's vision for sustainable food and agriculture, which explicitly prioritizes decent work. "Decent Work" is defined as per ILO as "productive work for women and men in conditions of freedom, equity, security and human dignity." # Number of people benefit from increased income thanks to climate resilient alternative livelihoods	In the first 3 months of project execution the project team will be responsible for undertaking a situation analysis of employment and decent work in the selected landscape. Monitored during all the implementation

6. Institutional Arrangements and Coordination.

6.a Institutional arrangements for project implementation.

176. DGEFC from within the MCVDD will have the overall executing and technical responsibility for the project, with FAO providing oversight as GEF Agency as described below. DGEFC will act as the lead executing agency and will be responsible for the day-to-day management of project results entrusted to it in full compliance with all terms and conditions of the Operational Partnership Agreement signed with FAO. As OP of the project, DGEFC is responsible and accountable to FAO for the timely implementation of the agreed project results, operational oversight

of implementation activities, timely reporting, and for effective use of GEF resources for the intended purposes and in line with FAO and GEF policy requirements. The project management structure is presented in Figure 4.

177. It should be noted that the identified Operational Partner (OP), the results to be implemented by the OP, and the budgets to be transferred to the OP, are non-binding and may change due to FAO internal partnership and agreement procedures which have not yet been concluded at the time of submission of this funding proposal.

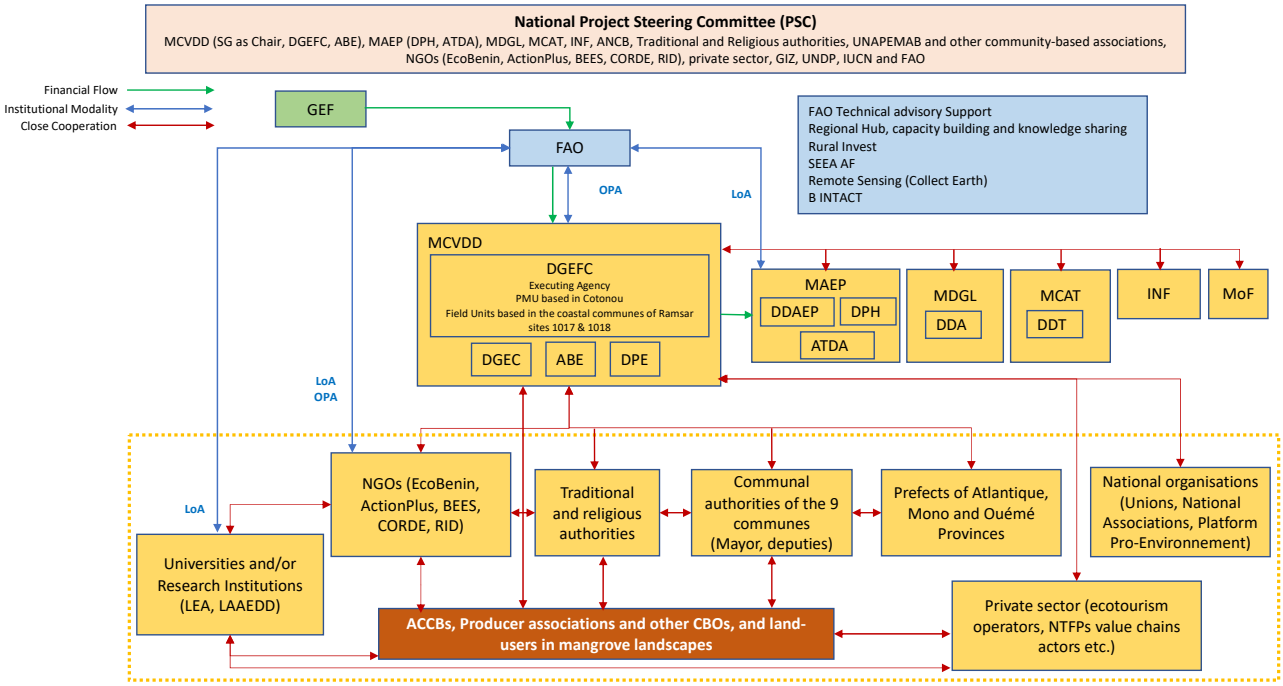

Figure 4: Proposed institutional arrangements structure

National Project Director

178. The government will designate a National Project Director (NPD). Located in DGEFC offices, the NPD will be responsible for coordinating the activities with all the national bodies related to the different project components, as well as with the project partners. S/he will also be responsible for supervising and guiding the Project Coordinator (see below) on the government policies and priorities.

Project Steering Committee

179. The NPD will chair the PSC which will be the main governing body of the project. The PSC will approve Annual Work Plans and Budgets on a yearly basis and will provide strategic guidance to the Project Management Team and to all executing partners. The PSC will be comprised of representatives from MCVDD (General Secretary, DGEFC, ABE), MAEP (DPH, ATDA), MDGL, MCAT, National Women Institute (INF), Communal authorities, Traditional and Religious authorities, National Union of small-scale Fisherman in Benin (UNAPEMAB) and other community-based associations, NGOs (EcoBenin, ActionPlus, BEES, CORDE, RID), private sector, GIZ, UNDP, IUCN and FAO.

180. The members of the PSC will each assure the role of a Focal Point for the project in their respective agencies. Hence, the project will have a Focal Point in each concerned institution. As Focal Points in their agency, the concerned PSC members will: (i) technically oversee activities in their sector; (ii) ensure a fluid two-way exchange of information and knowledge between their agency and the project; (iii) facilitate coordination and links between the project activities and the work plan of their agency; and (iv) facilitate the provision of co-financing to the project.

181. The NPC will be the Secretary to the PSC. The PSC will meet at least twice per year to ensure: i) Oversight and assurance of technical quality of outputs; ii) Close linkages between the project and other ongoing projects and programmes relevant to the project; iii) Timely availability and effectiveness of co-financing support; iv) Sustainability of key project outcomes, including up-scaling and replication; v) Effective coordination of government partner work under this project; vi) Approval of the six-monthly Project Progress and Financial Reports, the Annual Work Plan and Budget; vii) Making by consensus, management decisions when guidance is required by the NPC of the PMU.

Project Management Unit

182. A PMU will be co-funded by the GEF and established within DGEFC central offices in Cotonou. The main functions of the PMU, following the guidance of the PSC, are to ensure overall efficient management, coordination, implementation and monitoring of the project through the effective implementation of the annual work plans and budgets (AWP/Bs). The PMU will be composed of (Figure 5):

- The full-time NPC based at DGEFC's central office in Cotonou;
- A full-time Financial and Administrative Officer based at DGEFC's central office in Cotonou;
- Three Field Assistants to the NPC, one per mangrove patch;
- A full-time Monitoring & Evaluation Expert based at DGEFC's central office in Cotonou;
- A part-time Communication Expert based at DGEFC's central office in Cotonou; and
- A part-time Gender Officer based at DGEFC's central office in Cotonou.

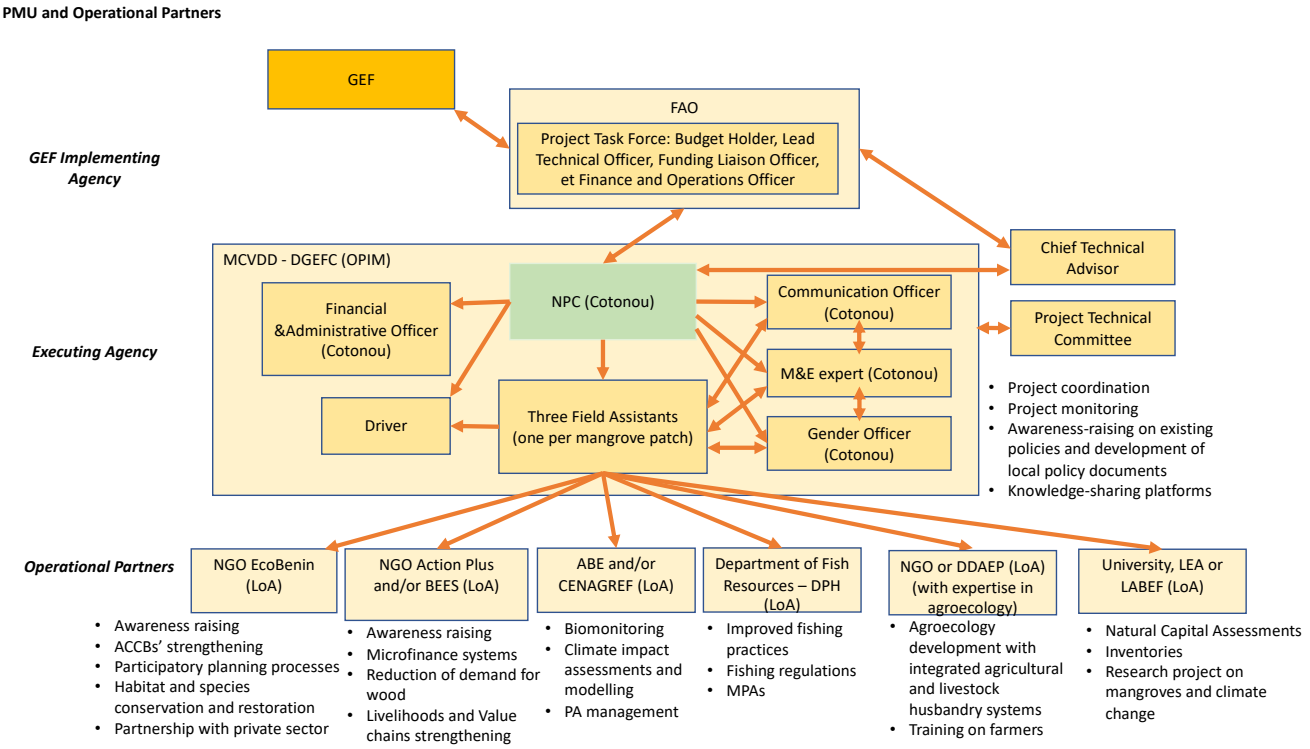

Figure 5: Proposed PMU structure

National Project Coordinator

183. The NPC will be in charge of daily implementation, management, administration and technical supervision of the project, on behalf of the Operational Partner and within the framework delineated by the PSC. S/he will be responsible, among others, for:

- coordination with relevant initiatives;
- ensuring a high level of collaboration among participating institutions and organizations at the national and local levels;
- ensuring compliance with all Operational Partner Agency (OPA) provisions during the implementation, including on timely reporting and financial management;
- coordination and close monitoring of the implementation of project activities;
- tracking the project's progress and ensuring timely delivery of inputs and outputs;
- providing technical support and assessing the outputs of the project national consultants hired with GEF funds, as well as the products generated in the implementation of the project;
- approve and manage requests for provision of financial resources using provided format in OPA annexes;
- monitoring financial resources and accounting to ensure accuracy and reliability of financial reports;
- ensuring timely preparation and submission of requests for funds, financial and progress reports to FAO as per OPA reporting requirements;
- maintaining documentation and evidence that describes the proper and prudent use of project resources as per OPA provisions, including making available this supporting documentation to FAO and designated auditors when requested;
- implementing and managing the project's monitoring and communications plans;
- organizing project workshops and meetings to monitor progress and preparing the Annual Budget and Work Plan;
- submitting the six-monthly Project Progress Reports (PPRs) with the AWP/B to the PSC and FAO;
- preparing the first draft of the PIR report;
- supporting the organization of the mid-term and terminal evaluations in close coordination with the FAO Budget Holder (BH) and the FAO Independent Office of Evaluation (OED);
- submitting the OP six-monthly technical and financial reports to FAO and facilitate the information exchange between the OP and FAO, if needed;
- inform the PSC and FAO of any delays and difficulties as they arise during the implementation to ensure timely corrective measure and support.

184. To assist coordination, a national Project Technical Committee (PTC) will be established. Membership of this PTC will include experts from MCVDD, MAEP, NGOs, FAO and other technical experts. The role of the PTC will be: (i) to review and comment on workplans and terms of reference; (ii) to mobilize stakeholders and resources to project activities; (iii) to review and comment on draft outputs and; (iv) to share information and facilitate joint planning of activities. The PTC will be supported by a PMU, and one staff member will be responsible for supporting

Implementing Agency: FAO

185. FAO will be the GEF Implementing Agency (IA) for the Project, providing project cycle management and support services as established in the GEF Policy. As the GEF IA, FAO holds overall accountability and responsibility to the GEF for delivery of the results. In the IA role, FAO will utilize the GEF fees to deploy three different actors within the organization to support the project (see Annex J for details):

Position	Description	Contact Information
Budget Holder	Usually the most decentralized FAO office, will provide oversight of day-to-day project execution.	FAO Representative in Benin Angue Obama, Isaias
Lead Technical Officer	Drawn from across FAO will provide oversight/support to the projects technical work in coordination with government representatives participating in the PSC.	Senior Forestry Officer, Sub-Regional Office SFW, Savadogo Patrice

Funding Liaison Officer	Within FAO will monitor and support the project cycle to ensure that the project is being carried out and reporting done in accordance with agreed standards and requirements.	Natural Resources Officer, GEF Coordination Unit, OCB, Veyret-Picot, Maude

186. FAO responsibilities, as GEF agency, will include:

- Administrate funds from GEF in accordance with the rules and procedures of FAO;
- Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers, Operational Partners Agreement(s) and other rules and procedures of FAO;
- Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned;
- Conduct at least one supervision mission per year;
- Reporting to the GEF Secretariat and Evaluation Office, through the annual PIR reports, the MTR, the Terminal Evaluation and the Project Closure Report on project progress; and
- Financial reporting to the GEF Trustee.

6.b Coordination with other relevant GEF-financed projects and other initiatives.

187. Several projects were developed and implemented to support the sustainable management of forests and coastal ecosystems, and increase resilience to climate change in southern Benin. A list of the most relevant past and ongoing projects is provided below.

Project name	**Financing, partners, implementation period, co-financing**	**Objectives**	**Barriers overcome and link to objective of FAO-GEF project**
Restoration of mangroves ecosystems at Ramsar site 1017 in Benin	USD 369,000 FAO 2014-2017	The objective of this three-year TCP was to address challenges faced by mangrove ecosystems, through strengthening institutions, implementing biodiversity protection pilot activities and strengthening knowledge on mangrove ecosystems.	The TCP project has provided a large amount of information on the mangrove ecosystems in Ramsar site 1017 which have informed the design of the GEF-funded project. The interventions will build-upon key outputs of the TCP such as an inventory of flora and fauna species in the Ramsar site, the National Strategy and Action Plan for the sustainable management of mangrove ecosystems 2020, and a report on non-timber forests products.
Transboundary Biosphere Reserve in the Mono Delta (RBT-Mono) Administrative Authority for the Biosphere in Benin: CENAGREF	BMU/GIZ 2014-2019 EUR 7,500,000 Supported by GIZ, GmbH and implemented in collaboration with MCVDD	The project aimed to protect natural resources, particularly biodiversity, and promote natural resources use in a sustainable manner across the Mono Delta, shared between Benin and Togo. The project identified particularly valuable areas in the delta and ways to protect them as core zones. It also piloted sustainable management practices in the buffer zones (forests, rivers and fields) of these core zones. This is all explained in the National Strategy and Action Plan for the Sustainable Management of Mangrove Ecosystems developed under the project and published in 2010. The project had an important capacity development component, providing training to conserve resources and set up management structures of the natural resource base (i.e. ACCBs). Several protected areas have been created, management committees were established and zoning plans defining utilisation rules in each zone were developed under the project – including Community-based Conservation Areas. As an	The GEF project will capitalize on the recognition of the Mono Delta as a UNESCO Man and the Biosphere area to promote, among others, ecotourism and mangrove conservation and restoration activities. The GEF project will work with co-management structures already put in place by the Biosphere project. EcoBenin has continued working with some of the ACCBs after the project ended. The GEF-funded project was designed based on the experience of the RBT-Mono project in establishing Community-based Protected Areas and in protecting mangrove core areas through sacralisation. In addition, the interest of local communities in improved agricultural practices using less pesticides was confirmed

		example, the Bouche-du-Roi ACCB was created under the project. The RBT-Mono project used sacralisation processes for the protection of core areas. Regarding agricultural activities, the project worked around several lakes to address the issue of pesticides being intensely used in the area. An NGO was appointed to propose free training in 20 villages on improved practices with a very limited budget. The demand was high as the farmers were interested in reducing the cost of agricultural inputs that they have to use to maintain productivity.	during the RBT-Mono project, which is the reason why a significant portion of the budget was allocated to the development of sustainable agricultural practices to reduce the use of chemicals in the proposed project. The GEF-funded project will contribute to sustaining the investments of the RBT-Mono project by adding value to the reserve through ecotourism development, strengthening ACCBs, APCs and CENAGREF (who is in charge of managing the reserve), and ensuring adequate consideration of climate change and biodiversity in the planning processes for the sustainable management of mangrove ecosystems.
Small Grant Programme	MCVDD supported by United Nations Development Programme / GEF Continuous	Various small grants programmes have been provided across southern areas of Benin.	The proposed project will build upon lessons learned from some projects that addressed the barriers listed above (e.g. improved fireplaces provision as a mean to reduce pressure on forests ecosystems, alternative salt production techniques and sacralization of local forests).
Strengthening resilience to climate change of coastal communities in Togo (GEF LDCF project)	FAO 2022-2026 USD 8,932,420	This project aims at strengthening collaboration of fisheries, forestry, livestock and agricultural sectors in a context of climate change. Some activities will take place in coastal zones and are particularly relevant to the proposed project (e.g. climate-proofing of natural ecosystems and introduction of diversified livelihoods, among others). As examples of GEF-LDCF Togo project's interventions which are particularly aligned to the proposed project, under Output 3.1.1, support will be provided to acquire equipment to improve the processing and marketing of fishery products, such as more efficient kilns for fish smoking and drying such as the FAO Thiaroye Processing Technique (FTT). Under Output 3.1.4, the project will support the establishment and operation of a committee (fishermen) to control and monitor the mesh size of gear and the catches landing at the Lomé fishing port. In the same line, support will be provided to support the organisation and structuring of the fish inter-branch organisation.	Early lessons and feedback from each project will inform the implementation of the other. As proposed in the project knowledge management strategy, a two ways flow of information between the two projects will ensure complementarity of the similar initiatives and will allow building synergies where appropriate.
Investments Towards Resilient Management of Guinea Current Large Marine Ecosystems Project (GEF project ID: 9906)	GEF6/World Bank Ministry of Urban Planning, Habitat and Sanitation 2018-2023 USD 20,000,000	This GEF-funded project is embedded into the West Africa Coastal Areas Resilience Investment Project. The GEF support to the WACA programme focuses on three countries: Benin, Togo, Sao Tome & Principe. Ouidah and Grand Popo are part of the pilot sites selected in the project. The interventions include the establishment of green infrastructures, and the restoration and stabilisation of coastal ecosystems (flood banks) with a particular focus on wetlands and mangroves. It complements the WACA project by focusing on the incremental costs to achieve transboundary and global environmental benefits. Specific interventions of particular interest to the proposed project include: i) participatory tree planting in the Chenal de Gbaga and the surrounding water catchment; ii) adoption of sustainable land management practices (e.g. intercropping practices, agroforestry, improved soil management techniques); and iii) introduction of	The lessons learned from the project interventions will inform the design of the management plans and the restoration interventions under Output 1.3.

		alternative income generating activities that discourage agricultural expansion (e.g. bee keeping, eco-tourism) and encourage the development of value chains in key sectors (e.g. agriculture, fisheries, aquaculture, livestock).	
Sustainable Forest Management and Conservation Project in Central and South Benin	GEF Trust Fund Implemented by the African Development Bank 2020-2024 USD 2.627,226	This project aims at supporting efforts in creating and upscaling national protected areas in Benin with improved management effectiveness and will support the implementation of sustainable forest management plans. The project will also support the adoption of innovative technologies and management practices for GHG emission reduction and carbon sequestration to promote the conservation and enhancement of carbon stocks in Benin central and south forests.	The proposed project will build on the experiences gained designing and implementing sustainable forest management plans to design and implement the integrated mangroves management plans.
Mangrove restauration, conservation and sustainable management under climate change in Costa Rica and Benin	FFEM 2018-2022 USD 1,270,000	The objective of the project is to implement a complete ecological restoration programme over 31 hectares of mangroves in three sites in Costa Rica and 30 hectares in Ouidah in Benin. It will use the principles of ecological restoration from Mexico which use hydrodynamic models and water quality analysis.	A continuous communication stream will be established with the FFEM project to ensure that the GEF-funded project benefits for the latest information available from the restoration techniques tested in Ouidah to inform the design of the restoration interventions under the GEF-funded project.
Project for the Management of Mangroves from Senegal to Benin[96] (**PAP-Bio**) - under MACO (linked to WACA and UE's BIOPAMA programme)	European Union Implemented by IUCN, Wetlands International Africa et Collective 5Deltas (with support from Kinomé) 2019-2024 Budget: USD 10 million for 9 countries	Pap-Bio was signed in July 2019. It focuses on the management and protection of mangroves ecosystems in the Mono Transboundary Biosphere Reserve. https://www.subventions-mangroves.org/Projet It is based on a baseline study called PRCM-Wetland-UICN and focuses on: • strengthening the local initiatives of 5Deltas and Wetland International and build capacity of local organisations and authorities, this includes the creation of a collaborative of Civil Society organisations headed by EcoBenin based on the 5Delta model. This collaborative aims to provide technical support and facilitate access to funding for the members. • habitat restoration; • financial support for equipment, training and small initiatives; • and knowledge generation and strengthening of the MOLOA observatory – that is currently being established and will be led by the Centre for Ecological Monitoring (CSE) in Senegal – to improve the design and monitoring of national and regional policies In May 2021, the progress was: • 3 subventions allocated for 2 years in the Biosphere reserve (one or two more planned in Benin before the end of the project); • the ACCBs established under the GIZ project (7 ACCBs in Benin) will be strengthened, they are currently working with CORDE in Ouidah and EcoBenin in Grand-Popo to do so; and • supporting income-generating activities: crop production without pesticides, aquaculture, bee-keeping and small-scale livestock husbandry. Other activities planned under PAP-Bio include: • Strengthening the policy framework for the biosphere reserve in Benin and Togo as it is not yet been officialised through policies; and	The GEF-funded project will directly build on the investments of Pap-Bio linked to ACCBs strengthening in the RBT-Mono, ecosystem restoration and increased regional collaboration.

[96] Projet de Gestion des forêts de mangroves du Sénégal au Bénin

		• establishing landscape-level consultative platforms for mangrove management (One platform already exist in Ouidah, it will be extended to the RBT in both countries).	
Project for the monitoring of coastal risks and soft solutions in Benin, Senegal and Togo	FFEM/CSE (Dakar) 2018-2022 USD 1,300,000	This project is supported by IUCN MACO which provide technical assistance and funds a project manager. One of the objectives of the project is to increase collaboration between countries and knowledge sharing on good practices for mangrove conservation and management through strengthening and support the operationalisation of the MOLOA. In Benin, the project focuses on the Mono river mouth in Grand Popo to pilot the implementation of soft adaptation interventions to coastal risks to complement the hard infrastructures funded by WACA. With a budget of USD 260,000, these soft interventions include: • mangrove restoration (in collaboration with the FFEM project in Costa Rica and Benin) and implemented by CORDE NGO and the Grand Popo Commune; • awareness-raising interventions; and • the construction of small, individual infrastructure for protection against floods (e.g. shelter zone, micro-dikes in Avlo Village).	The investments and lessons learned from the project implementation in Grand Popo will be complemented and build on under the GEF-funded project. The regional collaboration and knowledge sharing interventions supported under the FFEM project will be complemented and sustained under Component 3 of the GEF-funded project.
West Africa Biodiversity and Climate Change (WA-BiCC)	USAID 2015-2020 USD 48,900,000	The WA-BiCC project supported the adoption and monitoring of the additional protocol of the Abidjan Convention. It provided technical assistance to the Environmental Department of Economic Community of West African States (ECOWAS).	The interventions funded by WA-BiCC have reinforced regional collaboration which will be further strengthened under Component 3.
Strengthening the Resilience of Rural Livelihoods and Sub-National Government System to Climate Risks and Variability in Benin	GEF-LDCF UNDP 2017-2021 USD 6,000,000	This project focused on building greater awareness and technical knowledge of climate change impacts at the government level. The interventions included the restoration of depleted natural resources through resilient livelihoods and large-scale investments in climate-resilient agricultural infrastructure.	The proposed project will use the lessons learned from the UNDP project to design the agricultural interventions under the integrated management plan. It will complement institutional strengthening efforts under the UNDP project by further enhancing inter-institutional coordination pertaining to mangrove ecosystems management and further building technical capacity to undertake the restoration and conservation of mangroves as an ecosystem-based adaptation strategy. The alternatives livelihoods that the proposed GEF-funded project will identify and implement will be informed by lessons learned from resilient livelihoods implemented by this project.
Project for the Development of a low-carbon local economy in the mangrove areas of South Benin ("Mangrove Economy Project")	2020-2024 EcoBenin and Action Plus Euro 150,000	This project focuses on improving communities' livelihoods and increasing their resilience in Grand-Popo, Comè and Kpomassé through the development of a resilient economy (promoting agroecology and improved fishing practices) that integrates the restoration, protection and value addition to mangroves. The targets of the project include inter alia: i) the storage of 1,200 Tonnes of CO_2 per year; ii) training 60 youth in entrepreneurship and 12 eco-advisors in local government institutions; iii) the restauration of 85 hectares of mangroves; iv) the development of tourism routes; and v) the establishment of agrotouristic farms.	The proposed project will use the lessons learned from the Mangrove Economy project and replicate successful interventions in agroecology development, ecotourism and agrotourism development, mangrove restoration, training in entrepreneurship, and improved fishing practices in other sites of the coastal area.
Soil Protection and Rehabilitation to improve food	GIZ 2014-2017	The objective of PROSOL was to support the implementation of sustainable approaches for soil protection and rehabilitation in five countries:	The technical guidelines applicable in the targeted area will be used to support the development of

security (PROSOL project)		Benin, Burkina Faso, Ethiopia, India and Kenya. The PROSOL project has produced a set of valuable guidelines for the adoption of improved natural resources management practices. This includes technical guidelines to: improve soil fertility (e.g. through the use of cover leguminous plants and cover crops, produce and use organic compost and manage agricultural inputs).	improved agricultural practices in the mangrove landscapes.
Carbon Storage Analysis Project in Ramsar site 1017	Funded by Dutch Ministry of Foreign Affairs and Ecosystems Alliance project EcoBenin	The project focuses on assessing the potential of the mangrove area in La Bouche-du-Roi in attracting private sector investments through the carbon credits market.	The GEF-funded project will support EcoBenin in finalising this assessment in alignment with the analysis of sustainable financing sources.

188. These projects have provided valuable information that was used for the design of the GEF-funded project and that will continue to inform the design of the interventions during the inception phase. As an example, EcoBenin has tested several approaches to replanting interventions in mangrove areas around Lake Ahémé which has highlighted that the most successful approach is community-lead interventions. The ACCB system seems to function well in La Bouche-du-Roi, and a similar model (e.g. ACCBs, APCs and/or other relevant CBOs) will therefore be replicated in other mangrove areas under the GEF-funded project. Several restoration interventions have been unsuccessful. A diversity of causes were mentioned included inadequate management of seedlings in the nurseries, deterioration of the seedlings during transportation and inadequate selection of the planting sites among others. In addition, a common weakness to previous restoration interventions was inadequate monitoring, which is the reason why two complementary, long-term monitoring systems involving both the government and local communities will be supported under the project. Another lesson learned is that beekeeping is not adapted to the area as several previous initiatives have attempted to develop this livelihood and have been unsuccessful. Beekeeping was therefore excluded from the project. Finally, the development of alternative sources of energy (i.e. solar) to mangrove wood for salt production has had limited success because of a low uptake by local communities. Therefore, the project has allocated resources to identify the social dynamics and barriers to alternative sources of energy, and potential solutions, before investing in such technologies.

7. Consistency with National Priorities.

189. The proposed project is fully consistent with the national development programmes and sectoral plans pertaining to the environment and sustainable development that have been adopted by the Government of the Republic of Benin, as well as with the various programmes and action plans formulated by the Beninese Government under the relevant international Environmental Conventions.

190. The proposed project is in direct conformity with the following national strategies and development programmes:

- Government Action Programme (2021-2026). The programme has 3 main pillars and underlying strategic axis and actions. Axis 7 focuses on “the balanced and sustainable development of the national territory” and includes an action aiming at “strengthening environmental preservation and climate change resilience”.
- The National Development Plan (NDP) 2018-2025 include as a strategic objective (3.6.3) to ensure a sustainable development and quality of life, a sustainable environment and the emergence of regional hubs. Components 1 and 2 of the proposed project will contribute directly to such objectives. The NDP promotes inter alia “natural capital valorization” and “strengthening of climate-change resilience”, to which the project will directly contribute.
- The Low Carbon and Climate-Resilient Development Strategy (2016-2025) includes as main directions to strengthen the resilience of local communities’ agricultural production systems (Pillar 1) and to reduce climate risks in order to reduce communities’ vulnerability to natural disasters and climate-borne diseases (Pillar 3). Sub-programme 5 aims to strengthen carbon sinks and reduced carbon emissions linked to deforestation and forest degradation. The proposed project will fully contribute towards the achievements of these objectives.

191. The project will contribute towards implementing the following national strategies:

- The National Strategy and Action Plan for the Sustainable Management of Mangrove Ecosystems in Benin developed in 2020.
- Political Note on the LDN targets (2017) caters for the preservation of terrestrial and water ecosystems for a net improvement of land cover of 12% by 2030.
- Benin's National Capacity Self-Assessment (NCSA) was prepared in 2008. It warned about the strong depletion of mangroves and identified agriculture and biodiversity as among the most vulnerable sectors to the impacts of climate change that must be focused on.
- Benin's National Adaptation Plan of Actions (NAPA) has been submitted in 2008. It identified coastal erosion as a major environmental issue in the country and lists coastal areas, forestry and agriculture as sectors that will be the most affected by the impacts of climate change. It prioritizes actions on coastal zones (5th position) that have as a general objective to address the overall sediments imbalance, beach erosion, the restoration of mangroves and promoting improved salt extraction technologies with wind and solar energies. Benin National Adaptation Plan has not been developed yet.
- Benin's Intended Nationally Determined Contributions (INDC) has been submitted in 2015. Its global objective in terms of adaptation is to increase efforts aiming at reducing the vulnerability of human systems to climate change and increase the resilience of ecosystems in a context of climate change. It identifies the protection of coastal zones as a priority in light of sea level rise and coastal erosion. To this respect, the restoration of mangrove ecosystems is listed a key objective.
- Benin's first Nationally Determined Contribution (NDC) under the Paris Agreement, 2017 includes as a key adaptive target the development of mangrove ecosystems by 2030. The priority actions highlighted in the NDC include: i) building adaptive capacity to climate change in all socio-economic sectors; ii) ensuring the diversification and promotion of high value-added agricultural value chains; iii) reducing the vulnerability of natural and human systems to water stresses, floods and degradation of water quality; iv) promoting intensive afforestation throughout the country using incentive measures; v) promoting the sustainable management of public and community forests areas; vi) adapting the forest sector's legislative and regulatory framework to climate change context; vii) ensuring the protection of the shoreline against the risk of sea-level rise which can exacerbate the phenomenon of coastal erosion; and viii) ensuring continuously the protection of marine and lagoon ecosystems. The three components of the proposed project are all fully aligned with these different objectives.
- Benin's National Biodiversity Strategy and Action Plan (NBSAP) 2016 highlights the importance of "restoring and conserving mangroves ecosystems" and materializes this under its 9th goal: "Reduce anthropic pressures on vulnerable marine ecosystems that are subject to climate change and oceans acidification" and 4th goal: "Reversing natural habitats degradation and depletion, including forests". The project will contribute to achieving both goals.
- Benin Agricultural Development Strategy (PSDSA) 2025 has three objectives which include: Strategic Objective 3: "Strengthening the resilience of vulnerable populations (men and women) particularly in small-scale familial farms" and Strategic Pillar 3 "Strengthening the resilience of farms (sustainable soil management and climate change adaptation, risk management) to climate change and improving food security and nutrition for vulnerable populations (e.g. nutrition, social safeguards)". The improved practices to be supported by the project following agroecology principles will contribute towards these objectives.
- The National Tourism Policy 2013–2025 aims to double the contribution of tourism to the GDP by 2025. One of eight pillars of the strategy is the development of ecotourism. The Strategic Plan for the Development of Ecotourism 2012-2021 recognises several sites that are part of the targeted areas as having good potential for ecotourism development (e.g. La Bouche-Du-Roi, several villages in Aguégués, Bopa Belvedere, Djèdbadgi, Avlékété peninsula).
- A National Gender Strategy is currently under development (as of November 2021, a team of consultant is collecting data on the ground). The proposed project interventions which are fully gender sensitive and promote women empowerment will support increased gender equality.
- Benin has ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1994, the Kyoto Protocol in 2002 and the Paris Agreement in 2016. Its First National Communication to the United Nations Framework Convention on Climate Change was published in 2001, and the Second National Communication to the UNFCCC was submitted in 2011. Benin ratified the Convention on Biological Diversity in 1994.

192. Benin is part of the African Forest landscape Restoration Initiative, a country-driven initiative coordinated by NEPAD with support and many technical and financial partners including FAO. The country pledged to restore 0.5 million ha of degraded land by 2030[97].

[97] https://afr100.org/content/benin

8. Knowledge Management.

193. Knowledge generation and management are integrated across the project's components (Table 8). Knowledge management under the project started with undertaking a stocktake of previous initiatives that piloted approaches and practices for the management of mangrove ecosystems, including planning processes, restoration and preservation interventions, and sustainable production practices in buffer zones. Considering that several highly relevant interventions are currently underway and constantly generating new knowledge, further identification of the lessons learned from ongoing initiatives will be undertaken at project inception to inform the design of the integrated management plans and maximise the success and sustainability of the corresponding interventions. A gender-sensitive knowledge management strategy will be developed during PY1 under Output 3.3 to support the capturing and dissemination of information on the project's progress and results.

194. Under Component 1, data and information on biodiversity, ecosystems, land-use, biodiversity loss, land degradation and threats in mangrove landscapes will be collected in order to address identified knowledge gaps in the targeted communes. These interventions will address existing gaps and inform the integrated, participatory planning exercise (Output 1.3). The results of these inventories, mapping exercises and assessments will be shared with all relevant government and non-government stakeholders in the targeted communes. They will also be made available on existing national and regional platforms. Digital and printed copies of the inventories, data sets, maps and reports will be accessible for consultation at the offices of local authorities, environmental associations and other relevant locations. Posters and pamphlets summarising the highlights of the inventories and assessments will also be produced. This knowledge will be useful to advocate for investments in mangrove preservation and support the geographical and thematic prioritisation of future investments. Furthermore, the information on biodiversity richness, and the value of biodiversity and ecosystems will be integrated in the awareness-raising campaigns to be implemented at the national level under Component 3. The monitoring and evaluation plan to be refined and implemented as part of Output 3.4 will enable to generate information on the project's progress and results in a timely matter to feed into the awareness-raising and knowledge-sharing material.

195. The project interventions will be undertaken in demonstration sites under each of the three identified mangrove landscapes. Knowledge sharing between CBOs and between NGOs will be maximised through the participation of relevant local organisations in decision-making processes and in the implementation of on-the-ground interventions to promote the replication of good practices across the landscape. A preference will be given to peer learning and exchange visits as knowledge-sharing approaches to maximise the uptake of good practices.

196. The project will generate and share lessons learned that might be beneficial in replicating the project outcomes in other mangroves area in the Gulf of Guinea and beyond. A focus will be on the knowledge generated by local communities on both the climate-resilient mangrove ecosystem restoration, conservation processes and outcomes, and on climate-resilient livelihoods. Furthermore, the project will create the needed linkages with projects of a similar focus inside and outside the country, and adapt a two-way flow of information (sharing and gaining knowledge). The project will collaborate closely with the WACA resilience investment project that is designed to become a convening platform for coastal countries and partners to share knowledge and expertise on coastal management, including mangrove ecosystem management. Similarly, knowledge exchanges are foreseen with FAO's LDCF "Strengthening resilience to climate change of coastal communities in Togo" project that was recently finalised, particularly in the areas of climate change adaptation mainstreaming, capacity-building for climate change adaptation, community planning and management of ecosystems, and development of non-timber forests products, among others.

197. Knowledge sharing will be undertaken at multiple scales: within the mangrove landscapes, between the mangrove landscapes, between neighbouring countries, at the regional level and at the global level. Knowledge sharing at the regional and global scales is part of Output 3.3. The platforms that have recently been established by partner initiatives (e.g. Collective of Benin's Gulf Deltas, MOLOA) will be used to disseminate the knowledge generated under the project.

198. Awareness raising will be undertaken at two levels. Under Component 1, awareness-raising interventions will take place mostly during PY1 to ensure that the communities within and surrounding the mangrove landscapes are fully aware of the project, its purpose and its interventions. The content of the campaign will include ecosystem services provided by mangroves, the current threats faced by mangrove ecosystems, the current and expected impacts

of climate change and adaptation opportunities. A wide array of communication streams will be used to reach all community groups including thematic gathering events (e.g. around traditional cooking), social media posts, local radio shows and short documentaries among others. In addition, knowledge and understanding of local government institutions, NGOs, CBOs and local populations on the existing policy framework pertaining to mangrove landscapes and resources will be increased through awareness raising and training under Component 1 (e.g. Land-Tenure Code particularly regarding river banks and coast lines). The main objective of this campaign is to support the successful implementation of the project interventions and their sustainability. The creation of environmental club will further support the uptake and sustainability of the project implementation and contribute to a behavioral change towards the preservation of mangrove ecosystems' and their resources. Under Component 3, the awareness-raising campaign will be undertaken at the national level and focus on the role and value of mangrove ecosystems and on sustainable management opportunities based on the result of the project and other partner projects.

Table 8: Knowledge management plan and budget

Knowledge management activities by output	Key deliverables	Budget	Year 1				Year 2				Year 3				Year 4				Year 5			
		USD	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1.1 Knowledge gaps on the distribution, composition, health, value and resilience of mangrove ecosystems addressed in order to inform integrated management planning of mangrove landscapes under Output 1.4																						
(i) Develop detailed maps of mangrove ecosystems distribution, health and tree density in the targeted communes	Mangrove maps	7,000																				
(ii) Undertake inventories of flora and fauna in the mangroves of Ramsar site 1018 and update the inventories undertaken in Ramsar 1017 where necessary	Inventories	8,000																				
(iii) Develop fine scale maps of suitable habitat for mangroves by 2030, 2050 and 2100 under the climate scenario to support mangrove management planning under Output 1.3	Climate-based maps	12,250																				
(iv) Address knowledge gaps on land-use changes and development/conversion trends in mangroves, lagoons and lakes, wetlands, gallery forests, farmland and plantations within the targeted mangrove landscapes to support the participatory management process under Output 1.3	Land-use maps	3,500																				
(v) Undertake a comprehensive analysis of the economic, social, cultural and environmental uses and value attributed to mangrove ecosystems in the targeted landscapes	Assessment report	14,000																				
(vi) Establish research partnerships with universities, schools and/or research centres (e.g. LEA, LABEF, CENAGREF) to address remaining knowledge gaps through Masters, PhDs and/or PostDocs	Research reports and peer-reviewed papers	60,000																				
(vii) Analyse the social, economic and/or cultural barriers to the success of previous initiatives in promoting alternative energy sources to *Rhizophora racemosa*'s wood and identify reliable energy solutions	Assessment report	10,500																				
Output 1.2 Local awareness-raising platforms in demonstration sites established and made operational to mobilise and engage local stakeholder groups in mangrove ecosystem management planning, implementation and monitoring																						
(i) Establish local awareness-raising platforms in the targeted sites through the identification of	Annual stocktaking briefly summarising	25,000																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
community champions and funding sources to support awareness raising and behavioural changes within their community groups	the outcomes of each platform.																					
(ii) Provide training on awareness-raising methods to identified community champions, as well as communal staff, CSOs, local NGOs and local decision makers, and participatory development of awareness-raising tools	Training material and awareness-raising tools	60,500																				
(iii) Organise awareness-raising activities for local communities, CSOs, local authorities, agricultural extension and advisory services, private companies and other relevant stakeholders in the targeted mangrove landscapes on the ecosystem services provided by mangroves, the current threats faced by mangrove ecosystems, the current and expected impacts of climate change, adaptation opportunities, and the existing legal instruments related to mangrove ecosystems management	Awareness-raising reports	10,500																				
(iv) Create environmental clubs in schools neighbouring the mangrove areas, provide training to teachers, raise awareness of scholars and establish plant nurseries in each club	Training material and reports	36,000																				
Output 1.3 Mangrove landscapes' integrated management plans developed/updated in nine communes involving local stakeholders, including from agriculture, forestry and fishery sectors																						
(ii) Support ACCBs, APCs and other relevant CBOs in the targeted communes in developing or updating their management plans to ensure adequate integration of biodiversity and climate change considerations in a participatory manner and in alignment with existing plans where adequate	B-intact report	36,000																				
Output 1.4 Mangrove landscapes' integrated management plans implemented in nine communes, promoting innovative and integrated technologies and approaches in the agriculture, forestry and fisheries sectors that contribute to ecosystem restoration, resilience and sustainability																						
(iii) Support mangrove (Assisted Natural Regeneration – ANR – and/or direct), riverbank and coastal vegetation restoration interventions including the establishment of nurseries using the Practical Guide for the production and plantation of mangrove species in Benin and	Training material and reports	15,000																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
the experience generated through previous initiatives																						
(vi) Support the adoption of improved soil management practices following an agroecology approach in the buffer zones and transition zones based on the experience of EcoBenin, Action-Plus, BEES, GIZ, AFD and FAO and building on existing structures	Training material and reports	40,000																				
Output 1.5 Capacity of ACCBs, APCs and other relevant CBOs and local stakeholders increased in administrative and financial management, project management, and monitoring																						
(i) Provide administrative, financial and management training to ACCBs, APCs and other relevant CBOs	Training material and reports	21,000																				
(ii) Provide training on women leadership to CBO members and other interested women within the targeted communes	Training material and reports	21,000																				
(iii) Design a citizens' mangroves monitoring system and support ACCBs, APCs and other relevant CBOs' members in adopting relevant monitoring tools to monitor and measure the efficiency of the restoration and conservation interventions and draw lessons learned on best practices	Citizens' mangrove monitoring system report, mangrove monitoring reports	21,000																				
(iv) Design and implement with local government institutions and in collaboration with ACCBs, APCs and other relevant CBOs a biomonitoring system that looks at: i) ecosystem regeneration, degradation and health; and ii) trend of mangrove species of high ecological and economic interest	Biomonitoring system report, biomonitoring reports	21,000																				
(v) Design and implement a monitoring plan to ensure compliance to exploitation rules using a participatory approach with Forest Inspections, DPHs and ATDAs	Compliance monitoring plan	9,000																				
Output 2.1 Sustainable nature-based value chains strengthened to increase the resilience of communities' income sources using a participatory and gender-sensitive approach																						
(iii) Define a set of selection criteria and rating system to evaluate business plans for the development of sustainable nature-based economic activities, including as example: cost effectiveness, contribution/invesment from the applicants, resilience to climate change, financial viability and sustainability, benefits	Business plan selection process report	9,000																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
for biodiversity and for mangrove conservation, number of benefitting members, and social and economic benefits for the overall community																						
(iv) Provide training in entrepreneurship and in the development of a bankable business plan (preferentially as a group or association) for the development or strengthening of sustainable nature-based economic activities to interested community members in the mangrove landscapes following a learning-by-doing approach – with a particular focus on youth and women – based on the experience of EcoBenin with the Entrepreneurship and Funding Programme for Youth	Training material and reports, Business plans	33,000																				
(vi) Provide training to local government institutions, NGOs, CBOs and/or community champions on improved production/harvesting/processing techniques for them to: i) undertake the training activities for community members (using a training-of-trainers approach); ii) provide long-term support for the maintenance of the improved livelihoods; and iii) support outscaling of these techniques.	Training material and reports	12,000																				
(vii) Provide required training and equipment for the implementation of the selected business plans, including the establishment of tailored channelling systems for financial support (e.g. loans, revolving funds, grants) based on the experience of existing financial structures and relevant NGOs	Training material and reports	100,000																				
Output 2.2 At least three local public-private partnerships created and operationalized to catalyse investments for alternative nature-based livelihoods and value chains in the targeted communities																						
(i) Identify opportunities for the development of PPPs for the strengthening and long-term maintenance of agricultural, forestry, fisheries and/or ecotourism value chains development	Stocktake report	7,000																				
Output 2.3 Access to financial opportunities increased for community members – including¬ the most vulnerable and poorest ¬– in the mangroves landscapes to support the adoption of sustainable nature-based livelihoods																						
(i) Train and support community members – particularly women – in the set up and management of AVECs or other adequate	Training material and reports	21,000																				

Knowledge management activities by output	Key deliverables	Budget	Year 1				Year 2				Year 3				Year 4				Year 5			
		USD	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
community-based finance systems to support the strengthening of climate resilient and biodiversity-friendly income sources																						
(ii) Create/strengthen and operationalise AVECs the community-based finance systems based on the experience of EcoBenin in the ACCB La Bouche-du-Roy, and provide required training in financial and administrative management	Training material and reports	21,000																				
(iii) Train cooperative members and entrepreneurs in the development of projects eligible for existing government funds (e.g. : FNEC, FNDA, FADeC7) and establish collaboration agreements between AVECs and government funds where appropriate	Training material and reports	21,000																				
(iv) Advocate for the allocation of increased human resources within the ATDA of MAEP to support agricultural producers in accessing financial opportunities such as FNDA	Advocacy material	7,000																				
Output 3.2 Capacity development plan designed and implemented for governmental institutions working on mangroves in Benin and the region to be able to support integrated, participatory and gender-sensitive processes for the sustainable management of mangrove landscapes																						
(ii) Develop and implement a capacity development plan based on identified gaps (study visits, research exchange programmes, training sessions...)	Capacity development plan	70,000																				
(iii) Identify and integrate local and tailored governance planning tools for bottom-up and participatory management of resilient mangroves and other relevant coastal landscapes	Training reports	14,000																				
Output 3.3 Knowledge and awareness on climate-resilient mangrove ecosystems conservation and sustainable use strengthened to benefit decision making at the national scale																						
(i) Design and implement a tailored knowledge management strategy to capture and share lessons learned from the project and other relevant initiatives based on existing platforms such as the Collective of NGOs headed by EcoBenin “Collectif des Deltas du Golf du Benin”	Knowledge management strategy	40,000																				
(ii) Design and implement national awareness-raising campaigns on the role and value of	Awareness-raising tools and reports	90,000																				

Knowledge management activities by output	Key deliverables	Budget	Year 1				Year 2				Year 3				Year 4				Year 5			
		USD	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
mangrove ecosystem and sustainable management opportunities																						
(iii) Organise regional knowledge sharing activities through the Collective of Benin's Gulf Deltas headed by EcoBenin on good practices for the sustainable management of mangrove landscapes (exchange visits) and building on the efforts of IUCN in creating a knowledge sharing platform on mangroves in the Mono Transboundary Biosphere Reserve under PAP-Bio project	Knowledge-sharing events' report	40,000																				
(iv) Organise international knowledge sharing activities on good practices for the sustainable management of mangrove landscapes	Knowledge-sharing events' report	30,000																				
Output 3.4: Project's Monitoring & Evaluation plan implemented																						
(i) Support the M&E officer in refining and implementing the project's gender-sensitive M&E plan in collaboration with other PMU members, this includes clearly identifying the role of the team members and other project actors in data collection and ensuring that all required data is collected systematically and rigorously.	M&E plan and project reporting outputs (cf. M&E section)	21,000																				
(ii) Undertake the Mid-Term Evaluation	MTE report	30,000																				
(iii) Undertake the Final Evaluation	FE report	33,500																				
TOTAL		1,030,750																				

9. Monitoring, Evaluation and Reporting.

199. The project results, as outlined in the project results framework *(Annex A1)*, will be monitored regularly, reported annually and assessed during project implementation to ensure the project effectively achieves these results. Monitoring and evaluation activities will follow *FAO* and GEF's policies and guidelines for monitoring and evaluation. The M&E system will also facilitate learning, replication of the project's results and lessons which will feed the project's knowledge management strategy.

Monitoring Arrangements

200. Project oversight and supervision will be carried out by the Budget Holder with the support of the PTF, LTO and FLO and relevant technical units in FAO headquarters. Oversight will ensure that: (i) project outputs are produced in accordance with the project results framework and leading to the achievement of project outcomes; (ii) project outcomes are leading to the achievement of the project objective; (iii) risks are continuously identified and monitored and appropriate mitigation strategies are applied; and (iv) agreed project global environmental benefits and adaptation benefits are being delivered.

201. The FAO-GEF Coordination Unit, LTO and HQ Technical units will provide oversight of GEF financed activities, outputs and outcomes largely through the annual PIRs, periodic backstopping and supervision missions.

202. Day-to-day project monitoring will be carried out by the PMU. Project performance will be monitored using the project results matrix, including indicators (baseline and targets) and annual work plans and budgets. At inception phase, the results matrix will be reviewed to finalize the identification of i) outputs ii) indicators iii) targets and iv) any missing baseline information

203. A detailed M&E System, which builds on the results matrix and defines specific requirements for each indicator (data collection methods, frequency, responsibilities for data collection and analysis, etc), will also be developed during project inception by the M&E Expert of the PMU.

Table 9: M&E plan

Type of M&E Activity	Responsible Parties	Time-frame	Budget
Inception Workshop	PMU in consultation with the LTO, BH and PSC	Within 1 month after start-up	USD 4,000
Results-based Annual Work Plan and Budget	PMU in consultation with the FAO Project Task Force	3 weeks after start-up and annually with the reporting period July to June	Project staff time
Project Inception Report	PMU in consultation with the FAO LTO, FAO BH, FAO country office Report cleared by the FAO BH, FAO LTO and the FAO GEF Coordination Unit and uploaded in the Field Program Management Information System (FPMIS) by the FAO BH	1 month after start-up	Project staff time
Project M&E Expert	Full-time expert as part of the PMU	1 month after start-up	USD 84,000
M&E training workshop	M&E expert	During Year 1	USD 21,000
M&E tools and equipment	GPS and other tools required by the Project M&E expert	Within 6 months after start-up	USD 12,000
'On site' impact monitoring (including ES risk mitigation plan)	M&E expert	Throughout the implementation period	Project staff time
Supervision Visits	FAO	Mid-term	Project staff time

Type of M&E Activity	Responsible Parties	Time-frame	Budget
Project Progress Reports (PPR)	PMU based on the systematic monitoring of output and outcome indicators identified in the project's Results Framework. The PPR will be submitted to the FAO BH and FAO LTO for comments and clearance. The FAO BH will upload the PPR on the FPMIS.	No later than one month after the end of each six-monthly reporting period (30 June and 31 December)	Project staff time
Project Implementation Review (PIR) report	FAO LTO (in collaboration with the PMU) will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the FAO BH and the GEF-Funding Liaison Officer	July 1st of each reporting year	Project staff time
Co-financing Reports (Disbursement, Output)	PMU	On a semi-annual basis, and will be considered as part of the semi-annual PPRs	Project staff time
GEF / LDCF Core Indicators	PMU and reviewed by FAO LTO	At mid-point and end of project	Project staff time
Technical Reports	Project staff and consultants, with peer review as appropriate	As appropriate	Project time and consultant costs
Mid-term Review	External consultant, FAO BH in consultation with PMU, GEF Coordination Unit and other partners.	Half-way through project implementation	USD 30,000
Independent Terminal Evaluation	The BH will be responsible to contact the Regional Evaluation Specialist (RES) within six months prior to the actual completion date (NTE date). The RES will manage the decentralized independent terminal evaluation of this project under the guidance and support of OED.	6 months prior to terminal review meeting	USD 33,500
Lessons Learned	Project Staff, short-term consultants and FAO	As appropriate	Project time and consultant costs
Terminal Report	PMU and reviewed by FAO LTO	One month before the Terminal Evaluation	USD 6,800
Total Budget			**USD 191,300**

Monitoring and Reporting

204. In compliance with FAO and GEF M&E policies and requirements, the PMU, in consultation with the PSC and PTF will prepare the following i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) annual PIR; (v) Technical Reports; (vi) co-financing reports; and (vii) Terminal Report. In addition, the Core Indicators will be used to monitor Global Environmental benefits and adaptation benefits, and updated regularly by the PMU.

205. **Project Inception Report**. A project inception workshop will be held within two months of project start date and signature of relevant agreements with partners. During this workshop the following will be reviewed and agreed:

- the proposed implementation arrangement, the roles and responsibilities of each stakeholder and project partners;
- an update of any changed external conditions that may affect project implementation;
- the results framework, the SMART indicators and targets, the means of verification, and monitoring plan;
- the responsibilities for monitoring the various project plans and strategies, including the risk matrix, the Environmental and Social Risk Management Plan, the gender strategy, the knowledge management strategy, and other relevant strategies;
- finalize the preparation of the first year AWP/B, the financial reporting and audit procedures;
- schedule the PSC meetings;
- prepare a detailed first year AWP/B,

206. The PMU will draft the inception report based on the agreement reached during the workshop and circulate among PSC members, BH, LTO and FLO for review within one month. The final report will be cleared by the FAO BH, LTO and the FAO GEF Coordination Unit and uploaded in FAO's Field Program Management Information System (FPMIS) by the BH.

207. **Results-based Annual Work Plan and Budget (AWP/B)**. The draft of the first AWP/B will be prepared by the PMU in consultation with the FAO Project Task Force and reviewed at the project Inception Workshop. The Inception Workshop inputs will be incorporated and subsequently, the PMU will submit a final draft AWP/B to the BH within two weeks after the workshop. For subsequent AWP/B, the PMU will organize a project progress review and planning meeting for its progress review and adaptive management. Once PSC comments have been incorporated, the PMU will submit the AWP/B to the BH for non-objection, LTO and the FAO GEF Coordination Unit for comments and for clearance by BH and LTO prior to uploading in FPMIS by the BH. The AWP/B must be linked to the project's Results Framework indicators to ensure that the project's work and activities are contributing to the achievement of the indicators. The AWP/B should include detailed activities to be implemented to achieve the project outputs and output targets and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The AWP/B should be approved by the PSC, LTO, BH and the FAO GEF Coordination Unit, and uploaded on the FPMIS by the BH.

208. **Project Progress Reports (PPR)**: The PPRs are used to identify constraints, problems or bottlenecks that impede timely implementation and to take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the Project Results Framework *indicate annex number*, AWP/B and M&E Plan. Each semester the *indicate as appropriate Project Coordinator (PC) or Project Manager* will prepare a draft PPR, will collect and consolidate any comments from the FAO PTF. The *PC / PM* will submit the final PPRs to the FAO Representation in *indicate country* every six months, prior to 31 July (covering the period between January and June) and before 31 December (covering the period between July and December). The July-December report should be accompanied by the updated AWP/B for the following Project Year (PY) for review and no-objection by the FAO PTF. The Budget Holder has the responsibility to coordinate the preparation and finalization of the PPR, in consultation with the PMU, LTO and the FLO. After LTO, BH and FLO clearance, the FLO will ensure that project progress reports are uploaded in FPMIS in a timely manner.

209. **Annual Project Implementation Report**: The PIR is a key self-assessment tool used by GEF Agencies for reporting every year on project implementation status. It helps to assess progress toward achieving the project objective and implementation progress and challenges, risks and actions that need to be taken. Under the lead of the BH, the Project Coordinator / Project Manager will prepare a consolidated annual PIR report covering the period July (the previous year) through June (current year) for each year of implementation, in collaboration with national project partners (including the GEF OFP), the Lead Technical Officer, and the FLO. The PC/PM will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission and report these results in the draft PIR.

210. BH will be responsible for consolidating and submitting the PIR report to the FAO-GEF Coordination Unit for review by the date specified each year *after each co-implementing agency's review for each respective output under their responsibilities (to be included for joint implementation only)*. FAO - GEF Funding Liaison Officer review PIRs and discuss the progress reported with BHs and LTOs as required. The BH will submit the final version of the PIR to the FAO-GEF Coordination Unit for final approval. The FAO-GEF Coordination Unit will then submit the PIR(s) to the GEF Secretariat as part of the Annual Monitoring Review of the FAO-GEF portfolio

211. **Technical Reports**: Technical reports will be prepared as part of project outputs and to document and share project outcomes and lessons learned. The LTO will be responsible for ensuring appropriate technical review and quality assurance of technical reports. Copies of the technical reports will be distributed to project partners and the PSC as appropriate.

212. **Co-financing Reports**: The PMU will be responsible for tracking co-financing materialized against the confirmed amounts at project approval and reporting. The co-financing report, which covers the GEF fiscal year 1 July through 30 June, is to be submitted on or before 31 July and will be incorporated into the annual PIR. The co-financing report needs to include the activities that were financed by the contribution of the partners.

213. **Tracking and reporting on results across the GEF 7 core indicators and sub-indicators:** As of July 1, 2018, the GEF Secretariat requires FAO as a GEF Agency, in collaboration with recipient country governments, executing partners and other stakeholders to provide indicative, expected results across applicable core indicators and sub-indicators for all new GEF projects submitted for Approval. During the approval process of the (insert short project title) expected results against the relevant indicators and sub-indicators have been provided to the GEF Secretariat. Throughout the implementation period of the project, the PMU, is required to track the project's progress in achieving these results across applicable core indicators and sub-indicators. At project mid-term and project completion stage, the project team in consultation with the PTF and the FAO-GEF CU are required to report achieved results against the core indicators and sub-indicators used at CEO Endorsement/ Approval. Methodologies, responsibilities and timelines for measuring core-indicators will be outlined in the M&E Plan prepared at inception.

214. **Terminal Report**: Within two months before the end date of the project, and one month before the Final Evaluation, the PMU will submit to FAO *(to specify the unit in charge in HQ)* a draft Terminal Report. The main purpose of the Terminal Report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the project, and to provide the donor with information on how the funds were utilized. The Terminal Report is accordingly a concise account of the main products, results, conclusions and recommendations of the project. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results.

MTR and Evaluation provisions

Mid-Term Review

215. As outlined in the GEF Evaluation Policy, MTRs or mid-term evaluations (MTEs) are mandatory for all GEF-financed full-sized projects (FSPs), including Enabling Activities processed as full-sized projects. It is also strongly encouraged for medium-sized projects (MSPs). The Mid-Term review will (i) assess the progress made towards achievement of planned results (ii) identify problems and make recommendations to redress the project (iii) highlight good practices, lessons learned and areas with the potential for upscaling.

216. The Budget Holder is responsible for the conduct of the MTR of the project in consultation with the FAO-GEF Coordination Unit halfway through implementation. He/she will contact the FAO-GEF Coordination Unit about 3 months before the project half-point (within 3 years of project CEO Endorsement) to initiate the MTR exercise.

217. To support the planning and conduct of the MTR, the FAO GEF CU has developed a guidance document "**The Guide for planning and conducting MTRs of FAO-GEF projects and programmes"**. The FAO-GEF CU will appoint a MTR focal point who will provide guidance on GEF specific requirements, quality assurance on the review process and overall backstopping support for the effective management of the exercise and for timely the submission of the MTR report to the GEF Secretariat.

218. After the completion of the MTR, the BH will be responsible for the distribution of the MTR report at country level (including to the GEF OFP) and for the preparation of the **Management Response** within 4 weeks and share it with national partners, GEF OFP and the FAO-GEF CU. The BH will also send the updated core indicators used during the MTR to the FAO-GEF CU for their submission to the GEF Secretariat.

Terminal Evaluation

219. The GEF evaluation policy foresees that all Medium and Full sized projects require a separate terminal evaluation. Such evaluation provides: i) accountability on results, processes, and performance ii) recommendations to improve the sustainability of the results achieved and iii) lessons learned as an evidence-base for decision-making to

be shared with all stakeholders (government, execution agency, other national partners, the GEF and FAO) to improve the performance of future projects.

220. The Budget Holder will be responsible to contact the **Regional Evaluation Specialist (RES)** within six months prior to the actual completion date (NTE date). The RES will manage the decentralized independent terminal evaluation of this project under the guidance and support of OED and will be responsible for quality assurance. Independent external evaluators will conduct the terminal evaluation of the project taking into account the "GEF Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects". FAO Office of Evaluation (OED) will provide technical assistance throughout the evaluation process, via the OED Decentralized Evaluation Support team – in particular, it will also give quality assurance feedback on: selection of the external evaluators, Terms of Reference of the evaluation, draft and final report. OED will be responsible for the quality assessment of the terminal evaluation report, including the GEF ratings.

221. After the completion of the terminal evaluation, the BH will be responsible to prepare the management response to the evaluation within 4 weeks and share it with national partners, GEF OFP, OED and the FAO-GEF CU. The BH will also send the updated core indicators used during the TE to the FAO-GEF CU for their submission to the GEF Secretariat.

Disclosure

222. The project will ensure transparency in the preparation, conduct, reporting and evaluation of its activities. This includes full disclosure of all non-confidential information, and consultation with major groups and representatives of local communities. The disclosure of information shall be ensured through posting on websites and dissemination of findings through knowledge products and events. Project reports will be broadly and freely shared, and findings and lessons learned made available.

10. Benefits

223. The project interventions under Components 1 and 2 will contribute significantly to **empowering local populations** by increasing their involvement in decision-making and planning processes through the creation of CBOs (e.g. ACCBs, APCs) that will lead the decision-making, planning and implementation processes. Communities will also be involved in monitoring and evaluation activities. The project interventions will contribute to increasing access of local community members to knowledge and skills (e.g. technical knowledge, as well as financial and administrative management, project design and management, fund raising) and to financial opportunities with continuous technical support. Furthermore, community members will be empowered by supporting them in clustering into strong organisations (i.e., producers' associations and cooperative). Climate-resilient practices in agricultural, pastoral and forest land will enhance local populations' autonomy, resilience and adaptive capacity, and give them the opportunity to become agents of change. Furthermore, the gender-sensitive approach adopted throughout the project will contribute to addressing gender inequalities by creating opportunities for women which often have limited access to land and financial opportunities, and particularly vulnerable to climate change. Gender balance will be promoted by ensuring that women participate actively in decision-making, planning and monitoring processes, and benefit adequately from the knowledge-sharing, capacity building and income-generating interventions.

224. By supporting improved management of natural resources for increased land productivity and strengthening Value Chains, the project will **increase the range of economic opportunities** that exists in the mangroves' landscapes. As a result, the youth will have increased opportunities to adopt sustainable livelihoods that generate a reliable income, while increasing their resilience to climate change and benefitting biodiversity.

225. Building on the information collected during the PPG phase, mangrove have an important cultural and spiritual value for local communities. Their degradation is directly threatening this heritage. The project will contribute to protecting this heritage by: i) assessing and highlighting the value that local community give to mangrove ecosystems; and ii) supporting their rehabilitation and protection. In addition, the GEF-funded project will contribute to **conserving and adding value to the traditional medicinal knowledge** on local plants. This knowledge is currently being lost because the absence of adequate management of medicinal species is reducing their availability and reducing the capacity for traditional healers to practice. Under Component 1, the inventories, value assessments and corresponding mapping exercises will enable to measure the availability of medicinal plant species and define required

interventions for the preservation and sustainable management. Additional consultations with local populations at project inception will enable to refine the identification of the traditional know-how and products that people would like to focus on in the targeted communes. The development of ecotourism and agrotourism packages and the creation of protected areas will further contribute to conserving and adding value to traditional knowledge and culturally-important sites.

226. The diversification of agricultural products, improved exploitation practices and increased productivity following an agroecology approach under Component 2 will increase the diversity of food products available locally for **better affordability of diverse and nutritious diets**. This will have positive effects on health in the targeted communes. Furthermore, the biological diversity of production systems will further strengthen their resilience to pest outbreaks and climate chocks thereby enabling sustained provision of diverse local products[98].

227. Agroecology practices will enable improved usage of natural resources, such as solar radiation, atmospheric carbon and nitrogen. In addition, in these improved production systems, the recycling of nutrients, biomass and water will be increased as well as resource use efficiency, and wastes will be reduced. By enhancing biological processes and recycling biomass, nutrients and water, producers will be able to use fewer external resources, thereby **reducing costs**. As an example, biological nitrogen fixation by legumes in intercropping and rotation systems can enable a major reduction in the need for synthetic fertilizers[99]. As a result, **agricultural production will be sustainably increased**[100].

228. Agricultural, fisheries and forest income sources and markets will be strengthened under the GEF-funded project. The **diversification of income sources** through improved production systems and processing methods over approximately 50,000 ha of mangrove landscapes will directly benefit approximately 400 land-users[101] including at least 50% of women which will contribute to stabilizing household income for approximately 2,000 individuals. In addition, diversified income sources will increase the resilience of land users to climate and environmental risks. The failure of a specific products will have a lower impact on the households' income which will be more economically resilient.

Environmental benefits

229. Mangrove ecosystems have a major role in maintaining the health of coastal areas, and the well-being of local communities. They provide protection against coastal erosion, support water regulation and water quality, and provide shelter for terrestrial and marine species that have high cultural, medicinal, nutritional and economic values. In addition, mangrove ecosystems store large quantities of carbon and have therefore the capacity to support climate change mitigation. The project will contribute to maintaining the remaining mangrove stands and restoring degraded ones. The project interventions will result in increased vegetation cover, increased soil fertility, improved water availability, greater species diversity in forests, wetlands and agricultural land as well as coastal areas, and maintained and protected habitat to support biodiversity and species conservation (please see Part II 1.a. 6. Global Environmental Benefits for more information).

Benefits related to the current situation with COVID-19

230. The GEF-funded project will support local populations in the targeted communes in building a livelihood foundation that not only enhances climate resilience but also provides a response and recovery plan to the COVID-19 pandemic. This will be done through the establishment and strengthening of Value Chains' opportunities. For example, under Outputs 1.1.4 and 2.1.1, livelihoods' resilience and diversification will be supported through improved management of agricultural, fish and forest resources and through the strengthening of crops, fish, NTFPs and small livestock Value Chains to support increased and more reliable income for vulnerable households. The criteria for prioritising the livelihood interventions will include the impact of COVID-19 on local populations. Increased production of a diversity of products and local productions of required inputs (e.g., seeds, seedlings, organic compost) will increase economic reliance in rural areas and reduce their vulnerability to national market restrictions.

[98] FAO, 2018. The 10 Elements of Agroecology : Guiding the transition to sustainable food and agricultural systems.
[99] FAO, 2016. Soils and Pulses: Symbiosis for life. Rome.
[100] Levard L (Gret), Mathieu B (AVSF), 2018. Agroécologie : capitalisation d'expériences en Afrique de l'Ouest. 82pp.
[101] This includes approximately 300 crop producers, 200 olive producers, 200 livestock farmers, and 200 harvesters of forest products.

PART III: ANNEXES

Annex A1: Project Results Framework [102]

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Objective: To increase the resilience of mangrove ecosystems and their dependent agricultural, forestry and fishery communities to climate change and support the conservation of biodiversity and ecosystem services within the mangrove landscapes of Ramsar sites 1017 and 1018							
Component 1:							
Outcome 1: Mangrove ecosystems and their ecosystem services and goods are sustainably managed to benefit the local agricultural, forestry and fishery communities and biodiversity in demonstration sites.	**Indicator 1:** Number of ha of vulnerable and degraded mangrove landscapes under climate-resilient and sustainable management to benefit biodiversity **Indicator 2:** Number of communes adopting and implementing mangrove landscapes' integrated management plans, and number of people benefitting from increased resilience	A few ACCBs and APCs have developed management plans but need support for their implementation. Other mangrove areas – particularly in Ramsar site 1018 – have CBOs or management plans which prevents their sustainable management and lead to their degradation.	**Target 1:** 50,000 ha of vulnerable and degraded mangrove landscapes are covered by a sustainable management plan **Target 2**: Nine communes have adopted mangrove landscapes' integrated management plans	**Target 1:** 50,000 ha of vulnerable and degraded mangrove landscapes under climate-resilient and sustainable management to benefit biodiversity **Target 2**: Nine communes adopt and implement mangrove landscapes' integrated management plans, benefitting directly the climate resilience of at least 300,000 people including 50% of women	Field visits, community surveys, interviews with ACCBs' and APCs' members, decrees for ACCBs/APCs/other CBOs creation, management plans	A1 – Decentralised government institutions, community leaders, community groups, NGOs and private sector institutions are willing to engage in participatory landscape-level cross-sectoral management planning processes for mangrove ecosystems, and continue to support the community-based management approach for	M&E expert MCVDD

[102] Please note that output based indicators are not mandatory as long as the targets for each output are well defined.

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
						mangrove areas. A2 – Local communities and CSOs grasp the opportunities offered by community-based mangrove management, and are willing to invest the required time and energy to make their livelihoods more resilient. A6 – Mangrove ecosystems are able to adapt to changing climate conditions (e.g. increased temperature and salinity, droughts, floods, winds and SLR) and future suitable habitat can be identified.	

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 1.1 Knowledge gaps on the distribution, composition, health, value and resilience of mangrove ecosystems addressed in order to inform integrated management planning of mangrove landscapes under Output 1.4	Number of ecosystem maps, inventories, land-use maps, value assessments, socio-economic analysis and research projects undertaken to address knowledge gaps on mangrove ecosystems	There are important knowledge gaps on mangrove landscapes that prevent adequate management planning.	At least 11 ecosystem maps (3), inventories (1), land-use maps (3), value assessments (1), socio-economic analysis (1) and research projects (2) undertaken to address knowledge gaps on mangrove ecosystems	At least 14 ecosystem maps (3), inventories (1), land-use maps (3), value assessments (1), socio-economic analysis (1) and research projects (5) undertaken to address knowledge gaps on mangrove ecosystems	Knowledge products		M&E expert MCVDD Operational Partners Research Institutions (e.g. LEA, LABEF)
Output 1.2 Local awareness-raising platforms in demonstration sites established and made operational to mobilise and engage local stakeholder groups in mangrove ecosystem management planning, implementation and monitoring	Number of awareness-raising events and tools designed and organised/disseminated by local awareness-raising platforms	There are no awareness-raising platforms in the targeted sites or institution implementing awareness-raising campaigns on a continuous basis. Limited funds have been invested to develop high-quality communication tools that can be reused.	At least 25 local gathering events (9), celebration days (2), social network posts (5), newspaper articles (4), radio shows (3), short documentaries (2).	At least 25 local gathering events (9), celebration days (2), social network posts (5), newspaper articles (4), radio shows (3), short documentaries (2).	Field visits, community surveys, awareness-raising tools, awareness-raising events report and articles		M&E expert Communication expert MCVDD Operational Partners
Output 1.3 Mangrove landscapes' integrated management plans developed/updated	Number of mangrove landscapes' integrated management plans developed/updated	ACCB La Bouche-du-Roi has a plan (aligned to the RBT-Mono Management	At least 10 mangrove landscapes' integrated management plans developed/updated	At least 10 mangrove landscapes' integrated management plans developed/updated	Management plans, interviews with ACCBs/APCs/other CBOs members		M&E expert MCVDD MAEP Operational Partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
in 9 communes involving local stakeholders, including from agriculture, forestry and fishery sectors		Plan) that needs to be updated. The other mangrove areas do not have a plan yet.	across the nine targeted communes	across the nine targeted communes			ACCBs, APCs and other relevant CBOs
Output 1.4 Mangrove landscapes' integrated management plans implemented in 9 communes, promoting innovative and integrated technologies and approaches in the agriculture, forestry and fisheries sectors that contribute to ecosystem restoration, resilience and sustainability	Number of mangrove landscapes' integrated management plans under implementation	ACCB La Bouche-du-Roi has a plan (aligned to the RBT-Mono Management Plan) that needs to be updated. The other mangrove areas do not have a plan yet.	At least 10 mangrove landscapes' integrated management plans developed/updated across the 9 targeted communes	At least 10 mangrove landscapes' integrated management plans under implementation across the 9 targeted communes	Interviews with ACCBs'/APCs'/other relevant CBOs' members, field visits, technical reports from on-the-ground interventions		M&E expert MCVDD MAEP Operational Partners ACCBs, APCs and other relevant CBOs
Output 1.5 Capacity of ACCBs, APCs and other relevant CBOs and local stakeholders increased in administrative and financial management, project management, and monitoring	Number of functioning and autonomous ACCBs, APCs and other relevant CBOs with 50% of women members Number of monitoring systems established and operational	There are three existing ACCBs and two APCs in the targeted area, they need support in administrative, financial and project management. There are no long-term monitoring systems for mangrove	Eight functioning and autonomous ACCBs, APCs or other relevant CBOs with 50% of women members Two monitoring systems established and operational	10 functioning and autonomous ACCBs, APCs or other relevant CBOs with 50% of women members Two monitoring systems established and operational	Interviews with members of ACCBs, APCs or other relevant CBOs, field visits, CBOs' financial and administrative systems		M&E expert MCVDD Operational Partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
		ecosystems and species in the targeted area.					
Component 2: Increased adaptive capacity of the human systems thanks to livelihood diversification and development							
Outcome 2: Agricultural, forestry and fishery communities dependent on mangrove ecosystems adopt gender-empowering, biodiversity-friendly and sustainable alternative livelihoods that increase their resilience to climate change.	**Indicator 1:** Number of people benefit from increased income thanks to climate resilient alternative livelihoods	Existing value chains in the sectors of agriculture, fisheries, forestry and tourism are poorly developed and provide unreliable income.	**Target 1:** 1,000 people including 50% of women benefit from increased income thanks to climate resilient alternative livelihoods	**Target 1:** 5,000 people including 50% of women benefit from increased income thanks to climate resilient alternative livelihoods (including 1,500 fishermen and 3,500 agricultural and forestry producers, processors and traders)	Interviews with members of ACCBs, APCs or other relevant CBOs (and other potential community members), interviews with private sector partners, field visits, technical reports from on-the-ground interventions	A3 – Private sector actors including microfinance institutions and private companies are willing to support and invest in sustainable, nature-based value chains. A4 – The demand for nature-based sustainable value chains to be supported by the project remain stable or on the rise and enables to provide secured, long-term sources of income for local communities, investors and buyer companies.	M&E expert MCVDD MAEP Operational Partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 2.1 Sustainable nature-based value chains strengthened to increase the resilience of communities' income sources using a participatory and gender-sensitive approach	Number of business plans implemented	Despite the efforts of local and international organisations, the availability of resilient sources of income and access to financial support to improve livelihoods remain limited in the targeted mangrove landscapes.	At least 80 business plans developed by community members trained in the design of business plans	At least 50 business plans implemented	Business plans, field visits, technical reports, community surveys		M&E expert MCVDD MAEP Operational Partners
Output 2.2 At least three local public-private partnerships created and operationalized to catalyse investments for alternative nature-based livelihoods and value chains in the targeted communities	Number of public-private partnerships created and operationalized	Private sector engagement in sustainable value chains is very rare in the targeted mangrove landscapes.	At least two public-private partnerships created	At least three public-private partnerships created and operationalized (at least one in each mangrove landscape)	Signed public-private partnership agreements		M&E expert MCVDD MAEP Operational Partners
Output 2.3 Access to financial opportunities increased for community members – including the most vulnerable and poorest – in the mangroves landscapes to	Number of public and private sources of funding collaborating with the project	Existing government funds and private financing systems are difficult to access for agricultural, forestry and fishery	At least one public and private source of funding collaborating with the project	At least two public and private sources of funding collaborating with the project	Signed agreements, endorsed business plans, loan documents		M&E expert MCVDD MAEP Operational Partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
support the adoption of sustainable nature-based livelihoods		communities in mangrove landscapes					
Component 3: Enabling environment for sustainable management of mangrove ecosystems in a context of climate change							
<u>Outcome 3:</u> National institutional and policy frameworks strengthened to sustainably manage mangrove landscapes in a context of climate change and knowledge about climate-resilient mangrove ecosystem management improved, captured and disseminated	**Indicator 1:** Number of local decrees developed and proposed amendments to policy documents to support the sustainable and climate resilient mangrove management **Indicator 2:** Number of institutional coordination mechanisms for integrated planning of mangrove landscape strengthened	Few local decrees focus on applying existing national policies for the sustainable management and protection of mangrove ecosystems. Current planning processes do not sufficient involved local communities and all relevant sectors.	**Target 1:** At least two local decrees developed to support the sustainable and climate resilient mangrove management **Target 2:** At least one institutional coordination mechanisms for integrated planning of mangrove landscape strengthened	**Target 1:** At least three local decrees developed and proposed amendment to one national law to support the sustainable and climate resilient mangrove management **Target 2:** At least two institutional coordination mechanisms (one collaboration platform and one decision-making and planning process) for integrated planning of mangrove landscape strengthened	Local decrees, draft policy documents, decision-making and planning guidelines, procedures and tools	A5 – National government institutions involved in natural resources' management continue to acknowledge the necessity to increase inter-sectoral collaboration to protect and sustainably management mangrove ecosystems. A6 – Mangrove ecosystems are able to adapt to changing climate conditions (e.g. increased temperature and salinity, droughts, floods, winds and SLR) and future suitable	M&E expert MCVDD MAEP Operational Partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
						habitat can be identified.	
Output 3.1 Institutional and legal framework pertaining to mangrove landscapes' management (including community-based management) strengthened	**Indicator 1:** Number of local decrees developed and proposed amendments to policy documents to support the sustainable and climate resilient mangrove management **Indicator 2:** Number of institutional coordination mechanisms for integrated planning of mangrove landscape strengthened	Few local decrees focus on applying existing national policies for the sustainable management and protection of mangrove ecosystems. Current planning processes do not sufficient involved local communities and all relevant sectors.	**Target 1:** At least two local decrees developed to support the sustainable and climate resilient mangrove management **Target 2:** At least one institutional coordination mechanisms for integrated planning of mangrove landscape strengthened	**Target 1:** At least three local decrees developed and proposed amendment to one national law to support the sustainable and climate resilient mangrove management **Target 2:** At least two institutional coordination mechanisms (one collaboration platform and one decision-making and planning process) for integrated planning of mangrove landscape strengthened	Local decrees, draft policy documents, decision-making and planning guidelines, procedures and tools		M&E expert MCVDD MAEP Operational Partners
Output 3.2 Capacity development plan designed and implemented for governmental institutions working on mangroves in Benin and the region to be able to support	Number of capacity development events organised for government institutions	Government institutions have insufficient technical and institutional capacity to support integrated, participatory and gender-sensitive	At least five capacity development events organised for government institutions (study visits, research exchange programmes, training sessions)	At least nine capacity development events organised for government institutions (study visits (3), research exchange programmes (2), training sessions (4))	Reports from capacity development interventions, interviews with government staff, reports of planning processes		M&E expert MCVDD MAEP Operational Partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
integrated, participatory and gender-sensitive processes for the sustainable management of mangrove landscapes		processes for the sustainable management of mangrove landscapes					
Output 3.3 Knowledge and awareness on climate-resilient mangrove ecosystems conservation and sustainable use strengthened to benefit decision making at the national scale	Number of knowledge events undertaken, and tools developed and disseminated	There is no system to centralise the knowledge on mangroves in Benin. Some new platforms have been created at the regional level but they need support.	At least six knowledge events undertaken, and tools developed and disseminated (database – 1, communication material on the project – 4, national platform on mangrove management – 1, state of mangrove ecosystems' reports – 2, awareness-raising tools – 3, regional knowledge-sharing events – 2, and participation to international knowledge-sharing events – 2)	At least 15 knowledge events undertaken, and tools developed and disseminated (database – 1, communication material on the project – 4, national platform on mangrove management – 1, state of mangrove ecosystems' reports – 2, awareness-raising tools – 3, regional knowledge-sharing events – 2, and participation to international knowledge-sharing events – 2)	Knowledge sharing tools, reports from knowledge sharing events, communication tools on the project results and lessons learned		M&E expert Communication Officer M&E expert MCVDD MAEP
Output 3.4 Project's Monitoring & Evaluation plan implemented	Number of M&E report submitted	N/A	At least two M&E report submitted	At least six M&E report submitted (including the Final Evaluation report)	M&E report, data collected		M&E expert MCVDD FAO

Annex A2: Project Budget

Budget_Mangrove_
Benin_CER.xlsx

Please see budget attached as a separate document.

Annex B: Response to Project Reviews

STAP comment	Response	Document reference
STAP Overall Assessment: Minor issues to be considered during project design STAP acknowledges FAO's proposal "Strengthening human and natural systems resilience to climate change through mangrove ecosystems' conservation and sustainable use in southern Benin". The project aims to increase the adaptive capacity of human and natural systems to climate change through mangrove ecosystem restoration in southern Benin. The project will target communities and their agricultural, forestry, and fisheries practices. STAP appreciates the description of the problem in the theory of change. To strengthen the problem analysis, STAP recommends using a systems analysis. This will allow for a more rigorous description of the drivers, shocks, key stakeholders needed to enact change, and linkages (including cross-scale linkages) between biophysical and social elements. Reflecting this systems analysis in the theory of change will also be important to continually assess the resilience of the social-ecological system –and monitor for opportunities to adapt, or transform the social-ecological system to address known, and unknown, risks and shocks. STAP highlights below the need for incremental adaptations to deliver transformational change. As climate risks are considered in the design of the project, STAP recommends paying close attention to the impact of sea level rise on mangrove ecosystems in Lake Ahémé and Porto Novo lagoon and Lac Nokoué. Current literature indicates that mangroves will be affected by a sea level rise of 6-7 millimeters a year. Thus, it will be important for the project to consider different pathways that sustainably overcome the long-term changes resulting from sea-level rise, and other climate risks. Below, STAP describes further its guidance.	A system analysis was implemented as much as possible during the PPG phase. The remaining knowledge gaps on the socioeconomic drivers of mangrove degradation will be addressed during P1. Future suitable habitat under the climate scenario and their expected effects including SLR, will be identified under Output 1.1 and integrated in the CBO area and management plans to enable mangrove ecosystem to respond to changes in climatic conditions and their effects (e.g. soil salinity). Connectivity between mangrove areas will also be increased through the establishment of corridors to strengthen mangroves' resilience. Assumptions linked to the connectivity between the interventions, climate resilience and biodiversity conservation were identified accordingly in the Theory of Change.	**Part II 1.a. 2) 2.1 Root causes** **Part II 1.a. 3) Alternative Scenario**
1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed: The challenges Benin faces with regard to climate change and biodiversity are well-mapped in the PIF. STAP appreciates that the project has considered more than one plausible climate future in its problem statement. However, STAP suggests that in the design stage the project move from an extensive listing of challenges to an understanding of their interconnections that might inform the identification and design of effective interventions that ameliorate as many challenges as possible while minimizing the risk of interventions that exacerbate risks and challenges even while addressing others. Just as the PIF rightly	The interconnections between the different threats on mangrove ecosystems were further identified and taken into consideration to design multibeneficial and cost effective interventions. As an example, national (and international) ecotourism will address issues of inadequate practices within mangroves, support their restoration and where possible their expansion within Ramsar site 1018, and provide funding for long-term maintenance and monitoring. Agroecology and agrotourism will provide a diversity of benefits such as biodiversity increase, income diversification and resilience reducing encroachment, less pollution and costs through reduced use of pesticides and chemical fertilisers, and preservation of culinary	**Part II 2) 2.1. Root causes** **Part II 1.a. 3) 3.2. Alternative Scenario**

characterizes barriers and threats as a web, so too the challenges this project seeks to address are also a web.	traditions. The preservation of medicinal plants will help maintain traditional knowledge, reduce mangrove degradation, conservation indigenous species and create resilient, biodiversity-friendly, nature-based revenue.	
The barriers are well-described, but the PIF does not include data or references to support these descriptions. This may be a product of the fact that the barriers are largely institutional (capacity, existing models for management, existing investment and management plans) for which evidence is not likely to be found in reports or refereed literature.	The description of the baseline situation and barriers have been further refined and now include the corresponding literature references.	**Part II 1.a. 1) 1.2. General context** **Part II 2) 2.1. Barriers** **Part II 3) 3.2. Alternative scenario**
2) the baseline scenario or any associated baseline projects: The baseline, as articulated in the PIF, is largely centered on current conditions, rather than extending those conditions into the future to define likely trends in mangrove health and the adaptive capacity of the populations living around them. STAP recommends the project extend the baseline out, ideally to 2050 but to whatever extent possible with data at hand, to create a basis for the quantification of the project's impacts.	Climate scenarios up to 2100 are currently available and will be considered in the design of the interventions on the ground, including to identify future suitable mangrove habitat under Output 1.1. The indicators will have to be refined by the M&E expert in alignment with the management plans to be developed under Output 1.3 in order to enable tracking of the evolution of mangrove degradation, improvements and shifts.	**Part II 1.a. 1) 1.2. General context** **Part II 3) 3.2. Alternative scenario**
"Is the baseline sufficiently robust to support the incremental (additional cost) reasoning for the project?" It does not, because it does not provide a baseline into the future against which to measure project impacts.	Future climate scenario are now fully integrated into the project design to ensure that resilience is maximised. The baseline level will be informed through addressing knowledge gaps under Output 1.1, complemented by the M&E plan.	**Part II 3) 3.2. Alternative scenario**
There are multiple baselines, in that the project does characterize current climate impacts and other non-climate drivers of mangrove degradation. However, none of these are extended significantly beyond the present, and therefore none can specify the benefits of the project.	Existing climate scenario will guide the design of the Integrated Mangrove Ecosystems' Management Plan to ensure that they include areas of future habitat suitability.	**Part II 3) 3.2. Alternative scenario**
3) the proposed alternative scenario with a brief description of expected outcomes and components of the project: Yes, the mechanisms of change are plausible. STAP appreciates the very clear articulation of assumptions in the ToC file. STAP also notes that the project assumes that the adoption of new livelihoods activities will be principally facilitated by demonstration of economic benefit (both in the PIF and assumption A2 in the ToC). An extensive livelihoods literature demonstrates that economic incentives, while part of livelihoods decision-making, are not always (or perhaps even often) determinative of decisions to take up a new activity. Also critical are questions of fit to the sociocultural context, as livelihoods activities are often closely tied to identity. STAP suggests that the project carefully consider the dimensions it will	The project builds on previous experience from the RBT-Mono project in Grand-Popo and Ouidah. According to the consultations during the PPG phase, increased economic value of the targeted natural ecosystems and strong engagement of local communities has resulted in a significant decrease in the pressure on these ecosystems in Ouidah commune. Similarly, in Grand-Popo, EcoBenin's interventions in ecotourism development has resulted in the maintenance of mangrove ecosystems. These two communes present the largest and healthiest mangrove ecosystems which is believed to result from these investments. Increased economic value of mangrove ecosystems through ecotourism and the strengthening of sustainable NTFP value chains is therefore expected to create robust incentives for mangroves' preservation in the other targeted communes.	**Part II 1.a. 1) 1.2. General context** **Part II 1.a. 3) Alternative scenario**

While the PIF does point to aspects where the project will have to be developed in the subsequent design of the project, or even in the course of project implementation, there is no explicit discussion of adaptations that might be needed to deal with changing conditions, including the impacts of sea level rise on mangroves. Other risks to the project, and possible adaptations needed, are covered in the risks section of the PIF. STAP recommends that as part of the effort to extend the baseline into the future described above, the project consider any likely near-term impacts that might influence project implementation and outcomes.	A thorough identification of the risks to the project success and sustainability is provided in the Risks section. Existing climate scenario will guide the design of the Integrated Mangrove Ecosystems' Management Plan to ensure that they include areas of future habitat suitability.	**Part II 1.a. 3) Alternative scenario** **Part II 5. Risks**
7) Innovativeness, sustainability and potential for scaling-up: The project will focus on developing system level, organizational, and individual capacities – specifically, working to develop institutional and individual capacities to facilitate the emergence of a system that is environmentally sound and economically viable. STAP recommends the project develop more specific plans for scaling up in the design stage of the project.	Scaling up will be achieved through: the landscape-level approach, the participation of a broad range of government and non-government stakeholders to the participatory planning processes, the organisation of exchange visits for peer-to-peer learning, increased access to data and knowledge for all sectors at the national level, and the use of newly created regional knowledge sharing and collaboration platforms.	**Part II 1.a. 3) Alternative scenario** **Part II 1.a. 3) Innovativeness**
The project will require incremental adaptations, though long-term sustainability will require that these incremental adaptations add up to a transformation of the socio-ecological system around mangroves in Benin.	The awareness-raising training, tools and campaign on the role of mangrove ecosystems and existing economic opportunities through their preservation will support a behavioral change towards mangroves' preservation and biodiversity-friendly practices. The CBNRM approach and the participatory management plans will strengthen and expend previous efforts in transforming the way natural resources are managed in Benin coastal areas. The integration of spiritual beliefs and traditional knowledge of mangrove landscapes' medicinal plants will strengthen the link between local communities livelihoods and mangrove ecosystems' health.	**Part II 1.a. 3) Alternative scenario** **Part II 1.a. 3) Innovativeness**
1b. Maps The map adequately describes the project activity locations. STAP recommends following its guidance on maps in its Earth Observation document as some key elements appear missing from the maps. STAP guidance can be found at: https://www.stapgef.org/earth-observation-and-gef	New maps have been created by a GIS specialist using satellite images and field visits. These maps are aligned with GEF guidelines.	**Part II 1.a. 1) 1.2. General context** **Annex L**
3. Gender Equality and Women's Empowerment: While the PIF recognizes that women often have different activities and emphases in their livelihoods when compared to men, it does not describe any specific gender-differentiated risks or opportunities. It does note that a gender responsive rapid assessment will be conducted early in the project implementation, but on the whole suggests that the principal beneficiaries of the project will be women, with the promotion of equality and empowerment extending to access to and control over resources and economic benefits and services. STAP recommends the project conduct the gender assessment at the design stage of the project to identify gender-specific opportunities and challenges, particularly social barriers to women's	The gender-based differences in decision making at household and community level, and in income-generating activities, were clarified during the PPG phase and have informed the design of the project interventions in order to maximise women participation and empowerment. Gender-sensitive indicators were integrated in the project's results framework and a Gender Action Plan was designed. The continuous monitoring of gender inclusion to ensure 50% of women beneficiaries – and implementation of necessary corrective measures where required following an adaptive approach – will be ensured by the Gender Officer together with the M&E specialist.	**Part II 1.a. 3) Alternative scenario** **Part II 3. Gender equality** **Annex A1** **Annex I2**

participation in different livelihoods activities or environmental governance. These issues can then be address through project design before they become challenges for implementation and project outcomes. STAP also recommends the project include the development of gender-sensitive indicators at the project design stage. Such indicators should, at a minimum, allow for the collection of gender-disaggregated data.		
It is not possible to assess this through this PIF. STAP recommends assessing the social, economic, and environmental barriers to participation for a range of stakeholder groups at the design stage.	A thorough identification of social, economic, and environmental barriers was undertaken during the PPG phase. Knowledge gaps that could not be addressed during the PPG phase will be addressed during PY1.	**Part II 1.a. 1) 1.2. General context Part II 2) 2.1. Barriers Part II 1.a. 3) Alternative scenario**
5. Risks. The risks are valid and comprehensive. There are both social and environmental risks that could affect the project, but the PIF describes how the project plans to address those risks. The PIF does not detail how the project will be affected by climate risks between 2020-2050. As noted above, the baseline does not extend into the future, and as a result the measured benefits from the project also do not extend into the future. The sensitivity of the project to climate change and climate impacts has not been assessed, though the risks section does note that future climate change could hinder conservation and restoration efforts. For example, the literature asserts that a sea level rise above 5 millimeters a year will significantly impact mangrove ecosystems, and the services they provide to human and natural systems. Refer to: https://science.sciencemag.org/content/368/6495/1050 As the project's goals include building the resilience of both ecosystems and social systems in the project area, in some ways the project itself is an answer to how this risk will be managed. The PIF does not detail the capacity and information needed to address climate risk and resilience enhancement measures specifically, but it does discuss capacity needs across all project risks, including some attention to climate change and climate impacts. STAP recommends developing a systems-based theory of change, or implementing resilience assessments, that monitor adaptative capacity of the social-ecological system to cope with changes (foreseen and unforeseen). Refer to STAP's theory of change primer, and RAPTA: https://www.stapgef.org/theory-change-primer https://www.stapgef.org/rapta-guidelines	Existing climate scenario will guide the design of the Integrated Mangrove Ecosystems' Management Plan to ensure that they include areas of future habitat suitability. Latest knowledge on the sensitivity of mangrove species to climate change and its effects have been integrated in the project design and will continue to inform the project implementation. Research projects on mangroves resilience and response to climate change will also be funded under the project to expand the knowledge available and inform current and future investments in mangrove conservation.	**Part II 1.a. 1.2 Climate conditions Part II 1.a. 3) Alternative scenario**
8. Knowledge management. The project does not yet have a developed knowledge management strategy, but intends to focus on the dissemination of lessons learned within and beyond the project, including through scientific, policy, and other networks. The PIF notes that a KM strategy will be	The knowledge management interventions at the local, national and regional level were further designed during the PPG phase based on the gender-based differences identified (e.g. identification of specific events to maximise women participation, identification of existing knowledge sharing platform at the regional level	**Part II 1.a. 3) Alternative scenario Part II 8. Knowledge management**

developed, and STAP suggests this be completed at the project design stage.	and consultations of corresponding stakeholders). This will be refined during PY1 through the development of the knowledge management strategy by the communication officer.	

Comments from Council

Canada Comments It is important to take into account short-term issues (COVID-19) and long-term concerns (adaptation to climate change) and with a view to improving the economic and environmental resilience of the most vulnerable populations in these projects. Canada believes that the joint attention of FAO Forests and FAO Food Security initiatives will be central to success of this approach.	Short-term issues such as COVID-19 pandemic and long-term concerns linked to future climate conditions were taken into account in the design of the project to make it as resilient as possible to these external factors (please see Part II Section 1.a Subsections 1, 2 and 3, and Part II Section 5). Noted with thanks. The project taps into a long experience and lessons, both in the sub-region and country of work along this nexus. See sections on baseline and lessons.
France Comments Coordination with other projects, for instance financed by the FFEM: • This project implemented by FAO should be coordinated with the WACA program, which is co-financed by the WB and, for its nature-based solutions component, by the FFEM. It should also be coordinated with the mangrove project in Costa Rica and Benin (methodology/governance) supported by the FFEM, knowing that the Ministry of the Environment of Benin is the common interlocutor and that the project areas must be identical or very close, given the small extent of mangroves in Benin.	Yes, the WACA programme is now the main co-financing source of the GEF-funded project and complementarity between the two initiatives will be maximised. Opportunities for complementarity were also identified with relevant ongoing projects working in mangrove landscapes such as the FFEM project "Mangrove restauration, conservation and sustainable management under climate change in Costa Rica and Benin". The engagement of CORDE – who works on the FFEM project – as an Operational Partner for the proposed project will ensure this cross-pollination.
Germany Comments Germany welcomes this project, which aims to resilience of mangrove ecosystems and their dependent agricultural, forestry and fishery communities in Southern Benin. The community-centric ecosystem conservation approach to increase the resilience of mangroves and livelihoods depending on them is promising. This project has the potential to ensure the resilience of the two target areas while also linking related and complementary approaches in other areas. Synergies with and co-financing through several on-going projects have also been identified. Furthermore, Germany appreciates the consistency with national strategies and clear linkages to NAPA, INDC and the Low Carbon and Climate Resilient Development Strategy. Germany requests that the following requirements are taken into account during the design of the final project proposal: • GCF co-financing: Germany welcomes the high volume of co-financing. Among others, the proposal refers co-financing from a GCF-financed initiative ($30,000,000) Germany shares the view of the GEF Secretariat (PIF Review) on the importance of including more detailed explanations on what that project is financing exactly. • COVID 19 strategy: Germany appreciates that COVID-19 addressed in its risk section as well as project design. Still, Germany shares the view of the GEF Secretariat (PIF Review) that a strategy or action framework for the pandemic should be added.	GCF co-financing: this was actually changed as more relevant cofinancing opportunities were identified. Also the timelines of both the GCF and GEF investments do not coincide. COVID-19 strategy: No specific strategy was developed but the project budget does account for containment measures in place, and likely to remain in place (e.g. training costs budget the costs of sanitation measures). Furthermore, priority was given to local stakeholders and service providers across the interventions to minimise the impact of a travel ban on the project. Vulnerability assessment: The interventions to be undertaken under Component 1 have been refined building the initiatives from previous initiatives and the remaining priority knowledge gaps. Specific socio-economic assessments will be undertaken to increase understanding of communities linkages with mangroves rather than vulnerability assessments. Key stakeholders: FNEC was removed from the PSC following discussion with National institutions. FNEC will however be specifically targeted under Output 2.1.3 together with other national funding processes to integrate biodiversity and climate change adaptation considerations. Gender: Gender is strongly integrated across the three components of the project in the ProDoc. Specific activities for women engagement in decision-making and planning interventions, and livelihoods preferred by women have been targeted. Furthermore, women training in leadership will be

• Vulnerability assessments: Germany welcomes the preparation of in-depth vulnerability studies planned under component 1 of the project. However, Germany recommends highlighting how the results of these studies will be used in strengthening knowledge availability, awareness and decision-making support under component 3. In addition, the vulnerability studies should take into consideration the cross-border effects of measure in the coastal zone in the region. • Key stakeholder: Germany welcomes the implication of the National Fund for the Environment and Climate (FNEC) in the Steering Committee of the project since FNEC plays an important role in mobilizing national and international funds (e.g. Adaptation Fund, Green Climate Fund). In this frame, FNEC is supporting local actors in mangrove related activities. It is recommended that the role of FNEC as a key stakeholder is strengthened in the frame of the project especially with regard to capacity development activities A stronger implication of FNEC in the project allows furthermore for better identifying interlinkages with ongoing and planned small- and large-scale projects as well as with future call for proposals by FNEC in order to upscale project activities. • Gender: Germany welcomes that the gender gap has clearly been identified with regards to social and economic disadvantages. However, no link has been shown between gender and adaptation to climate change. Germany recommends that the gender aspect is stronger included in the vulnerability studies and the identification of alternative nature-based livelihoods under component 2 in order to strengthen gender-empowering alternative livelihoods. • Cooperation with other projects: Germany welcomes the consideration of the WACA project in the project proposal to take into consideration the cross-border nature of interventions in the project zone. However, Germany recommends that greater consideration be given to what mechanisms are available or needed to ensure transnational exchange and decision-making with implication of the relevant stakeholders on national and local level to increase the effectiveness of the activities proposed by the project. • Conceptualisation of biodiversity: Germany appreciate the biodiversity approach to increasing resilience. However, in the proposal the term “biodiversity” is used in in a general matter. It is not clearly defined which species are looked at specifically in the frame of the project. Therefore, Germany recommends listing the species that will be looked at by the project to evaluate its contribution to biodiversity conservation. • Project Area: Germany appreciate the selection of the project areas. The proposal mentions the Mono Delta Biosphere that overlaps partly with the project area. Other than this, the biosphere reserve created in October 2020 in the Basse Vallée de l’Ouémé should be taken into account as well in the project design to analyse potential overlaps with project sites and to analyse endangered species in this site to be taken into account.	provided to support increased involvement of women in community dynamics. Cooperation with other projects: Please see above. WACA is now the main cofinancing source, strong collaboration and synergies will be established accordingly. Regional collaboration is an important focus on the project under Output 3.3. Conceptualisation of biodiversity: Some specific rare tree species (e.g. *Laguncularia racemosa*, *Rhizophora harisonii*, *Conocarpus erectus)* will be the focus on research projects under Output 1.1 to support their conservation. Emblematic animal species will also be targeted under Output 1.4 (e.g. turtle, manatees, hippopotamus, slender-snouted crocodiles). Project Area: The nine communes containing mangrove ecosystems within the two RAMSAR sites are targeted under the GEF-funded project. This includes the Mono-RBT and the Biosphere Reserve of the Lower Valley of Ouémé.

Annex C: Status of Utilization of Project Preparation Grant (PPG)
(Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: **50,000** GCP /BEN/065/GFF			
Project Preparation Activities Implemented	***GETF Amount ($)***		
	Budgeted Amount	***Amount Spent To date***	***Amount Committed***
(5011) Salaries Professional	6,000		879
(5013) Consultants	30,000	35,121	
(5014) Contracts			
(5021) Travel	10,000	8,925	1,075
(5023) Training	4,000	3,165	835
Total	**50,000**	**47,211**	**2,789**

PPG Grant Approved at PIF: **100,000** GCP /BEN/067/LDF			
Project Preparation Activities Implemented	***LDCF Amount ($)***		
	Budgeted Amount	***Amount Spent To date***	***Amount Committed***
(5011) Salaries Professional	1,500		1,500
(5013) Consultants	72,000	66,997	5,003
(5014) Contracts			
(5021) Travel	22,500		22,500
(5023) Training	4,000	2,473	1,527
Total	**100,000**	**69,470**	**30,530**

Annex D: Calendar of Expected Reflows (if non-grant instrument is used)

N/A

Annex E: Project Map(s) and Coordinates
Report GIS expert_Dr Kouton Meryas_October2021.docx

Annex F: GEF TF / LDCF/ SCCF Core Indicator Worksheet

Core Indicator 1	**Terrestrial protected areas created or under improved management for conservation and sustainable use**						***(Hectares)***
			Hectares (1.1+1.2)				
			Expected		Achieved		
			PIF stage	Endorsement	MTR	TE	
Indicator 1.1	Terrestrial protected areas newly created						
Name of Protected Area	WDPA ID	IUCN category	Hectares				
			Expected		Achieved		
			PIF stage	Endorsement	MTR	TE	
		(select)					

		(select)					
		Sum					
Indicator 1.2	Terrestrial protected areas under improved management effectiveness						
Name of Protected Area	WDPA ID	IUCN category	Hectares	METT Score			
				Baseline		Achieved	
					Endorsement	MTR	TE
		(select)					
		(select)					
		Sum					
Core Indicator 2	**Marine protected areas created or under improved management for conservation and sustainable use**						***(Hectares)***
				Hectares (2.1+2.2)			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	*TE*
Indicator 2.1	Marine protected areas newly created						
Name of Protected Area	WDPA ID	IUCN category		Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
		(select)					
		(select)					
		Sum					
Indicator 2.2	Marine protected areas under improved management effectiveness						
Name of Protected Area	WDPA ID	IUCN category	Hectares	METT Score			
				Baseline		Achieved	
				PIF stage	Endorsement	MTR	TE
		(select)					
		(select)					
		Sum					
Core Indicator 3	**Area of land restored**						***(Hectares)***
				Hectares (3.1+3.2+3.3+3.4)			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.1	Area of degraded agricultural land restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.2	Area of forest and forest land restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.3	Area of natural grass and shrublands restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Indicator 3.4	Area of wetlands (including estuaries, mangroves) restored						
				Hectares			
				Expected		Achieved	
				PIF stage	Endorsement	MTR	TE
Core Indicator 4	**Area of landscapes under improved practices (hectares; excluding protected areas)**						***(Hectares)***
				Hectares (4.1+4.2+4.3+4.4)			
				Expected		Expected	

			PIF stage	Endorsement	MTR	TE
			120,000	*50,000*		
Indicator 4.1	Area of landscapes under improved management to benefit biodiversity					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
			120,000	*50,000*		
Indicator 4.2	Area of landscapes that meet national or international third-party certification that incorporates biodiversity considerations					
Third party certification(s):			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 4.3	Area of landscapes under sustainable land management in production systems					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 4.4	Area of High Conservation Value Forest (HCVF) loss avoided					
Include documentation that justifies HCVF			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Core Indicator 5	**Area of marine habitat under improved practices to benefit biodiversity**					***(Hectares)***
Indicator 5.1	Number of fisheries that meet national or international third-party certification that incorporates biodiversity considerations					
Third party certification(s):			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 5.2	Number of large marine ecosystems (LMEs) with reduced pollution and hypoxial					
			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 5.3	Amount of Marine Litter Avoided					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Core Indicator 6	**Greenhouse gas emission mitigated**					***(Metric tons of CO_2e)***
			Expected metric tons of CO_2e (6.1+6.2)			
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)					
	Expected CO2e (indirect)					
Indicator 6.1	Carbon sequestered or emissions avoided in the AFOLU sector					
			Expected metric tons of CO_2e			
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)					
	Expected CO2e (indirect)					
	Anticipated start year of accounting					
	Duration of accounting					

Indicator 6.2	Emissions avoided Outside AFOLU					
			Expected metric tons of CO_2e			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)					
	Expected CO2e (indirect)					
	Anticipated start year of accounting					
	Duration of accounting					
Indicator 6.3	Energy saved					
			MJ			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 6.4	Increase in installed renewable energy capacity per technology					
		Technology	Capacity (MW)			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		(select)				
		(select)				
Core Indicator 7	**Number of shared water ecosystems (fresh or marine) under new or improved cooperative management**					***(Number)***
Indicator 7.1	Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE
Indicator 7.2	Level of Regional Legal Agreements and Regional Management Institutions to support its implementation					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE
Indicator 7.3	Level of National/Local reforms and active participation of Inter-Ministerial Committees					
		Shared water ecosystem	Rating (scale 1-4)			
			PIF stage	Endorsement	MTR	TE
Indicator 7.4	Level of engagement in IWLEARN through participation and delivery of key products					
		Shared water ecosystem	Rating (scale 1-4)			
			Rating		Rating	
			PIF stage	Endorsement	MTR	TE
Core Indicator 8	**Globally over-exploited fisheries Moved to more sustainable levels**					***(Metric Tons)***
Fishery Details			Metric Tons			
			PIF stage	Endorsement	MTR	TE
Core Indicator 9	**Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products**					***(Metric Tons)***
			Metric Tons (9.1+9.2+9.3)			
			Expected		Achieved	
			PIF stage	PIF stage	MTR	TE
Indicator 9.1	Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)					
POPs type			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
(select)	(select)	(select)				

(select)	(select)	(select)				
(select)	(select)	(select)				
Indicator 9.2	Quantity of mercury reduced					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.3	Hydrochloroflurocarbons (HCFC) Reduced/Phased out					
			Metric Tons			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.4	Number of countries with legislation and policy implemented to control chemicals and waste					
			Number of Countries			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.5	Number of low-chemical/non-chemical systems implemented particularly in food production, manufacturing and cities					
		Technology	Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 9.6	Quantity of POPs/Mercury containing materials and products directly avoided					
			Metric Tons			
				Expected		Achieved
			PIF stage	Endorsement	PIF stage	Endorsement
Core Indicator 10	**Reduction, avoidance of emissions of POPs to air from point and non-point sources**					***(grams of toxic equivalent gTEQ)***
Indicator 10.1	Number of countries with legislation and policy implemented to control emissions of POPs to air					
			Number of Countries			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 10.2	Number of emission control technologies/practices implemented					
			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Core Indicator 11	**Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment**					***(Number)***
			Number			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		Female	*125,000*	*150,000*		
		Male	*125,000*	*150,000*		
		Total	*250,000*	*300,000*		

Annex G: GEF Project Taxonomy Worksheet

Level 1	Level 2	Level 3	Level 4
☒**Influencing models**			
	☒**Transform policy and regulatory environments**		

	☒**Strengthen institutional capacity and decision-making**		
	☒**Convene multi-stakeholder alliances**		
	☒**Demonstrate innovative approaches**		
	☐**Deploy innovative financial instruments**		
☒**Stakeholders**			
	☐**Indigenous Peoples**		
	☒**Private Sector**		
		☒Capital providers	
		☒Financial intermediaries and market facilitators	
		☒Large corporations	
		☒SMEs	
		☒Individuals/Entrepreneurs	
		☐Non-Grant Pilot	
		☐Project Reflow	
	☒**Beneficiaries**		
	☒**Local Communities**		
	☒**Civil Society**		
		☒Community Based Organization	
		☒Non-Governmental Organization	
		☒Academia	
		☐Trade Unions and Workers Unions	
	☒**Type of Engagement**		
		☒Information Dissemination	
		☒Partnership	
		☒Consultation	
		☒Participation	
	☒**Communications**		
		☒Awareness Raising	
		☒Education	
		☒Public Campaigns	
		☒Behavior Change	
☒**Capacity, Knowledge and Research**			
	☒**Enabling Activities**		
	☒**Capacity Development**		
	☒**Knowledge Generation and Exchange**		
	☒**Targeted Research**		
	☒**Learning**		
		☒Theory of Change	
		☒Adaptive Management	
		☒Indicators to Measure Change	
	☒**Innovation**		
	☒**Knowledge and Learning**		
		☒Knowledge Management	
		☒Innovation	
		☒Capacity Development	
		☒Learning	
	☒**Stakeholder Engagement Plan**		
☒**Gender Equality**			
	☒**Gender Mainstreaming**		
		☒Beneficiaries	
		☒Women groups	
		☒Sex-disaggregated indicators	
		☒Gender-sensitive indicators	
	☒**Gender results areas**		
		☒Access and control over natural resources	
		☒Participation and leadership	
		☒Access to benefits and services	
		☒Capacity development	
		☒Awareness raising	
		☒Knowledge generation	
☒**Focal Areas/Theme**			

	☐ **Integrated Programs**		
		☐ Commodity Supply Chains ([103]Good Growth Partnership)	
			☐ Sustainable Commodities Production
			☐ Deforestation-free Sourcing
			☐ Financial Screening Tools
			☐ High Conservation Value Forests
			☐ High Carbon Stocks Forests
			☐ Soybean Supply Chain
			☐ Oil Palm Supply Chain
			☐ Beef Supply Chain
			☐ Smallholder Farmers
			☐ Adaptive Management
		☐ Food Security in Sub-Sahara Africa	
			☐ Resilience (climate and shocks)
			☐ Sustainable Production Systems
			☐ Agroecosystems
			☐ Land and Soil Health
			☐ Diversified Farming
			☐ Integrated Land and Water Management
			☐ Smallholder Farming
			☐ Small and Medium Enterprises
			☐ Crop Genetic Diversity
			☐ Food Value Chains
			☐ Gender Dimensions
			☐ Multi-stakeholder Platforms
		☐ Food Systems, Land Use and Restoration	
			☐ Sustainable Food Systems
			☐ Landscape Restoration
			☐ Sustainable Commodity Production
			☐ Comprehensive Land Use Planning
			☐ Integrated Landscapes
			☐ Food Value Chains
			☐ Deforestation-free Sourcing
			☐ Smallholder Farmers
		☐ Sustainable Cities	
			☐ Integrated urban planning
			☐ Urban sustainability framework
			☐ Transport and Mobility
			☐ Buildings
			☐ Municipal waste management
			☐ Green space
			☐ Urban Biodiversity
			☐ Urban Food Systems
			☐ Energy efficiency
			☐ Municipal Financing
			☐ Global Platform for Sustainable Cities
			☐ Urban Resilience
	☒ **Biodiversity**		
		☐ Protected Areas and Landscapes	
			☐ Terrestrial Protected Areas
			☐ Coastal and Marine Protected Areas
			☐ Productive Landscapes
			☐ Productive Seascapes
			☐ Community Based Natural Resource Management
		☒ Mainstreaming	
			☐ Extractive Industries (oil, gas, mining)
			☒ Forestry (Including HCVF and REDD+)
			☒ Tourism
			☒ Agriculture & agrobiodiversity
			☒ Fisheries
			☐ Infrastructure
			☒ Certification (National Standards)
			☐ Certification (International Standards)
		☐ Species	

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			☐ Illegal Wildlife Trade
			☐ Threatened Species
			☐ Wildlife for Sustainable Development
			☐ Crop Wild Relatives
			☐ Plant Genetic Resources
			☐ Animal Genetic Resources
			☐ Livestock Wild Relatives
			☐ Invasive Alien Species (IAS)
		☒ Biomes	
			☒ Mangroves
			☐ Coral Reefs
			☐ Sea Grasses
			☒ Wetlands
			☐ Rivers
			☐ Lakes
			☐ Tropical Rain Forests
			☐ Tropical Dry Forests
			☐ Temperate Forests
			☐ Grasslands
			☐ Paramo
			☐ Desert
		☐ Financial and Accounting	
			☐ Payment for Ecosystem Services
			☐ Natural Capital Assessment and Accounting
			☐ Conservation Trust Funds
			☐ Conservation Finance
		☐ Supplementary Protocol to the CBD	
			☐ Biosafety
			☐ Access to Genetic Resources Benefit Sharing
	☐ **Forests**		
		☐ Forest and Landscape Restoration	
			☐ REDD/REDD+
		☐ Forest	
			☐ Amazon
			☐ Congo
			☐ Drylands
	☐ **Land Degradation**		
		☐ Sustainable Land Management	
			☐ Restoration and Rehabilitation of Degraded Lands
			☐ Ecosystem Approach
			☐ Integrated and Cross-sectoral approach
			☐ Community-Based NRM
			☐ Sustainable Livelihoods
			☐ Income Generating Activities
			☐ Sustainable Agriculture
			☐ Sustainable Pasture Management
			☐ Sustainable Forest/Woodland Management
			☐ Improved Soil and Water Management Techniques
			☐ Sustainable Fire Management
			☐ Drought Mitigation/Early Warning
		☐ Land Degradation Neutrality	
			☐ Land Productivity
			☐ Land Cover and Land cover change
			☐ Carbon stocks above or below ground
		☐ Food Security	
	☐ **International Waters**		
		☐ Ship	
		☐ Coastal	
		☐ Freshwater	
			☐ Aquifer
			☐ River Basin
			☐ Lake Basin
		☐ Learning	

		☐Fisheries	
		☐Persistent toxic substances	
		☐SIDS : Small Island Dev States	
		☐Targeted Research	
		☐Pollution	
			☐Persistent toxic substances
			☐Plastics
			☐Nutrient pollution from all sectors except wastewater
			☐Nutrient pollution from Wastewater
		☐Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		☐Strategic Action Plan Implementation	
		☐Areas Beyond National Jurisdiction	
		☐Large Marine Ecosystems	
		☐Private Sector	
		☐Aquaculture	
		☐Marine Protected Area	
		☐Biomes	
			☐Mangrove
			☐Coral Reefs
			☐Seagrasses
			☐Polar Ecosystems
			☐Constructed Wetlands
	☐**Chemicals and Waste**		
		☐Mercury	
		☐Artisanal and Scale Gold Mining	
		☐Coal Fired Power Plants	
		☐Coal Fired Industrial Boilers	
		☐Cement	
		☐Non-Ferrous Metals Production	
		☐Ozone	
		☐Persistent Organic Pollutants	
		☐Unintentional Persistent Organic Pollutants	
		☐Sound Management of chemicals and Waste	
		☐Waste Management	
			☐Hazardous Waste Management
			☐Industrial Waste
			☐e-Waste
		☐Emissions	
		☐Disposal	
		☐New Persistent Organic Pollutants	
		☐Polychlorinated Biphenyls	
		☐Plastics	
		☐Eco-Efficiency	
		☐Pesticides	
		☐DDT - Vector Management	
		☐DDT - Other	
		☐Industrial Emissions	
		☐Open Burning	
		☐Best Available Technology / Best Environmental Practices	
		☐Green Chemistry	
	☒**Climate Change**		
		☒**Climate Change Adaptation**	
			☐Climate Finance
			☒Least Developed Countries
			☐Small Island Developing States
			☐Disaster Risk Management
			☒Sea-level rise
			☒Climate Resilience
			☒Climate information
			☒Ecosystem-based Adaptation
			☐Adaptation Tech Transfer
			☐National Adaptation Programme of Action
			☐National Adaptation Plan
			☒Mainstreaming Adaptation

			☒Private Sector
			☒Innovation
			☒Complementarity
			☒Community-based Adaptation
			☒Livelihoods
		☐**Climate Change Mitigation**	
			☐Agriculture, Forestry, and other Land Use
			☐Energy Efficiency
			☐Sustainable Urban Systems and Transport
			☐Technology Transfer
			☐Renewable Energy
			☐Financing
			☐Enabling Activities
		☐**Technology Transfer**	
			☐Poznan Strategic Programme on Technology Transfer
			☐Climate Technology Centre & Network (CTCN)
			☐Endogenous technology
			☐Technology Needs Assessment
			☐Adaptation Tech Transfer
		☒**United Nations Framework on Climate Change**	
			☒Nationally Determined Contribution

Annex H: Work Plan (indicative)

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1:																						
Output 1.1.1:	(i) Develop detailed maps of mangrove ecosystems distribution, health and tree density in the targeted communes																					
	(ii) Undertake inventories of flora and fauna in the mangroves of Ramsar site 1018 and update the inventories undertaken in Ramsar 1017 where necessary																					
	(iii) Develop fine scale maps of suitable habitat for mangroves by 2030, 2050 and 2100 under the climate scenario to support mangrove management planning under Output 1.3																					
	(iv) Address knowledge gaps on land-use changes and development/conversion trends in mangroves, lagoons and lakes, wetlands, gallery forests, farmland and plantations within the targeted mangrove landscapes to support the participatory management process under Output 1.3																					
	(v) Undertake a comprehensive analysis of the economic, social, cultural and environmental uses and value attributed to mangrove ecosystems in the targeted landscapes																					
	(vi) Establish research partnerships with universities, schools and/or research centres to address remaining knowledge gaps through Masters, PhDs and/or PostDocs																					
	(vii) Analyse the social, economic and/or cultural barriers to the success of previous initiatives in promoting alternative energy sources to Rhizophora racemosa‘s wood (e.g. understand the low uptake of																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	improved cook stoves) and identify reliable energy solutions																					
Output 1.1.2:	(i) Establish local awareness-raising platforms in the targeted sites through the identification of community champions and funding sources to support awareness raising and behavioural changes within their community groups																					
	(ii) Provide training on awareness-raising methods to identified community champions, as well as communal staffs, CSOs, local NGOs and local decision makers, and participatory development of awareness-raising tools																					
	(iii) Organise awareness-raising activities for local communities, CSOs, local authorities, agricultural extension and advisory services, private companies and other relevant stakeholders in the targeted mangrove landscapes on the ecosystem services provided by mangroves, the current threats faced by mangrove ecosystems, the current and expected impacts of climate change, adaptation opportunities (with a particular focus on ecosystem-based adaptation strategies), and the existing legal instruments related to mangrove ecosystems management																					
	(iv) Create environmental clubs in schools neighbouring the mangrove areas, provide training to teachers, raise awareness of scholars and establish plant nurseries in each club																					
Output 1.1.3:	(i) Create CBOs for natural resources management (i.e. ACCBs, APCs or others CBOs) where they do not yet exist																					
	(ii) Support ACCBs, APCs and other relevant CBOs in the targeted communes in developing or updating their management plans to ensure																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	adequate integration of biodiversity and climate change considerations in a participatory manner and in alignment with existing plans where adequate (e.g., Bouche du Roy and Gbaga MP to be aligned with the MP of the Mono Transboundary Biosphere Reserve which they are part of)																					
	(iii) Support the revision process for the Local Development Plans of the targeted communes planned in 2022 to integrate the sustainable management of mangrove landscapes																					
	(iv) Expand the National Strategy and Action Plan for the sustainable management of mangrove ecosystems 2020 to integrate the mangroves of Ramsar site 1018																					
	(v) Identify activities to secure land tenure with the Public Land and Environmental Services																					
Output 1.1.4:	(i) Signage to delineate the zones of the conservation area (including marine areas) and sacralisation process if adequate across the mangrove zones – including the buffer zone where harvesting is regulated and rotation system if adequate – taking into account future habitat suitability based on climate scenarios																					
	(ii) Support the creation process of Protected Areas/sanctuaries or other classified zones for mangrove ecosystems including as much as possible marine areas, including areas of future habitat suitability																					
	(iii) Support mangrove (ANR and/or direct), riverbank and coastal vegetation restoration interventions including the establishment of nurseries (in the Coastal Patch and the Patch of Porto-Novo Lagoon and Ouémé River, except So-Ava where																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	preliminary research is needed) using the Practical Guide for the production and plantation of mangrove species in Benin and the experience generated through previous initiatives																					
	(iv) Establish ecological corridor between the core mangrove sections (with both mangrove trees and fast growing species) particularly in Patch of Porto-Novo Lagoon and Ouémé River to increase the connectivity of mangrove sites																					
	(v) Establish private and public woodlots – based on land availability – in areas surrounding mangrove ecosystems with species selected by local communities to address their demand for fuelwood and timber (based on the experience of EcoBenin, 2 ha of woodlots planted for each ha of mangrove restored) using improved seedling production and handling processes																					
	(vi) Support the adoption of improved soil management practices following an agroecology approach (including agroforestry, crop-rotation systems, mulching, production and use of natural pesticides and fertilisers such as compost, integrated food and energy systems, small-scale irrigation systems and water conservation) in the buffer zones and transition zones based on the experience of EcoBenin, Action-Plus, BEES, GIZ, AFD and FAO and building on existing structures (e.g. Agro Boots Camps of The Gardens of Hope, the National Network to promote AgroEcology - ReBPA)																					
	(vii) Support the establishment of nurseries and pilot restauration plots for indigenous plants with high-value medicinal properties																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	(viii) Support the adoption of improved fishing practices and management (more selective fishing equipment and harvesting methods, reinforcement of traditional regulations that limit the number of days at sea...)																					
	(ix) Support the reopening and maintenance of overgrown waterways in and around the mangroves for the circulation of small boats																					
	(x) Support conservation activities for threatened species (protection measures for sea turtle eggs and nurseries, manatee conservation interventions...) in alignment with the development of ecotourism interventions and based on the expertise of partner NGOs																					
	(xi) Train women on improved techniques for salt extraction and processing (e.g. promotion of the production of clean energy salt combining solar and wind energy enabling women to produce salt without degrading mangrove ecosystems – suggestion from Teka et al. 2019)																					
Output 1.1.5:	(i) Provide administrative, financial and management training to ACCBs, APCs and other relevant CBOs																					
	(ii) Provide training on women leadership to CBO members and other interested women within the targeted communes																					
	(iii) Design a citizens' mangroves monitoring system and support ACCBs, APCs and other relevant CBOs' members in adopting relevant monitoring tools to monitor and measure the efficiency of the restoration and conservation interventions and draw lessons learned on best practices																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	(iv) Design and implement with local government institutions and in collaboration with ACCBs, APCs and other relevant CBOs a biomonitoring system that looks at: i) ecosystem regeneration, degradation and health; and ii) trend of mangrove species of high ecological and economic interest																					
	(v) Design and implement a monitoring plan to ensure compliance to exploitation rules using a participatory approach with Forest Inspections, DPHs and ATDAs																					
Output 2.1.1:	(i) Refine the identification of priority value chains that support biodiversity conservation and increased resilience to climate change in a participatory manner, and in full alignment with the mangrove landscapes' integrated management plans																					
	(ii) Support community members within the same value chain in organising themselves into cooperatives, strengthen existing cooperatives and support the grouping of cooperatives into clusters for the whole value chain where adequate, based on GIZ's experience with the coaching system																					
	(iii) Define a set of selection criteria and rating system to evaluate business plans for the development of sustainable nature-based economic activities, including as example: cost effectiveness, contribution/invesment from the applicants, financial viability and sustainability, benefits for biodiversity and for mangrove conservation, number of benefitting members, and social and economic benefits for the overall community																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	(iv) Provide training in entrepreneurship and in the development of a bankable business plan (preferentially as a group or association) for the development or strengthening of sustainable nature-based economic activities to interested community members in the mangrove landscapes following a learning-by-doing approach – with a particular focus on youth and women – based on the experience of EcoBenin with the Entrepreneurship and Funding Programme for Youth																					
	(v) Select the business plans to be supported by the project based on the set of criteria previously designed																					
	(vi) Provide training to local government institutions, NGOs, CBOs and/or community champions on improved production/harvesting/processing techniques for them to: i) undertake the training activities for community members (using a training-of-trainers approach); ii) provide long-term support for the maintenance of the improved livelihoods; and iii) support outscaling of these techniques.																					
	(vii) Provide required training and equipment for the implementation of the selected business plans, including the establishment of tailored channelling systems for financial support (e.g. loans, revolving funds, grants) based on the experience of existing financial structures and relevant NGOs																					
Output 2.1.2:	(i) Identify opportunities for the development of PPPs for the strengthening and long-term maintenance of agricultural, forestry, fisheries and/or ecotourism value chains development																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	(ii) Identify the opportunities for the development of PES schemes based on GIZ's, BEES and EcoBenin's experience to increase private sector involvement in the protection of mangrove landscapes and their biodiversity																					
	(iii) Create and operationalise the selected PPPs																					
	(iv) Support EcoBenin in certifying the carbon credit project in la Bouche du Roi?																					
Output 2.1.3:	(i) Train and support community members – particularly women – in the set up and management of AVECs or other adequate community-based finance systems to support the strengthening of climate resilient and biodiversity-friendly income sources																					
	(ii) Create/strengthen and operationalise AVECs the community-based finance systems based on the experience of EcoBenin in the ACCB La Bouche-du-Roy, and provide required training in financial and administrative management																					
	(iii) Train cooperative members and entrepreneurs in the development of projects eligible for existing government funds (e.g. : FNEC, FNDA, FADeC7) and establish collaboration agreements between AVECs and government funds where appropriate																					
	(iv) Advocate for the allocation of increased human resources within the ATDA of MAEP to support agricultural producers in accessing financial opportunities such as FNDA																					
Output 3.1.1:	(i) Refine the gap analysis of relevant national legal instruments and institutional arrangements pertaining to mangrove ecosystems																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	management, and identify opportunities for improvements under the project																					
	(ii) Address identified priority gaps to improve the enabling conditions for integrated and sustainable management of mangrove landscapes																					
	(iii) Clarify DGEC and DGEFC's mandates in mangroves' landscapes management and refine decision-making and planning processes pertaining to mangrove landscape to ensure adequate participatory processes with local communities																					
	(iv) Support local authorities in the inclusion of ACCB management plans in other local development plans																					
	(v) Support the development of a financing plan for the updated National Strategy and Action Plan for the sustainable management of mangrove ecosystems																					
Output 3.1.2:	(i) Undertake a three dimensional capacity needs assessment following FAO approach to identify gaps and weaknesses of key national and regional stakeholder groups in integrated and participatory processes for the sustainable management of mangrove landscapes as well as technical capacity gaps																					
	(ii) Develop and implement a capacity development plan based on identified gaps (study visits, research exchange programmes, training sessions...)																					
	(iii) Identify and integrate local and tailored governance planning tools for bottom-up and participatory management of resilient mangroves and other relevant coastal landscapes																					
Output 3.1.3:	(i) Design and implement a tailored knowledge management strategy to																					

Output	Main Activities	Responsible	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	capture and share lessons learned from the project and other relevant initiatives based on existing platforms such as the Collective of NGOs headed by EcoBenin "Collectif des Deltas du Golf du Benin"																					
	(ii) Design and implement national awareness-raising campaigns on the role and value of mangrove ecosystem and sustainable management opportunities																					
	(iii) Organise regional knowledge sharing activities through the Collective of Benin's Gulf Deltas headed by EcoBenin on good practices for the sustainable management of mangrove landscapes (exchange visits) and building on the efforts of IUCN in creating a knowledge sharing platform on mangroves in the Mono Transboundary Biosphere Reserve under PAP-Bio project																					
	(iv) Organise international knowledge sharing activities on good practices for the sustainable management of mangrove landscapes																					
Output 3.1.4:	(i) Support the M&E officer in refining and implementing the project's gender-sensitive M&E plan in collaboration with other PMU members, this includes clearly identifying the role of the team members and other project actors in data collection and ensuring that all required data is collected systematically and rigorously.																					
	(ii) Undertake the Mid-Term Evaluation																					
	(iii) Undertake the Final Evaluation																					

Annex I1: Environmental and Social Risk Certification

Risk Certification

Certified by: Savadogo, Patrice (SFWDD)

Date: 21-Oct-2020

The table below summarizes the environmental and social risks identified in relation to the proposed action.

The proposed action is classified as: **Moderate**

Safeguard Triggered	Risk Identified	Answer	Risk Classification	Reference Guidance	Additional Description (if any)
2	2.1 - Would this project be implemented within a legally designated protected area or its buffer zone?	Yes	**High**	A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	YES The project intervention sites will comprise areas have been designated as Wetlands of International Importance (RAMSAR site #1017 & RAMSAR site #1018) along Benin's coastline
2	2.5 - Would this project involve access to genetic resources for their utilization and/or access to traditional knowledge associated with genetic resources that is held by indigenous, local communities and/or farmers?	Yes	**Moderate**	Ensure that the following issues are considered and appropriate action is taken. The issues identified and the action taken to address them must be included in the project document and reported on in progress reports. For **plant genetic resources for food and agriculture (PGRFA) falling under the Multilateral System of Access and Benefit-sharing** (MLS) of the International Treaty on Plant Genetic Resources for Food and	YES The project will harness the opportunity of using traditional knowledge on native species in the agroforestry and reforestation activities.

				Agriculture (Treaty), ensure that Standard Material Transfer Agreement (SMTA) has been signed and comply with SMTA provisions. For **genetic resources, other than PGRFA falling under the MLS of the Treaty:** 1. Ensure that, subject to domestic access and benefit-sharing legislation or other regulatory requirements, prior informed consent has been granted by the country providing the genetic resources that is the country of origin of the resources or that has acquired the resources in accordance with the Convention on Biological Diversity, unless otherwise determined by that country; and 2. Ensure that benefits arising from the utilization of the genetic resources as well as subsequent applications and commercialization are shared in a fair and equitable way with the country providing the genetic resources that is the country of origin of the resources or that has acquired the resources in accordance with the Convention on Biological Diversity; and 3. Ensure that, in accordance with domestic law, prior informed consent or approval and involvements of indigenous and local communities is obtained for access to genetic resources where the indigenous and local communities have the established right to grant such resources; and 4. Ensure that, in accordance with domestic legislation regarding the established rights of these indigenous and local communities over the genetic resources, are shared in a fair and equitable way with the communities concerned, based on mutually agreed terms. For **traditional knowledge associated with genetic resources** that is held by indigenous and local communities: 1. Ensure, in accordance with applicable domestic law, that knowledge is accessed with the prior and informed consent or approval and involvement of these indigenous and local communities, and that mutually agreed terms have been established; and 2. Ensure that, in accordance with domestic law, benefits arising from the utilization of traditional knowledge associated with genetic resources are shared, upon mutually agreed terms, in a fair and equitable way with indigenous and local communities holding such	

				knowledge. Ensure that the project is aligned with the Elements to Facilitate Domestic Implementation of Access and Benefit Sharing for Different Subsectors of Genetic Resources for Food and Agriculture when it is the case	
4	4.7 - Would this project be located in or near an internationally recognized conservation area e.g. Ramsar or World Heritage Site, or other nationally important habitat, e.g. national park or high nature value farmland?	Yes	**Moderate**	A brief environmental impact assessment is required (Please contact the ESM unit for further guidance.)	YES The project intervention sites will comprise areas have been designated as Wetlands of International Importance (RAMSAR site #1017 & RAMSAR site #1018) along Benin's coastline
7	7.2 - Would this project operate in sectors or value chains that are dominated by subsistence producers and other vulnerable informal agricultural workers, and more generally characterized by high levels "working poverty"?	Yes	**Moderate**	Take action to anticipate the likely risk of perpetuating poverty and inequality in socially unsustainable agriculture and food systems. Decent work and productive employment should appear among the priorities of the project or, alternatively, the project should establish synergies with specific employment and social protection programmes e.g. favouring access to some social protection scheme or form of social insurance. Specific measures and mechanisms should be introduced to empower in particular the most vulnerable /disadvantaged categories of rural workers such as small-scale producers, contributing family workers, subsistence farmers, agricultural informal wage workers, with a special attention to women and youth who are predominantly found in these employment statuses. An age- and gender-sensitive social value chain analysis or livelihoods/employment assessment is needed for large-scale projects.	
7	7.3 - Would this project operate in situations where youth work mostly as unpaid contributing family workers, lack access to decent jobs and are increasingly abandoning agriculture and rural areas?	Yes	**Moderate**	Take action to anticipate likely risk of unsustainably ageing agriculture and food systems by integrating specific measures to support youth empowerment and employment in agriculture. A youth livelihoods/employment assessment is needed.Complementary measures should be included aiming at training youth, engaging them and their associations in the value chain, facilitating their access to productive resources, credit and markets, and	

				stimulating youth- friendly business development services.	
7	7.4 - Would this project operate in situations where major gender inequality in the labour market prevails? (e.g. where women tend to work predominantly as unpaid contributing family members or subsistence farmers, have lower skills and qualifications, lower productivity and wages, less representation and voice in producers' and workers' organizations, more precarious contracts and higher informality rates, etc.)	Yes	**Moderate**	Take action to anticipate likely risk of socially unsustainable agriculture and food systems by integrating specific measures to reduce gender inequalities and promote rural women's social and economic empowerment. A specific social value chain analysis or livelihoods/employment assessment is needed for large-scale projects.Facilitation should be provided for women of all ages to access productive resources (including land), credit, markets and marketing channels, education and TVET, technology, collective action or mentorship. Provisions for maternity protection, including child care facilities, should be foreseen to favour women participation and anticipate potential negative effects on child labour, increased workloads for women, and health related risks for pregnant and breastfeeding women.	
7	7.7 - Would this project involve sub-contracting?	Yes	**Moderate**	Take action to anticipate likely risk of perpetuating inequality and labour rights violations by introducing complementary measures. FAO projects involving sub-contracting should promote, to the extent possible, subcontracting to local entrepreneurs - particularly to rural women and youth - to maximize employment creation under decent working conditions. Also, FAO should monitor and eventually support contractors to fulfil the standards of performance and quality, taking into account national and international social and labour standards.	

Environmental and Social Risk Identification – Screening Checklist

Annex 1: Trigger questions

	Question	YES	NO
1	Would this project: • *result in the degradation (biological or physical) of soils or undermine sustainable land management practices; or*	X	

	• *include the development of a large irrigation scheme, dam construction, use of waste water or affect the quality of water; or* • *reduce the adaptive capacity to climate change or increase GHG emissions significantly; or* • *result in any changes to existing tenure rights[104] (formal and informal[105]) of individuals, communities or others to land, fishery and forest resources?*		
2	**Would this project be executed in or around protected areas or natural habitats, decrease the biodiversity or alter the ecosystem** functionality, use alien species, or use genetic resources?	**X**	
3	Would this project: • *Introduce crops and varieties previously not grown, and/or;* • *Provide seeds/planting material for cultivation, and/or;* • *Involve the importing or transfer of seeds and or planting material for cultivation or research and development;* • *Supply or use modern biotechnologies or their products in crop production, and/or* • *Establish or manage planted forests?*	X	
4	Would this project introduce non-native or non-locally adapted species, breeds, genotypes or other genetic material to an area or production system, or modify in any way the surrounding habitat or production system used by existing genetic resources?	X	

5	Would this project:
	• *result in the direct or indirect procurement, supply or use of pesticides[106]:*
	  ▪ *on crops, livestock, aquaculture, forestry, household; or*
	  ▪ *as seed/crop treatment in field or storage; or*
	  ▪ *through input supply programmes including voucher schemes; or*
	  ▪ *for small demonstration and research purposes; or*
	  ▪ *for strategic stocks (locust) and emergencies; or*
	  ▪ *causing adverse effects to health and/or environment; or*
	• *result in an increased use of pesticides in the project area as a result of production intensification; or*
	• *result in the management or disposal of pesticide waste and pesticide contaminated materials; or*
	• *result in violations of the Code of Conduct?*
			X

6	Would this project permanently or temporarily remove people from their homes or means of production/livelihood or restrict their access to their means of livelihood?		X

[104] [104] Tenure rights are rights to own, use or benefit from natural resources such as land, water bodies or forests

[105] Socially or traditionally recognized tenure rights that are not defined in law may still be considered to be 'legitimate tenure rights'.

[106] Pesticide means any substance, or mixture of substances of chemical or biological ingredients intended for repelling, destroying or controlling any pest, or regulating plant growth.

7	**Would this project affect the current or future employment situation of the rural poor, and in particular the labour productivity, employability, labour conditions and rights at work of self-employed rural producers and other rural workers?**	**X**	
8	Could this project risk overlooking existing gender inequalities in access to productive resources, goods, services, markets, decent employment and decision-making? For example, by not addressing existing discrimination against women and girls, or by not taking into account the different needs of men and women.		X
9	Would this project: • have indigenous peoples* living outside the project area[1] where activities will take place; or • have indigenous peoples living in the project area where activities will take place; or • adversely or seriously affect on indigenous peoples' rights, lands, natural resources, territories, livelihoods, knowledge, social fabric, traditions, governance systems, and culture or heritage (physical[2] and non-physical or intangible[3]) inside and/or outside the project area; or • be located in an area where cultural resources exist? * FAO considers the following criteria to identify indigenous peoples: priority in time with respect to occupation and use of a specific territory; the voluntary perpetuation of cultural distinctiveness (e.g. languages, laws and institutions); self-identification; an experience of subjugation, marginalization, dispossession, exclusion or discrimination (whether or not these conditions persist). [1]The phrase "Outside the project area" should be read taking into consideration the likelihood of project activities to influence the livelihoods, land access and/or rights of Indigenous Peoples' irrespective of physical distance. In example: If an indigenous community is living 100 km away from a project area where fishing activities will affect the river yield which is also accessed by this community, then the user should answer "YES" to the question. [2]Physical defined as movable or immovable objects, sites, structures, group of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance located in urban or rural settings, ground, underground or underwater. [3]Non-physical or intangible defined as "the practices, representations, expressions, knowledge and skills as well as the instruments, objects, artifacts and cultural spaces associated therewith that communities, groups, and in some cases individuals, recognize as part of their spiritual and/or cultural heritage"		X

Annex 2: Second Level Questions

SAFEGUARD 1 NATURAL RESOURCES MANAGEMENT

Question	Management of soil and land resources	No	Yes	Comments
1.1	Would this project result in the degradation (biological or physical) of soils	**LOW RISK**	**MODERATE RISK** Demonstrate how the project applies and adheres to the principles of the World Soil Charter	**NO** **Project will restore degraded ecosystems**
1.2	Would this project undermine sustainable land management practices?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO** **It will only enhance sustainable land management practices**

	Management of water resources and small dams	No	Yes	Comments
1.3	Would this project develop an irrigation scheme that is more than **20 hectares** or withdraws more than **1000 m3/day** of water?	**LOW RISK**	**MODERATE RISK** Specify the following information: *a) implementation of appropriate efficiency principles and options to enhance productivity,* *b) technically feasible water conservation measures,* *c) alternative water supplies,* *d) resource contamination mitigation or/and avoidance,* *e) potential impact on water users downstream,* *f) water use offsets and demand management options to maintain total*	**No**

			demand for water resources within the available supply. *g) The **ICID-checklist** will be included, as well as appropriate action within the project to mitigate identified potential negative impacts.* *h) Projects aiming at improving water efficiency **will carry out thorough water accounting** in order to avoid possible negative impacts such as waterlogging, salinity or reduction of water availability downstream.*	
1.4	Would this project develop an irrigation scheme that is more than **100 hectares** or withdraws more than **5000 m3/day** of water?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
1.5	Would this project aim at improving an irrigation scheme (without expansion)?	**LOW RISK**	**MODERATE RISK** The **ICID-checklist** will be included, as well as appropriate action within the project to mitigate identified potential negative impacts. Projects aiming at improving water efficiency **will carry out thorough water accounting** in order to avoid possible negative impacts such as waterlogging,	**NO**

			salinity or reduction of water availability downstream.	
1.6	Would this project affect the quality of water either by the release of pollutants or by its use, thus affecting its characteristics (such as temperature, pH, DO, TSS or any other?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
1.7	Would this project include the usage of wastewater?	**LOW RISK**	**MODERATE RISK** Demonstrate how the project applies and adheres to applicable national guidelines or, if not available, the WHO/FAO/UNEP Guidelines on Safe Usage of Waste Water in Agriculture	**NO**
1.8	Would this project involve the construction or financing of a dam that is more than **15 m**. in height?	**LOW RISK**	**CANNOT PROCEED**	**NO**
1.9	Would this project involve the construction or financing of a dam that is more than **5 m**. in height?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**

	Tenure	**No**	**Yes**	**Comments**
1.10	Would this project permanently or temporarily deny or restrict access to natural resources to which they have rights of access or useCould this project result in any changes to existing *tenure rights*[1] (*formal and informal*[2]) of individuals,	**LOW RISK**	**PROCEED TO NEXT Q**	**YES** **The project considers resource tenure security and governance as a game-changer in its sustainability pathway. It is therefore**

	communities or others to land, fishery and forest resources? [1]Tenure rights are rights to own, use or benefit from natural resources such as land, water bodies or forests [2]Socially or traditionally recognized tenure rights that are not defined in law may still be considered to be 'legitimate tenure rights'.				**designed to adhere to the principles/framework of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT). Also it is designed to avoid, and when avoidance is not possible, minimize adverse social and economic impacts from restrictions on land or resource use or from land and resource acquisition. It will through investment improve or at least restore living conditions of persons who are physically or economically displaced, through improving and restoring their productive assets and security of tenure.**
	1.10.1	Could this project result in a negative change to existing legitimate tenure rights?	**MODERATE RISK** Demonstrate how the project applies and adheres to the principles/framework of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
	Climate		**No**	**Yes**	**Comments**
1.11	Could this project result in a reduction of the adaptive capacity to climate change for any stakeholders in the project area?		**LOW RISK**	**HIGH RISK** A full environmental and social impact	**NO**

				assessment is required. Please contact the ESM unit for further guidance.	
1.12	Could this project result in a reduction of resilience against extreme weather events?		**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
1.13	Could this project result in a net increase of GHG emissions beyond those expected from increased production?		**LOW RISK**	**PROCEED TO NEXT Q**	**NO**
	1.13.1	Is the expected increase below the level specified by FAO guidance or national policy/law (whichever is more stringent)?	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**LOW RISK**	
	1.13.2	Is the expected increase above the level specified by FAO guidance or national policy/law (whichever is more stringent)?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	

SAFEGUARD 2 BIODIVERSITY, ECOSYSTEMS AND NATURAL HABITATS

	Protected areas, buffer zones or natural habitats	No	Yes	Comments
2.1	Would this project be implemented within a legally designated protected area or its buffer zone?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**YES** **The project intervention sites will comprise areas have been designated as Wetlands of International Importance (RAMSAR site #1017 & RAMSAR site #1018) along Benin's coastline**

	Biodiversity Conservation	No	Yes	Comments
2.2	Would this project change a natural ecosystem to an agricultural/aquacultural/forestry production unit with a reduced diversity of flora and fauna?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
2.3	Would this project increase the current impact on the surrounding environment for example by using more water, chemicals or machinery than previously?	**LOW RISK**	**MODERATE RISK** Demonstrate in the project document what measures will be taken to minimize adverse impacts on the environment and ensure that implementation of these measures is reported in the risk log during progress reports.	**NO**

	Use of alien species	No	Yes	Comments
2.4	Would this project use an alien species which has exhibited an invasive* behavior in the country or in other parts of the world or a species with unknown behavior?	**LOW RISK**	**HIGH RISK**	**NO**

	*An invasive alien species is defined by the Convention on Biological Diversity as "an alien species whose introduction and/or spread threaten biological diversity" (see https://www.cbd.int/invasive/terms.shtml).		A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	

	Access and benefit sharing for genetic resources	**No**	**Yes**	**Comments**
2.5	Would this project involve access to genetic resources for their utilization and/or access to traditional knowledge associated with genetic resources that is held by indigenous, local communities and/or farmers?	**LOW RISK**	**MODERATE RISK** Ensure that the following issues are considered and appropriate action is taken. The issues identified and the action taken to address them must be included in the project document and reported on in progress reports. For **plant genetic resources for food and agriculture (PGRFA) falling under the Multilateral System of Access and Benefit-sharing** (MLS) of the International Treaty on Plant Genetic Resources for Food and Agriculture (Treaty), ensure that Standard Material Transfer Agreement (SMTA) has been signed and comply with SMTA provisions.	**YES** The project will harness the opportunity of using traditional knowledge on native species in the agroforestry and reforestation activities.

			For **genetic resources, other than PGRFA falling under the MLS of the Treaty**: 1. *Ensure that, subject to domestic access and benefit-sharing legislation or other regulatory requirements, prior informed consent has been granted by the country providing the genetic resources that is the country of origin of the resources or that has acquired the resources in accordance with the Convention on Biological Diversity, unless otherwise determined by that country; and* 2. *Ensure that benefits arising from the utilization of the genetic resources as well as subsequent applications and commercialization are shared in a fair and equitable way with the country providing the genetic resources that is the country of origin of the resources or that has acquired the resources in accordance with the Convention on Biological Diversity; and*	

			3. *Ensure that, in accordance with domestic law, prior informed consent or approval and involvements of indigenous and local communities is obtained for access to genetic resources where the indigenous and local communities have the established right to grant such resources; and* 4. *Ensure that, in accordance with domestic legislation regarding the established rights of these indigenous and local communities over the genetic resources, are shared in a fair and equitable way with the communities concerned, based on mutually agreed terms.* For **traditional knowledge associated with genetic resources** that is held by indigenous and local communities: 1. Ensure, in accordance with applicable domestic law, that knowledge is accessed with the prior and informed consent or approval and	

			involvement of these indigenous and local communities, and that mutually agreed terms have been established; and 2. Ensure that, in accordance with domestic law, benefits arising from the utilization of traditional knowledge associated with genetic resources are shared, upon mutually agreed terms, in a fair and equitable way with indigenous and local communities holding such knowledge. Ensure that the project is aligned with the Elements to Facilitate Domestic Implementation of Access and Benefit Sharing for Different Subsectors of Genetic Resources for Food and Agriculture when it is the case	

SAFEGUARD 3 PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

	Introduce new crops and varieties	No	Yes	Comments
3.1	Would this project Introduce crops and varieties previously not grown?	**LOW RISK**	**MODERATE RISK** • *Follow appropriate phytosanitary protocols in accordance with IPPC* • *Take measures to ensure that displaced varieties and/or crops, if any, are included in the national or international* ex situ *conservation programmes*	**NO**

	Provision of seeds and planting materials		No	Yes	Comments
3.2	Would this project provide seeds/planting material for cultivation?		**LOW RISK**	**PROCEED TO NEXT Q**	**YES**
	3.2.1	Would this project involve the importing or transfer of seeds and/or planting materials for cultivation?	**LOW RISK**	**MODERATE RISK** • *Avoid undermining local seed & planting material production and supply systems through the use of seed voucher schemes, for instance* • *Ensure that the seeds and planting materials are from locally adapted crops and varieties that are accepted by farmers and consumers* • *Ensure that the seeds and planting materials are free from pests and diseases according to agreed norms, especially the IPPC* • *Internal clearance from AGPMG is required for all procurement of seeds and planting materials. Clearance from AGPMC is required for chemical treatment of seeds and planting materials*	**YES** **Due diligence will be applied before any intervention involving procurement of seed and planting material**

				• *Clarify that the seed or planting material can be legally used in the country to which it is being imported* • *Clarify whether seed saving is permitted under the country's existing laws and/or regulations and advise the counterparts accordingly.* • *Ensure, according to applicable national laws and/or regulations, that farmers' rights to PGRFA and over associated traditional knowledge are respected in the access to PGRFA and the sharing of the benefits accruing from their use. Refer to ESS9: Indigenous peoples and cultural heritage.*	
	3.2.2	Would this project involve the importing or transfer of seeds and/or planting materials for research and development?	**LOW RISK**	**MODERATE RISK** Ensure compliance with Access and Benefit Sharing norms as stipulated in the International Treaty on Plant Genetic Resources for Food and Agriculture and the Nagoya Protocol of the Convention on Biodiversity as may be applicable. Refer also to ESS2: Biodiversity, Ecosystems and Natural Habitats.	**NO**

	Modern biotechnologies and the deployment of their products in crop production	**No**	**Yes**	**Comments**
3.3	Would this project supply or use modern plant biotechnologies and their products?	**LOW RISK**	**MODERATE RISK** • *Adhere to the Cartagena Protocol on Biosafety of the Convention on Biological Diversity to ensure the safe handling,*	**NO**

			transport and use of Living Modified Organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health. • *Adhere to biosafety requirements in the handling of Genetically Modified Organisms (GMOs) or Living Modified Organisms (LMOs) according to national legislation or*[107] • *Take measures to prevent geneflow from the introduced varieties to existing ones and/or wild relatives*	

	Planted forests	No	Yes	Comments
3.4	Would this project establish or manage planted forests?	**LOW RISK**	**MODERATE RISK** • *Adhere to existing national forest policies, forest programmes or equivalent strategies.* • *The observance of principles 9, 10, 11 and 12 of the Voluntary Guidelines on Planted Forests suffice for indigenous forests but must be read in full compliance with ESS 9- Indigenous People and Cultural Heritage.* • *Planners and managers must incorporate conservation of biological diversity as fundamental in their planning, management, utilization and monitoring of planted forest resources.*	**NO**

[107] Food and Agriculture Organization of the United Nations. 2011. Biosafety Resource Book. Rome, http://www.fao.org/docrep/014/i1905e/i1905e00.htm

			• *In order to reduce the environmental risk, incidence and impact of abiotic and biotic damaging agents and to maintain and improve planted forest health and productivity, FAO will work together with stakeholders to develop and derive appropriate and efficient response options in planted forest management.*	

SAFEGUARD 4 ANIMAL (LIVESTOCK AND AQUATIC) GENETIC RESOURCES FOR FOOD AND AGRICULTURE

	Introduce new species/breeds and change in the production system of locally adapted breeds		No	Yes	Comments
4.1	Would this project introduce non-native or non-locally adapted species, breeds, genotypes or other genetic material to an area or production system?		**LOW RISK**	**PROCEED TO NEXT Q**	**NO**
	4.1.1	Would this project foresee an increase in production by at least 30% (due to the introduction) relative to currently available locally adapted breeds and can monitor production performance?	**CANNOT PROCEED**	**LOW RISK**	
	4.1.2	Would this project introduce	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required.	

		genetically altered organisms, e.g. through selective breeding, chromosome set manipulation, hybridization, genome editing or gene transfer and/or introduce or use experimental genetic technologies, e.g. genetic engineering and gene transfer, or the products of those technologies?		Please contact the ESM unit for further guidance.	
4.2	Would this project introduce a non-native or non-locally adapted species or breed for the first time into a country or production system?		**LOW RISK**	**MODERATE RISK** A genetic impact assessment should be conducted prior to granting permission to import (cover the animal identification, performance recording and capacity development that allow monitoring of the introduced species/ breeds' productivity, health and economic sustainability over several production cycles) • *http://www.fao.org/docrep/012/i0970e/i0970e00.htm* • *ftp://ftp.fao.org/docrep/fao/012/i0970e/i0970e03.pdf*	**NO**

4.3	Would this project introduce a non-native or non-locally adapted species or breed, independent whether it already exists in the country?	**LOW RISK**	**MODERATE RISK** • *If the project imports or promotes species/breeds with higher performance than locally adapted ones, ensure: feed resources, health management, farm management capacity, input supply and farmer organization to allow the new species/breeds to express their genetic potential* • *Follow the OIE terrestrial or aquatic code to ensure the introduced species/breed does not carry different diseases than the local ones* • *Include a health risk assessment and farmer/veterinary capacity development in the project to ensure the introduced species/breed do not have different susceptibility to local diseases including ecto-and endo-parasites than the locally adapted/native species/breeds.*	**NO**
4.4	Would this project ensure there is no spread of the introduced genetic material into other production systems (i.e. indiscriminate crossbreeding with locally adapted species/breeds)?	**MODERATE RISK** Introduce a) animal identification and recording mechanism in the project and b) develop new or amend existing livestock policy and National Strategy and Action Plan for AnGR	**LOW RISK**	**YES**

	Collection of wild genetic resources for farming systems	No	Yes	Comments
4.5	Would this project collect living material from the wild, e.g. for breeding, or juveniles and eggs for ongrowing?	**LOW RISK**	**MODERATE RISK** Guidance to be provided	**NO**

	Modification of habitats		No	Yes	Comments
4.6		Would this project modify the surrounding habitat or production system used by existing genetic resources?	**LOW RISK**	**MODERATE RISK** Guidance to be provided	**NO**
4.7		Would this project be located in or near an internationally recognized conservation area e.g. Ramsar or World Heritage Site, or other nationally important habitat, e.g. national park or high nature value farmland?	**LOW RISK**	**MODERATE RISK** Guidance to be provided	**YES** **The project intervention sites will comprise areas have been designated as Wetlands of International Importance (RAMSAR site #1017 & RAMSAR site #1018) along Benin's coastline**
4.8	**AQGR**	Would this project block or create migration routes for aquatic species?	**LOW RISK**	**MODERATE RISK** Guidance to be provided	**NO**
4.9		Would this project change the water quality and quantity in the	**LOW RISK**	**MODERATE RISK** Guidance to be provided	**NO**

	project area or areas connected to it?			
4.10	Would this project cause major habitat / production system changes that promote new or unknown chances for geneflow, e.g. connecting geographically distinct ecosystems or water bodies; or would it disrupt habitats or migration routes and the genetic structure of valuable or locally adapted species/stocks/breeds?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
4.11	Would this project involve the intensification of production systems that leads to land- use changes (e.g. deforestation), higher nutrient inputs leading to soil or water pollution, changes of water regimes (drainage, irrigation)?	**LOW RISK**	**MODERATE RISK** Guidance to be provided	**NO**

SAFEGUARD 5 PEST AND PESTICIDES MANAGEMENT

	Supply of pesticides by FAO	No	Yes	Comments
5.1	Would this project procure, supply and/or result in the use of pesticides on crops, livestock, aquaculture or forestry?	**LOW RISK**	**MODERATE RISK** • *Preference must always be given to sustainable pest management approaches such as Integrated Pest Management (IPM), the use of ecological pest management approaches and the use of mechanical/cultural/physical or biological pest control tools in favour of synthetic chemicals; and preventive measures and monitoring,* • *When no viable alternative to the use of chemical pesticides exists, the selection and procurement of pesticides is subject to an internal clearance procedure http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Code/E_SS5_pesticide_checklist.pdf* • *The criteria specified in FAO's ESM Guidelines under ESS5 must be adhered to and should be included or referenced in the project document.* • *If large volumes (above 1,000 litres of kg) of pesticides will be supplied or used throughout the duration of the project, a Pest Management Plan must be prepared to demonstrate how IPM will be promoted to reduce reliance on pesticides, and what measures will be taken to minimize risks of pesticide use.* • *It must be clarified, which person(s) within (executing) involved institution/s, will be responsible and liable for the proper storage, transport, distribution and use of the products concerned in compliance with the requirements.*	**NO**
5.2	Would this project provide seeds or other materials treated with pesticides (in the field and/or in storage) ?	**LOW RISK**	**MODERATE RISK** The use of chemical pesticides for seed treatment or storage of harvested produce is subject to an internal clearance procedure [http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Code/E_SS5_pesticide_checklist.pdf]. The criteria specified in FAO's ESM Guidelines under ESS5 for both pesticide supply and seed treatment must be adhered to and should be included or referenced in the project document.	**NO**
5.3	Would this project provide	**LOW**	**MODERATE RISK**	**NO**

	inputs to farmers directly or through voucher schemes?	**RISK**	• *FAO projects must not be responsible for exposing people or the environment to risks from pesticides. The types and quantities of pesticides and the associated application and protective equipment that users of a voucher scheme are provided with must always comply with the conditions laid out in ESS5 and be subject to the internal clearance procedure [link]. These must be included or referenced in the project document.* • *Preference must always be given to sustainable pest management approaches such as Integrated Pest Management (IPM), the use of ecological pest management approaches and the use of mechanical or biological pest control tools in favour of synthetic chemicals*	
5.4	Would this project lead to increased use of pesticides through intensification or expansion of production?	**LOW RISK**	**MODERATE RISK** Encourage stakeholders to develop a Pest Management Plan to demonstrate how IPM will be promoted to reduce reliance on pesticides, and what measures will be taken to minimize risks of pesticide use. This should be part of the sustainability plan for the project to prevent or mitigate other adverse environmental and social impacts resulting from production intensification.	**NO**
5.5	Would this project manage or dispose of waste pesticides, obsolete pesticides or pesticide contaminated waste materials?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**

SAFEGUARD 6 INVOLUNTARY RESETTLEMENT AND DISPLACEMENT

		No	Yes	Comments
6.1	Would this removal* be voluntary? *temporary or permanent removal of people from their homes or means of production/livelihood or restrict their access to their means of livelihoods	**CANNOT PROCEED**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**

SAFEGUARD 7 DECENT WORK

		No	Yes	Comments
7.1	Would this project displace jobs? (e.g. because of sectoral restructuring or occupational shifts)	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
7.2	Would this project operate in sectors or value chains that are dominated by subsistence producers and other vulnerable informal agricultural workers, and more generally characterized by high levels "working poverty"?	**LOW RISK**	**MODERATE RISK** Take action to anticipate the likely risk of perpetuating poverty and inequality in socially unsustainable agriculture and food systems. Decent work and productive employment should appear among the priorities of the project or, alternatively, the project should establish synergies with specific employment and social protection programmes e.g. favouring access to some social protection scheme or form of social insurance. Specific measures and mechanisms should be introduced to empower in particular the most vulnerable /disadvantaged categories of rural workers such as small-scale producers, contributing family workers, subsistence farmers, agricultural informal wage workers, with a special attention to women and youth who are predominantly found in these employment statuses. An age- and gender-sensitive social value chain analysis or livelihoods/employment assessment is needed for large-scale projects.	**YES** Some mitigation actions are planned. The project will have a gender including youth action plan to ensure all categories are benefiting from the interventions

7.3	Would this project operate in situations where youth work mostly as unpaid contributing family workers, lack access to decent jobs and are increasingly abandoning agriculture and rural areas?	**LOW RISK**	**MODERATE RISK** Take action to anticipate likely risk of unsustainably ageing agriculture and food systems by integrating specific measures to support youth empowerment and employment in agriculture. A youth livelihoods/employment assessment is needed. Complementary measures should be included aiming at training youth, engaging them and their associations in the value chain, facilitating their access to productive resources, credit and markets, and stimulating youth- friendly business development services.	**YES** The project will tailor some interventions and set up business plan to ensure its actions are rewarding for youth
7.4	Would this project operate in situations where major gender inequality in the labour market prevails? (e.g. where women tend to work predominantly as unpaid contributing family members or subsistence farmers, have lower skills and qualifications, lower productivity and wages, less representation and voice in producers' and workers' organizations, more precarious contracts and higher informality rates, etc.)	**LOW RISK**	**MODERATE RISK** Take action to anticipate likely risk of socially unsustainable agriculture and food systems by integrating specific measures to reduce gender inequalities and promote rural women's social and economic empowerment. A specific social value chain analysis or livelihoods/employment assessment is needed for large-scale projects. Facilitation should be provided for women of all ages to access productive resources (including land), credit, markets and marketing channels, education and TVET, technology, collective action or mentorship. Provisions for maternity protection, including child care facilities, should be foreseen to favour women participation and anticipate potential negative effects on child labour, increased workloads	**YES** The project will implement gender tailored action to ensure access to productive resources by all.

			for women, and health related risks for pregnant and breastfeeding women.	
7.5	Would this project operate in areas or value chains with presence of labour migrants or that could potentially attract labour migrants?	**LOW RISK**	**MODERATE RISK** Take action to anticipate potential discrimination against migrant workers, and to ensure their rights are adequately protected, with specific attention to different groups like youth, women and men.	**NO**
7.6	Would this project directly employ workers?	**LOW RISK**	**MODERATE RISK** FAO projects will supposedly guarantee employees' rights as per UN/FAO standards as regards information on workers' rights, regularity of payments, etc. Decisions relating to the recruitment of project workers are supposed to follow standard UN practices and therefore not be made on the basis of personal characteristics unrelated to inherent job requirements. The employment of project workers will be based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, etc.	**NO**
7.7	Would this project involve sub-contracting?	**LOW RISK**	**MODERATE RISK** Take action to anticipate likely risk of perpetuating inequality and labour rights violations by introducing complementary measures. FAO projects involving sub-contracting should promote, to the extent possible, subcontracting to local entrepreneurs – particularly to rural women and youth – to	**NO**

			maximize employment creation under decent working conditions. Also, FAO should monitor and eventually support contractors to fulfil the standards of performance and quality, taking into account national and international social and labour standards.	

		No	Yes	Comments
7.8	Would this project operate in a sector, area or value chain where producers and other agricultural workers are typically exposed to significant occupational and safety risks[108]?	**LOW RISK**	**MODERATE RISK** Take action to anticipate likely OSH risks by introducing complementary provisions on OSH within the project. Project should ensure all workers' safety and health by adopting minimum OSH measures and contributing to improve capacities and mechanisms in place for OSH in informal agriculture and related occupations. For example, by undertaking a simple health and safety risk assessment, and supporting implementation of the identified risk control measures. Awareness raising and capacity development activities on the needed gender-responsive OSH measures should be included in project design to ensure workers' safety and health, including for informal workers. Complementary measures can include measures to reduce risks and protect workers, as well as children working or playing on the farm, such as alternatives to pesticides, improved handling and storage of pesticides, etc. Specific provisions for OSH for pregnant and breastfeeding women should be introduced. FAO will undertake periodic inspections and a multistakeholder mechanism for monitoring should be put in place.	**NO**

[108] Major OSH risks in agriculture include: dangerous machinery and tools; hazardous chemicals; toxic or allergenic agents; carcinogenic substances or agents; parasitic diseases; transmissible animal diseases; confined spaces; ergonomic hazards; extreme temperatures; and contact with dangerous and poisonous animals, reptiles and insects.

7.9	Would this project provide or promote technologies or practices that pose occupational safety and health (OSH) risks for farmers, other rural workers or rural populations in general?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
7.10	Would this project foresee that children below the nationally-defined minimum employment age (usually 14 or 15 years old) will be involved in project-supported activities?	**LOW RISK**	**CANNOT PROCEED**	**NO**
7.11	Would this project foresee that children above the nationally-defined minimum employment age (usually 14 or 15 years old), but under the age of 18 will be involved in project-supported activities?	**LOW RISK**	**MODERATE RISK** Take action to anticipate likely risk of engaging young people aged 14-17 in child labour[109] by changing design or introducing complementary measures. For children of 14 to 17 years, the possibility to complement education with skills-training and work is certainly important for facilitating their integration in the rural labour market. Yet, children under the age of 18 should not be engaged in work-related activities in connection with the project in a manner that is likely to be hazardous or interfere with their compulsory child's education or be	**NO**

[109] Child labour is defined as work that is inappropriate for a child's age, affects children's education, or is likely to harm their health, safety or morals. Child labour refers to working children below the nationally-defined minimum employment age, or children of any age engaging in hazardous work. Hazardous work is work that is likely to harm the health, safety or morals of a child. This work is dangerous or occurs under unhealthy conditions that could result in a child being killed, or injured and/or made ill as a consequence of poor health and safety standards and working arrangements. Some injuries or ill health may result in permanent disability. Countries that have ratified ILO Convention No.182 are obligated to develop National lists of hazardous child labour under Article 4.

			harmful to the child's health, safety or morals. Where children under the age of 18 may be engaged in work-related activities in connection with the project, an appropriate risk assessment will be conducted, together with regular monitoring of health, working conditions and hours of work, in addition to the other requirement of this ESS. Specific protection measures should be undertaken to prevent any form of sexual harassment or exploitation at work place (including on the way to and from), particularly those more vulnerable, i.e. girls.	
7.12	Would this project operate in a value chain where there have been reports of child labour?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**
7.13	Would this project operate in a value chain or sector where there have been reports of forced labour[110]?	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**

[110] Forced labour is employed, consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. It includes men, women and children in situations of debt bondage, suffering slavery-like conditions or who have been trafficked. "In many countries, agricultural work is largely informal, and legal protection of workers is weak. In South Asia, there is still evidence of bonded labour in agriculture, resulting in labour arrangements where landless workers are trapped into exploitative and coercive working conditions in exchange for a loan. The low wages associated with high interest rates make it quite difficult for whole families to escape this vicious circle. In Africa, the traditional forms of "vestiges of slavery" are still prevalent in some countries, leading to situations where whole families (adults and children, men and women) are forced to work the fields of landowners in exchange for food and housing. In Latin America, the case of workers recruited in poor areas and sent to work on plantations or in logging camps has been widely documented by national inspection services and other actors." (ILO, Profits and poverty: the economics of forced labour / International Labour Office. - Geneva: ILO, 2014)

SAFEGUARD 8 GENDER EQUALITY

		No	Yes	Comments
8.1	Could this project risk reinforcing existing gender-based discrimination, by not taking into account the specific needs and priorities of women and girls?	**LOW RISK**	**MODERATE RISK** Take action to anticipate likely risk of perpetuating or reinforcing inequality by conducting a gender analysis to identify specific measures to avoid doing harm, provide equal opportunities to men and women, and promote the empowerment of women and girls.	**NO**
8.2	Could this project not target the different needs and priorities of women and men in terms of access to services, assets, resources, markets, and decent employment and decision-making?	**LOW RISK**	**MODERATE RISK** Take action to anticipate likely risk of socially unsustainable agriculture practices and food systems by conducting a gender analysis to identify the specific needs and priorities of men and women, and the constraints they may face to fully participate in or benefit from project activities, and design specific measures to ensure women and men have equitable access to productive resources and inputs.	**NO**

SAFEGUARD 9 INDIGENOUS PEOPLES AND CULTURAL HERITAGE

			No	Yes	Comments
9.1	Are there *indigenous peoples** living *outside the project area*** where activities will take place?[111]?		**LOW RISK**	**GO TO NEXT QUESTION**	**NO**
	9.1.1	Do the project activities influence the Indigenous Peoples living outside the project area?	**LOW RISK**	**MODERATE RISK** A Free, Prior and Informed Consent Process is required Project activities should outline actions to address and mitigate any potential impact Please contact the ESM/OPCA unit for further guidance.	
9.2	Are there indigenous peoples living in the project area where activities will take place?		**LOW RISK**	**MODERATE RISK** A Free Prior and Informed Consent process is required. **If the project is for indigenous peoples,** an Indigenous Peoples' Plan is required in addition to the Free Prior and Informed Consent process. Please contact the ESM/OPCA unit for further guidance. **In cases where the project is for both, indigenous and non-indigenous peoples,** an Indigenous Peoples' Plan will be required only if a substantial number of beneficiaries are Indigenous	**NO**

* FAO considers the following criteria to identify indigenous peoples: priority in time with respect to occupation and use of a specific territory; the voluntary perpetuation of cultural distinctiveness (e.g. languages, laws and institutions); self-identification; an experience of subjugation, marginalization, dispossession, exclusion or discrimination (whether or not these conditions persist).

** The phrase "Outside the project area" should be read taking into consideration the likelihood of project activities to influence the livelihoods, land access and/or rights of Indigenous Peoples' irrespective of *physical distance*. In example: If an indigenous community is living 100 km away from a project area where fishing activities will affect the river yield which is also accessed by this community, then the user should answer "YES" to the question

			Peoples. Project activities should outline actions to address and mitigate any potential impact. Please contact ESM/OPCA unit for further guidance. A Free, Prior and Informed Consent Process is required	
9.3	Would this project adversely or seriously affect on indigenous peoples' rights, lands, natural resources, territories, livelihoods, knowledge, social fabric, traditions, governance systems, and culture or heritage (*physical** and *non-physical or intangible***) inside and/or outside the project area? **Physical defined as movable or immovable objects, sites, structures, group of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance located in urban or rural settings, ground, underground or*	**LOW RISK**	**HIGH RISK** A full environmental and social impact assessment is required. Please contact the ESM unit for further guidance.	**NO**

	underwater. ***Non-physical or intangible defined as "the practices, representations, expressions, knowledge and skills as well as the instruments, objects, artifacts and cultural spaces associated therewith that communities, groups, and in some cases individuals, recognize as part of their spiritual and/or cultural heritage"*			
9.4	Would this project be located in an area where cultural resources exist?	**LOW RISK**	**MODERATE RISK** To preserve cultural resources (when existing in the project area) and to avoid their destruction or damage, due diligence must be undertaken to: a) verify that provisions of the normative framework, which is usually under the oversight of a national institution responsible for protection of historical and archaeological sites/intangible cultural heritage; and b) through collaboration and communication with indigenous peoples' own governance institutions/leadership, verifying the probability of the existence of sites/ intangible cultural heritage that are significant to indigenous peoples. In cases where there is a high chance of encountering physical cultural	**NO**

			resources, the bidding documents and contract for any civil works must refer to the need to include recovery of "chance findings" in line with national procedures and rules.	

ADDITIONAL INFORMATION	YES	NO
Is there any other potential environmental and/or social risk of this project that has not been captured in the screening checklist?		X
Is the proposed project considered potentially controversial?		X

Annex I2: Stakeholder Engagement Matrix and Grievance Redress Mechanism

Stakeholder consultations in project formulation[112] and Stakeholder Engagement Matrix[113]

The table below summarizes the main stakeholders that were consulted during project preparation (PPG) and/or who will play a role in the project implementation. It also indicates the methodology for consultation or engagement.

Types of stakeholders

1. Key Stakeholders: Have skills, knowledge or position of power to significantly influence the project
2. Primary Stakeholders: Directly affected by the project / direct beneficiaries
3. Secondary Stakeholders: Only indirectly or temporarily involved / indirect beneficiaries

[112] See FAO Operational Guidelines for Stakeholder Engagement

[113] See FAO Operational Guidelines for Stakeholder Engagement. Please include identification and consultations of disadvantage and vulnerable groups/individuals in line with the GEF policy on Stakeholder Engagement and GEF Environmental and Social Safeguards.

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
a) National and Provincial government				
Ministry of Living Environment and Sustainable Development (MCVDD) Decentralized Department of Living Environment and Sustainable Development (DDCVDD) General Direction for Environment and Climate (DGEC) DGEFC and its Forest Inspections (Ifs) Beninese Agency for the Environment (ABE) Department for the Promotion of Eco-citizenship (DPE) National Fund for the Environment and Climate (FNEC)	Key	[Please see Section 1.a. 1) 1.2]	• Staff from Forest Inspections consulted in Abomey-Calavi, Comè, ouidah Bopa and Lokossa • Staff from DGEFC consulted in Cotonou • Staff from consulted in Cotonou on 26 July 2021	As the GEF operational focal point, the CBD focal point and the UNFCCC focal point, MCVDD will notably be involved in project monitoring and follow-up. In addition, DGEC, DGEFC and ABE will (i) technically support project activities; (ii) benefit from capacity building under the Project; and (iii) promote Project outputs. DGEFC under MCVDD is the Executing Partner for the project. The Forest Inspections will be strongly involved in the participatory planning processes, identification of sustainable value chain opportunities based on forests, as well as M&E activities on the ground. DGEC and ABE will work in close collaboration with DGEFC to support the development of required frameworks, approaches and tools to enable integrated, participatory management planning and implementation for mangrove landscapes. ABE will also support the design of biomonitoring and implementation of biomonitoring system, together with CENAGREF. DPE will have an important role in the design and implementation of the awareness-raising and education interventions, and support the monitoring of their impact. FNEC will support the identification of additional funding sources and access to these funding sources to provide additional funding opportunities in the targeted area.
Ministry of Agriculture, Breeding and Fisheries (MAEP) Decentralized Departments of Agriculture, Livestock Husbandry and Fisheries (DDAEP) Directorate of Fish Production (DPH) Decentralised Agency for Agricultural Development[114]	Key	[Please see Section 1.a. 1) 1.2]	• Staff from CeC consulted in each commune except Grand-Popo, Comè and So-Ava • Staff from ATDA consulted in Grand-Popo, Bopa, Kpomassé, Ouidah, Abomey-Calavi, Aguégués Seme-Kpodgi in July 2021 • Staff from DDAEP in Comè consulted on 13 and 16 July 2021	MAEP and its decentralised directions will play a major role in the project. DPH and ATDA will support the participatory process for the development of the community-based management plans and the PCD. DPH will insist in promoting improved fishing practices and in strengthening fisheries value chains. ATDA will support the adoption of improved agricultural practices such as agroecology principles in the targeted communes, and the strengthening of agricultural value chains. MAEP and DDAEP will support the diffusion of good practices, the policy and institutional strengthening activities, as well as the cross-sectoral consultations and knowledge sharing interventions.

[114] Agence Territoriale de Développement Agricole

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
(ATDA) and its Communal Units				
Ministry of Decentralization and Local Governance (MDGL) Departments of Decentralized Authorities (DDA)	Key	MDGL and its DDAs are in charge of defining, implementing and monitoring the national policy pertaining to decentralization, local governance and local development. MDGL's mandate include inter alia to promote local economy and decentralized cooperation, and to support engagement mechanisms for the population to participate in decision making at the local level. DDAs at the provincial level are also tasked with promoting partnerships between the state, the communes, the civil society and the private sector for democracy and local development.	• N/A	MDGL and DDAs will support the strengthening of participatory processes across relevant sectors to ensure adequate community involvement in decision making for mangrove landscapes. DDAs will also support the identification of relevant private sector actors to be engaged in the development of sustainable livelihoods.
Ministry of Culture, Handcrafting and Tourism (MCAT) Department of Tourism Development[115] Provincial Departments of Tourism[116] (DDT)	Key	This ministry is responsible for the design and implementation of an integrated strategy for tourism development taking into account the entire value chain and existing opportunities together with the Ministry of Employment and Finances. It supports the development of tourism sites, the enhancement of cultural practices to attract tourism, and the coordination and control of private companies in the tourism sector. The Department of Tourism Development's responsibilities which are particularly relevant to the present project are: developing, implementing and monitoring the masterplan for tourism development at the national and local levels; supporting the development of local tourism initiatives; undertaking the required local studies to support tourism development; establishing a consultation framework with national and international stakeholders from the private sector, civil society, funding partners and government; developing an integrated database centralising information on all the tourism activities in Benin. The DDTs support the ministry in fulfilling its mandate at the provincial and local levels.	• N/A	MCAT will be strongly involved in the identification of opportunities for ecotourism development in the targeted area. The GEF-funded project will support the development of tourism activities and handcrafted products linked to mangrove ecosystems. MCAT will support infrastructural improvement (e.g. tourist information points) if possible.
National Women Institute (INF)	Key	This new public organisation created in July 2021 to promote women at the political, economic, social, legal, cultural levels as well as at the public and private levels.	• N/A	INF will support the PMU in making sure that all required interventions are implemented to maximise women involvement and ownership of the project, as well as the benefits generated for

[115] Direction du Développement du Tourisme
[116] Directions Départementales du Tourisme

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
		It is also in charge of fighting against any form of discrimination or violence against women.		women through the project. it will also support the monitoring of gender integration in the project.
Prefects of Mono, Atlantic and Ouémé Provinces	Key	The prefect represents the government at the provincial level. It is supported an Administrative Conference which includes members of each decentralised government sectors. Each province also has a Provincial Council for Consultation and Coordination which includes the prefect, the mayor and deputy mayor of each communes, a representative of the National Union of Producers among others.	• N/A	The prefects of each province will support the timely and smooth implementation of the project interventions, support strong collaboration between the targeted communes within their province, and ensure continuous collaboration with the prefects of other targeted provinces.
b) Local government (Communes)				
Communal authorities	Key	The mayor is the main authority at the communal level. He/she is assisted by deputies and by the communal council.	• Mayor or deputies met in each commune (Bopa on 13 July 2021) • Staff from the city hall consulted in Grand-Popo	Communal authorities will support the mobilisation of community groups together with traditional and religious leaders. They will also be supported in applying a participatory approach and integrating local plans in the PDCs development process. Local authorities will also have a leading role in the creation and application of required decrees in a participatory manner with local communities. They will also be expected to participate actively in the design of the mangrove ecosystem management plans, and to support their implementation.
Associations of Communes National Association of Benin's Communes[117] (ANCB) Intercommunal group of the Mono province (GI-Mono) – including six communes: Athiémé, Bopa, Comé, Grand-Popo, Houéyogbé and Lokossa Association of the communes of Atlantic Province (ACAL): Abomey-Calavi; Allada; Cotonou; Kpomassè; Ouidah; Sô-Ava; Toffo; Tori-Bossito and Zê	Secondary	These associations are based on the desire of communes to group themselves under an association to facilitate intercommunal collaboration. These associations support the communes in achieving their development goals.	• N/A	National and sub-national association of communes will have an important role in supporting knowledge sharing between associations, facilitating access to knowledge products in other communes, and supporting upscaling of good practices where adequate.

[117] Association Nationale des Communes du Bénin

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
Community of communes of Ouémé (CCO): Adjarra, Adjohoun, Aguégués, Akpro-Missérété, Avrankou, Bonou, Dangbo, Porto-Novo and Sèmè-Kpodji				
Public Land and Environmental Services[118] (SAFE)	Key	They ensure the management of land tenure and public land matters at the communal level.	• N/A	SAFE will support the analyses of the current land tenure system to identify: i) strengths, weaknesses and existing risks at the local level if any; ii) opportunities to increase access to land and land tenure security; and iii) opportunities to secure land ownership for ACCBs, APCs and other CBOs and other opportunities to maximise the sustainability of the project investments.
• c) Local populations and groups				
Community-based Biodiversity Conservation Areas (ACCBs), Community-based Protected Areas (APCs) and other relevant CBOs ACCB Bouche du Roi, ACCB Togbin Adounko, ACCB Vodounto, ACCB Lac Ahémé (under creation) APCs of Satatunga Valley in Zinvié (Abomey-Calavi Commune) Intercommunity Reserve of Grand Nokoué (Aguégué, Sèmè-Kpodji, Sô-Ava communes) Future community-based natural resources' management organisations	Primary	ACCBs are community-based natural resources management organisation in Ramsar site 1017 whose establishment was first supported under the RBT-Mono project and new ones were created thereafter. APCs are similar organisations created in the Biosphere Reserve of the lower Valley of Ouémé.	• ACCBs Vodounto and Togbin-Adounko consulted on 06 July 2021 • ACCB La Bouche-du-Roy	ACCBs, APCs and other relevant CBOs will have a pivotal role in the project as they will lead the design, implementation and monitoring of the mangrove management plans.
Communities living in the mangrove landscapes (within and beyond the CBOs)	Primary	• Commune de Grand Popo/Village d'Avlo • Commune de Comè/Village de Kpétou • Commune de Bopa/ Village de Séhougbato • Commune de Kpomassè/ Village de Couffonou • Commune de Ouidah /Village de Djègbadji • Commune de Aguégués/ Village de Kintokomè	• Focus groups in one village in each targeted communes with 6 to 11 community members, including agriculture producers, fisherman, tourist guides, salt	The communities in the targeted communes have been involved throughout the design process for the fine-tuning of the interventions. They are the main partners and the final beneficiaries of all project interventions including improved governance and planning, awareness raising, training, income-

[118] Services des Affaires Domaniales et Environnementales

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
		• Commune de Sèmè-Kpdji/ Village de Tchonvi • Commune de Sô-Ava/ Village de Ahomey-Gblon • Commune de Abomey-Calavi/ Village de Adounko	producers, and traders (72 people in total) • 108 individual consultations with community members	generating interventions as well as biodiversity conservation and ecosystem restoration interventions.
Fishing groups and associations	Primary	Official or unofficial Fisherman Associations are found in each of the targeted communes (e.g. Village Committee of Local Development in Sémé-Kpodgi; Natural Resources Management Committee of Kpomassé; Fishing committee for So-Ava; Association of Acadja owners in So-Ava). They recognize the importance of mangrove ecosystems to sustain their activities. These associations showed strong interest in the project during the field visits.	• Fisherman have been consulted in each of the targeted communes in July and September 2021	Fishing groups and associations will be supported in identifying opportunities to enable the recovery of fish stocks and to diversify income sources to increase fisherman resilience.
Women producers of Casava floor and other women groups	Primary	Women usually organize themselves into unofficial groups based on their economic activities. For example, there are salt production, fish processing, agricultural product processing (casava flour), folklore and food selling groups. Women encountered in these groups during the field studies were conscious that their activities had a negative impact on mangroves and that there was a risk for it to affect negatively their economic activity.	• Individual consultation with a women leader of the group of Women producers of Casava floor in Bopa	Women groups will be engaged across the project interventions and will support the identification of opportunities to facilitate and maintain women participation in the project, and create women ownership of the project. Leaders from these groups will likely be interested in the leadership training interventions.
Traditional and religious chiefs, and other community leaders	Key	This includes the worship Chiefs (e.g. « Zangbéto ») and religious authorities	• Direct meetings during PIF stage and during the PPG July-August 2021	Traditional and religious leaders will support the mobilisation of community groups together with Communal authorities. Influential people within the communities will be strongly engaged in the project to design and support the implementation of awareness-raising activities, support the adoption and upscaling of good agricultural, fishing and harvesting practices, and to support the development and application of local regulations. They also have a key role in communities mobilisation for participatory processes, to ensure that every community group is adequately engaged in the process.
Youth Associations	Primary	Several youth associations are present in the targeted area such as the Youths Associations for the development of Sémé-Kpodgi and Kpomassé, the students association of So-Ava. These associations are mostly focused on politics rather than on environmental matters. However, associations focused on nature-based economic activities such as the Tourist Guides Association of So-Ava attract youth.	• Various face to face stakeholders' meetings during the PPG field visits July-November 2021	Youth Associations will be involved across the project activities particularly in awareness raising, adoption of improved practices, training in entrepreneurship and strengthening of income-generating activities.
d) Civil society				

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
National Union of small-scale Fisherman in Benin[119] (UNAPEMAB)	Secondary	UNAPEMAB focuses on improving fishing practices and defining sustainable fishing regulations to maintain fisheries resources.	• Individual consultation with the representative in Grand Popo commune	This union will support the identification of means to improve current fishing practices and enable the recovery of fish stock, and most importantly it will support the application of a harmonious approach across the fisherman community.
Communal Unions of Producers	Secondary	These unions focus on increasing agricultural productivity.	• Individual consultation with the General Secretariat of the Communal Union of producers of So-Ava	This union will support the identification of means to sustainably improve agricultural productivity and enable the conservation of soil and water resources, and most importantly it will support the application of a harmonious approach across the producers community.
EcoBenin	Key	EcoBenin was created 1999. It is specialised on the development and the promotion of the community-based tourism sites in Benin. Its mission is to promote local and national development through managing and adding value to natural resources for ecotourism development, ensure fair distribution of the benefits within the communities and protecting natural ecosystems. EcoBenin currently supports multiple initiatives for mangrove preservation and restauration, ecotourism development, awareness-raising on mangroves and biodiversity, and improvement of community livelihoods. The NGO has been mostly working in Grand Popo commune particularly in la Bouche-du-Roi and around Lake Ahémé since 2005. EcoBenin is the leading NGO of the newly established Collective of the Deltas of Benin's Gulfs.	• Online individual consultation on 20 May 2021 • emailing • individual consultations in person in Abomey-Calavi with 5 of the technicians on 02 July 2021 • participation to each meeting and workshop at the central level	EcoBenin was identified as a key partner in the project because of its extended experience in mangrove management and ecotourism development in Ramsar site 1017.
Benin Environment and Education Society (BEES)	Key	BEES NGO was created in 2005. It works mostly in Ramsar site 1018 mostly in the area of Nokoué Lake (So-Ava and Sémé-Kpodgi communes). The projects implemented by BEES included a diversity of interventions for the sustainable management of natural resources: i) the creation of an intercommunal reserve in Grand Nokoué; ii) awareness raising of government officials (e.g. DGEC, ABE, FNEC) on ecosystems functioning, impact of their interventions on natural ecosystems, and opportunities for the sustainable management of ecosystems; iii) promoting the integration of EbA into national policies; iv) participatory mangrove restauration interventions in MAB-UNESCO Reserve.	• Two individual consultations in July and September 2021	BEES has highly relevant experience for the project and will therefore be closely involved in its implementation.

[119] Union Nationale des Pêcheurs Marins et Assimilés du Bénin

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
Action-Plus	Key	This NGO was created in 1993 and focuses on environmental protection and social protection. It works mostly in Ouidah commune where it has implemented several projects. The interventions included promoting improved cook stoves, planting fast growing trees (*Acacia*) to meet demand for fuelwood, promoting the use of more efficient stoves "Wanrou" for salt producers; establishing a local microloans system which is still functional today for salt producers and fisherman to purchase wood (interest rate of 8%); establishing wood markets in Djêgbadji, Mèko, Avlékété and Toligbé to sell the wood from the 50 hectares plantation in Gakpé (mostly funded by the FNEC). They have recently worked in Kpomassé (Kouffonou) as well on the Technical cooperation project for mangrove restoration in Ramsar site 1017. The interventions included reforestoration, solar-powered salt production, agroecology, capacity builing on the policy framework for local authorities.	• Individual consultation in Ouidah on 08 July 2021	Action-Plus has extended experience in addressing deforestation issues in the area of Ouidah and will therefore be closely involved in its implementation.
CORDE	Key	CORDE NGO focuses mostly on the area of Ouidah. It is currently involved in the implementation of the FFEM project "Mangrove restauration, conservation and sustainable management under climate change in Costa Rica and Benin".	• N/A	The experience of CORDE in mangrove restoration under the FFEM project will be built on to design the ANR interventions under the proposed project.
Research and Initiatives for Sustainable Development (RID)	Key	NGO RID works towards the preservation and restoration of the environment, food security, health, education, culture and human rights. They have implemented multiple interventions to train and raise awareness of women on health matters. It is currently working in the targeted mangroves landscapes and is involved in the Pap-Bio project.	• N/A	The experience of RID in mangrove restoration under the Pap-Bio project has been collected through report to fine tune the proposed interventions, taking stock of lessons learnt.
Kinomé	Secondary	Kinomé has multiple projects in West Africa. They are inter-alia supporting the Collective 5-Delta and the establishment of the Collective of the Deltas of Benin's Gulfs. They also work with EcoBenin on the carbon credit project. Kinomé was also part of discussions to create an AMP linked to the RBT-Mono.	• Online individual consultation on 27 May 2021	The lessons learned and the experience of Kinomé in West-Africa was used to design the GEF-funded project and will be further built on to fine tune the interventions.
Platform Pro-Environnement	Secondary	Pro-Environment regroups all NGOs in Benin that work in the environmental sector.	• N/A	Pro-Environment Platform will support the dissemination of information and the upscaling of good practices among environmental NGOs.

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
e) Private sector				
Private sector companies involved in the targeted value chains (ecotourism operators, NTFPs value chains actors etc.)	Primary	Private companies involved in the processing and/or marketing of forest, agricultural, pastoral, fish or tourism products.	• N/A	Private sector companies at the national and local levels will be involved in the implementation of the interventions under Component 2 particularly for the development of income-generating activities based on the sustainable use of natural resources. The engagement of the private sector will be threefold: i) their experience will be valuable for the development of profit-making business plans; ii) the opportunities offered by their businesses will guide the selection of the products, Value Chains and/or services to be developed; and iii) potential business partnership and/or investors will be identified with private sector actors.
Large corporates operating in the area	Secondary	Large corporates operating in the targeted area which might be interested in supporting sustainable rural development through CSR or PES.	• N/A	Corporates will be approached to investigate their interest in supporting sustainable livelihood interventions and biodiversity conservation.
AVEC, DAME, CAVECA, Alidé, PADME	Secondary	Existing microfinance structures in the targeted communes.	• AVEC consulted in Grand-Popo • PADME consulted in Comè • CAVECA consulted in Kpomassé	Current barriers in allocating funds farmers and fisherman in the targeted communes will be discussed with the structures. Opportunities to increase access to funding by local producers, collectors, processors and traders will thereafter be identified jointly and implemented where possible.
f) Regional and international organisations, development partners				
Economic Community of West African States (ECOWAS/ CEDEAO) and UEMOA	Secondary	ECOWAS is an intergovernmental organization for West African countries created in 1975 to promote economic integration in all fields of activity of the constituting countries. It includes 16 countries. UEMOA focused on 8 countries that are part of the ECOWAS.	• N/A	ECOWAS provides a good platform for knowledge sharing on good practices for the development of resilient sources of income.
GIZ	Key	GIZ has implemented the project Transboundary Biosphere Reserve in the Mono Delta on which the present project will build on. For example, outcomes of the RBT-Mono project include the creation of ACCBs, the establishment of the biosphere reserve and the development of its management plan.	• Online individual consultation on 12 May 2021	Lessons learned from the GIZ project will be built on to maximise the success and sustainability of the GEF-funded project. In addition, the output of the RBT-Mono project will be strengthened where necessary and complemented.
IUCN		IUCN is involved in three key regional projects and programmes: MACO programme that focuses on mangrove management in the PACO region (i.e. Central and West Africa); PRMAO project focused on mangrove conservation in West Africa; and WACA PAP-Bio project. IUCN also includes a Species Survival Commission (SSC) Mangrove Specialist Group.	• Online individual consultation on 06 May 2021	IUCN has an extended experience in mangrove management through the MACO project, which is very valuable for the preservation and regeneration of Benin's mangroves.
FAO	Key	FAO has multiple ongoing project that are of interest to the project.	• Continuously lead the PPG process	FAO is the IA for the project.

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
World Bank		WACA programme and corresponding projects	• Online individual consultation on 06 May 2021	The WACA programme and its projects offer a good opportunity for collaboration and complementarity. The PMU will be consulted regularly throughout the implementation phase.
UNDP		UNDP is implementing multiple projects in Benin to support local development: promoting compost production, finding sustainable alternative for salt production, development of irrigation infrastructure to improve agricultural production.	• N/A	The experience of UNDP will be built on to replicate good practices where appropriate.
g) Academia/research institutions				
University of Abomey-Calavi Laboratory of Applied Ecology[120] (LEA)] Laboratory of Biomathematics and Forest Assessments (LABEF) Laboratory of Applied Anthropology and Education on Sustainable Development[121] (LAAEDD)		It is one of the four public universities in Benin. LEA is part of the university of Abomey-Calavi. It focuses on the management of pastoral land, the management of protected areas, the monitoring of endemic or threatened fauna and flora species, and ethnobotany value addition. It has the required human and technical resources to undertake research project in natural ecosystem. LEA undertook the inventories in Ramsar site 1017 in 2017. LABEF aims at analyzing the applicability of mathematics tools in life sciences and at understanding the interactions between ecological processes, anthropogenic factors and structure of terrestrial ecosystems, with a clear link to management and policy. LAAEDD undertake research on different socio-anthropological matters linked to the environment, well-being and sustainable development. As an example, it recently undertook some research on gender.	• Individual consultations in person in Abomey-Calavi with scientist and technicians • Participation to each meeting and workshop at the central level the national lead consultant being from this research lab.	The university and its research centres will assist in addressing knowledge gaps related to species, ecosystems, biodiversity and land degradation, and social and economic assessment of biodiversity and ecosystems goods and services (Output 1.1). LEA and LABEF will undertake required research projects on mangrove ecosystems in the targeted areas (e.g. inventories in Ramsar 1018, complement inventories from 1017 if necessary) and LAAEDD will undertake required socio-anthropological studies in the mangrove landscapes.
National Centre for the Management of Faune Reserves[122] (CENAGREF)		CENAGREF is a public organisation responsible for the conservation and management of protected areas in Benin. It currently focuses on the management of Pendjari and W National Parks. The creation and support to ACCBs and APCs are part of CENAGREF mandate.	• N/A	CENAGREF will work in collaboration with ABE to undertake the required inventories. It will also benefit from capacity strengthening interventions and support the creation of community-based natural resources' management organisations. Finally, it will support the selection and creation of appropriate protection systems for mangroves and their marine areas (e.g. Protected Areas, sanctuaries or other classified zones).

[120] Laboratoire d'Ecologie Appliquée
[121] Laboratoire d'Anthropologie Appliquée et d'Education au Développement Durable
[122] Centre National de Gestion des Reserves de Faune

Stakeholder Name	Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)
Centre for Forest Studies and Research of DGEFC		CERF is scientific organization that contributes to the implementation of the National Forest Policy and advancing science. It also centralizes data from a diversity of studies on forest including inventories.	• N/A	CERF will centralise the data generated on mangrove ecosystems through the project and make it easily accessible to all relevant stakeholders.

Grievance Redress Mechanism[123]

Grievance Mechanism

Focal Point Information	FAO Representative in Benin, AngueObama, Isaias
Contact Details	Isaias.AngueObama@fao.org
Explain how the grievance mechanism will be/ has been communicated to stakeholders	A dedication session during validation workshop with a wide stakeholder group.

Disclosure (only for Moderate or High Risk)

Disclosure Means	FAO Disclosure Portal	
Disclosure information/document shared	Full Project Document	
Disclosure dates	From: April 2022	To: May 2022
Location	Disclosure Portal | Environmental and Social Standards | Food and Agriculture Organization of the United Nations (fao.org)	
Language(s)	English	
Other Info	N/A	

FAO is committed to ensuring that its programs are implemented in accordance with the Organization's environmental and social obligations. In order to better achieve these goals, and to ensure that beneficiaries of FAO programs have access to an effective and timely mechanism to address their concerns about non-compliance with these obligations, the Organization, in order to supplement measures for receiving, reviewing and acting as appropriate on these concerns at the program management level, has entrusted the Office of the Inspector-General with the mandate to independently review the complaints that cannot be resolved at that level.

FAO will facilitate the resolution of concerns of beneficiaries of FAO programs regarding alleged or potential violations of FAO's social and environmental commitments. For this purpose, concerns may be communicated in accordance with the eligibility criteria of the Guidelines for Compliance Reviews Following Complaints Related to the Organization's Environmental and Social Standards[124], which applies to all FAO programs and projects.

Concerns must be addressed at the closest appropriate level, i.e. at the project management/technical level, and if necessary at the Regional Office level. If a concern or grievance cannot be resolved through consultations and measures at the project management level, a complaint requesting a Compliance Review may be filed with the Office of the Inspector-General (OIG) in accordance with the Guidelines. Program and project managers will have the responsibility to address concerns brought to the attention of the focal point.

The principles to be followed during the complaint resolution process include: impartiality, respect for human rights, including those pertaining to indigenous peoples, compliance of national norms, coherence with the norms, equality, transparency, honesty, and mutual respect.

Project-level grievance mechanism

The project will establish a grievance mechanism at field level to file complaints during project inception phase. Contact information and information on the process to file a complaint will be disclosed in all meetings, workshops and other related events throughout the life of the project. In addition, it is expected that all awareness raising material to be distributed will include the necessary information regarding the contacts and the process for filing grievances.

[123] This section has to be adapted to each specific country.
[124] Compliance Reviews following complaints related to the Organization's environmental and social standards: http://www.fao.org/aud/42564-03173af392b352dc16b6cec72fa7ab27f.pdf

The project will also be responsible for documenting and reporting as part of the safeguards performance monitoring on any grievances received and how they were addressed.

The mechanism includes the following stages:

- In the instance in which the claimant has the means to directly file the claim, he/she has the right to do so, presenting it directly to the Project Coordination Unit (PCU). The process of filing a complaint will duly consider anonymity as well as any existing traditional or indigenous dispute resolution mechanisms and it will not interfere with the community's self-governance system.
- The complainant files a complaint through one of the channels of the grievance mechanism. This will be sent to the Project Coordinator (PC) to assess whether the complaint is eligible. The confidentiality of the complaint must be preserved during the process.
- The PGC will be responsible for recording the grievance and how it has been addressed if a resolution was agreed.
- If the situation is too complex, or the complainer does not accept the resolution, the complaint must be sent to a higher level, until a solution or acceptance is reached.
- For every complaint received, a written proof will be sent within ten (10) working days; afterwards, a resolution proposal will be made within thirty (30) working days.
- In compliance with the resolution, the person in charge of dealing with the complaint, may interact with the complainant, or may call for interviews and meetings, to better understand the reasons.
- All complaint received, its response and resolutions, must be duly registered.

Internal process

1. Project Coordination Unit (PCU). The complaint could come in writing or orally to the PCU directly. At this level, received complaints will be registered, investigated and solved by the PCU.

2. If the complaint has not been solved and could not be solve in level 1, then the Project Coordinator (PC) elevates it to the FAO Representative of Benin.

3. Project Steering Committee. The assistance of the PSC is requested if a resolution was not agreed in levels 1 and 2.

4. FAO Regional Office for Africa. FAO Representative will request if necessary the advice of the Regional Office to resolve a grievance, or will transfer the resolution of the grievance entirely to the regional office, if the problem is highly complex.

5. The FAO Regional Representative will request only on very specific situations or complex problems the assistance on the FAO Inspector General who pursuits its own procedures to solve the problem.

Resolution

Upon acceptance a solution by the complainer, a document with the agreement should be signed with the agreement.

Project Coordination Unit (PCU)	Must respond within 5 working days.	
FAO Representation in Benin	Anyone in the FAO Representation may receive a complaint and must request proof of receipt. If the case is accepted, the FAO Representative must respond within 5 working days in consultation with FAO's Representation and Project Team. FAO Representative: Angue Obama, Isaias e-mail: Isaias.AngueObama@fao.org	

	Tel: +229 97 58 5464	
Project Steering Committee (PSC)	If the case cannot be dealt by the FAO Representative, he/she must send the information to all PSC members and call for a meeting to find a solution. The response must be sent within 5 working days after the meeting of the PSC.	
FAO Regional Office for Africa	Must respond within 5 working days in consultation with FAO's Representation. FAO Regional Representative: Abebe Haile-Gabriel e-mail: Abebe.HaileGabriel@fao.org Tel: +233 (0)302 610930	
Office of the Inspector General (OIG)	To report possible fraud and bad behavior by fax, confidential: (+39) 06 570 55550 By e-mail: Investigations-hotline@fao.org By confidential hotline: (+ 39) 06 570 52333	

Annex J: Indigenous Peoples

N/A

Annex K: FAO and Government Obligations

(a) This Annex sets out the basic conditions under which FAO will assist the Government in the implementation of the Project described in the attached Project Document.

(b)The achievement of the objectives set by the Project shall be the joint responsibility of the Government and FAO.

FAO OBLIGATIONS

1. FAO will be responsible for the provision, with due diligence and efficiency, of assistance as provided in the Project Document. FAO and the Government will consult closely with respect to all aspects of the Project.

2. Assistance under the Project will be made available to the Government, or to such entity as provided in the Project, and will be furnished and received (i) in accordance with relevant decisions of the Governing Bodies of FAO, and with its constitutional and budgetary provisions, and (ii) subject to the receipt by FAO of the necessary contribution from the Resource Partner. FAO will disburse the funds received from the Resource Partner in accordance with its regulations, rules and policies. All financial accounts and statements will be expressed in United States Dollars and will be subject exclusively to the internal and external auditing procedures laid down in the financial regulations, rules and directives of FAO.

3. FAO's responsibilities regarding financial management and execution of the Project will be as stipulated in the Project Document. FAO may, in consultation with the Government, implement Project components through partners identified in accordance with FAO procedures. Such partners will have primary responsibility for delivering specific project outputs and activities to the Project in accordance with the partner's rules and regulations, and subject to monitoring and oversight, including audit, by FAO.

4. Assistance under the Project provided directly by FAO, including technical assistance services and/or oversight and monitoring services, will be carried out in accordance with FAO regulations, rules and policies, including on recruitment, travel, salaries, and emoluments of national and international personnel recruited by FAO, procurement of services, supplies and equipment, and subcontracting. The candidacies of senior international technical staff for recruitment by FAO will be submitted to the Government for clearance following FAO procedures.

5. Equipment procured by FAO will remain the property of FAO for the duration of the Project. The Government will provide safe custody of such equipment, which is entrusted to it prior to the end of the Project. The ultimate destination of equipment procured under this Project will be decided by FAO in consultation with the Government and the Resource Partner.

GOVERNMENT OBLIGATIONS

6. With a view to the rapid and efficient execution of the Project, the Government shall grant to FAO, its staff, and all other persons performing services on behalf of FAO, the necessary facilities including:

i) the prompt issuance, free of charge, of any visas or permits required;

ii) any permits necessary for the importation and, where appropriate, the subsequent exportation, of equipment, materials and supplies required for use in connection with the Project and exemption from the payment of all customs duties or other levies or charges relating to such importation or exportation;

iii) exemption from the payment of any sales or other tax on local purchases of equipment, materials and supplies for use in connection with the project;

iv) any permits necessary for the importation of property belonging to and intended for the personal use of FAO staff or of other persons performing services on behalf of FAO, and for the subsequent exportation of such property;

v) prompt customs clearance of the equipment, materials, supplies and property referred to in subparagraphs (ii) and (iv) above.

7. The Government will apply to FAO, its property, funds and assets, its officials and all the persons performing services on its behalf in connection with the Project: (i) the provisions of the Convention on Privileges and Immunities of the Specialized Agencies; and (ii) the United Nations currency exchange rate. The persons performing services on behalf of FAO will include any organization, firm or other entity, which FAO may designate to take part in the execution of the Project.

8. The Government will be responsible for dealing with any claims which may be brought by third parties against FAO, its personnel or other persons performing services on its behalf, in connection with the Project, and will hold them harmless in respect to any claim or liability arising in connection with the Project, except when it is agreed by FAO and the Government that such claims arise from gross negligence or wilful misconduct of such persons.

9. The Government will be responsible for the recruitment, salaries, emoluments and social security measures of its own national staff assigned to the project. The Government will also provide, as and when required for the Project, the facilities and supplies indicated in the Project Document. The Government will grant FAO staff, the Resource Partner and persons acting on their behalf, access to the Project offices and sites and to any material or documentation relating to the Project, and will provide any relevant information to such staff or persons.

REPORTING AND EVALUATION

10. FAO will report to the Government (and to the Resource Partner) as scheduled in the Project Document.

11. The Government will agree to the dissemination by FAO of information such as Project descriptions and objectives and results, for the purpose of informing or educating the public. Patent rights, copyright, and any other intellectual property rights over any material or discoveries resulting from FAO assistance under this Project will belong to FAO. FAO hereby grants to the Government a non-exclusive royalty-free license to use, publish, translate and distribute, privately or publicly, any such material or discoveries within the country for non-commercial purposes. In accordance with requirements of some Resource Partners, FAO reserves the right to place information and reports in the public domain.

12. The Project will be subject to independent evaluation according to the arrangements agreed between the Government, the Resource Partner and FAO. The evaluation report will be publicly accessible, in accordance with the applicable policies, along with the Management Response. FAO is authorized to prepare a brief summary of the report for the purpose of broad dissemination of its main findings, issues, lessons and recommendations as well as to make judicious use of the report as an input to evaluation synthesis studies.

FINAL PROVISIONS

13. Any dispute or controversy arising out of or in connection with the Project or this Agreement will be amicably settled through consultations, or through such other means as agreed between the Government and FAO.

14. Nothing in or related to any provision in this Agreement or document or activity of the Project shall be deemed (i) a waiver of the privileges and immunities of FAO; (ii) the acceptance by FAO of the applicability of the laws of any country to FAO, and: (iii) the acceptance by FAO of the jurisdiction of the courts of any country over disputes arising from assistance activities under the Project.

15. This Agreement may be amended or terminated by mutual written consent. Termination will take effect sixty days after receipt by either party of written notice from the other party. In the event of termination, the obligations assumed by the parties under this Agreement will survive its termination to the extent necessary to permit the orderly conclusion of activities, and the withdrawal of personnel, funds and property of FAO.

16. This Agreement will enter into force upon signature by the duly authorized representatives of both parties.