Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 28-Apr-2022 | Report No: PIDA33349

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Project Name	Parent Project ID (if any)
Senegal	P175915	Senegal: Natural Resources Management Project	
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
AFRICA WEST	29-Apr-2022	02-Jun-2022	Environment, Natural Resources & the Blue Economy
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Ministry of Finance and Budget	Ministry of Environment and Sustainable Development, Ministry of Fisheries and Maritime Economy	

Proposed Development Objective(s)

The Project seeks to improve the management of fish and forest resources in target areas and to promote related economic activities.

Components

Component 1 - Institutional framework for managing environmental and social risks and intersectoral collaboration
Component 2 - Resilience and productivity of the fisheries and aquaculture sectors
Component 3 - Sustainable management of forests and ecosystems
Component 4 – Project management

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	100.00
Total Financing	100.00
of which IBRD/IDA	100.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	100.00
IDA Credit	100.00

Environmental and Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Senegal's strong economic performance over the last decade has been disrupted by the Covid-19 pandemic.** The country's economic growth was among the highest in Africa between 2014 and 2018, averaging around 6 percent annually. Most of the foreign exchange came from fisheries, phosphates, groundnuts, tourism, and services. The Covid-19 pandemic disrupted this upward trend: economic growth contracted to 4.6 percent in 2019 and 1.3 percent in 2020, as the pandemic set back services like tourism and transport and key export markets shut down. Growth rebounded to 6.1 percent in 2021 but the recovery outlook remains fragile, given current global high food and energy prices.

2. **Despite impressive growth in the past, poverty and inequality reduction has been slow in Senegal and the Covid-19 pandemic is threatening any gain that has been made, putting additional pressures particularly on the rural poor.** Poverty levels have been reduced by 5 percent, from 43 percent in 2011 to 37.8 percent in 2018-19;[1] but relative to other Sub-Saharan African countries,[2] and considering the country's strong pre-pandemic economic growth, poverty reduction has been slow. In addition, inequality persisted over the same period, with the Gini coefficient remaining at 0.35 and persistent spatial and socio-demographic disparities, including lagging regions in the southeast and gender gaps. The impact of the Covid-19 pandemic is estimated to have caused poverty to increase by 2.1 percent in 2020, equivalent to 357,000 additional poor.[3] Vulnerable rural households may not benefit immediately from the recovery with food insecurity rising following reduced incomes and disrupted supply chains. Additional stress is coming from already-depleted natural resources[4] and

[1] World Bank (2021). *Sub-Saharan Africa – Macro Poverty Outlook: Country-by-Country Analysis and Projections for the Developing World.* Washington, DC

[2] Between 2005 and 2015 poverty reduction in several countries in Sub-Saharan Africa exceeded 1 percent per year: Tanzania (-2.6 percent); Rwanda (-1.5 percent) and Ghana (-1.3 percent). Source: World Bank staff calculations using PovCalNet 2020 harmonized surveys and Macro Poverty Outlook Fall 2019

[3] Source: 2020 High Frequency Survey.

[4] For instance, due to the pandemic and associated response, forested and protected areas in Africa have witnessed increased pressure

growing exposure to climatic shocks, like floods and droughts. The number of moderately or severely food-insecure people in Senegal grew 20 percent (to 6.7 million) from 2014-16 to 2018-20.[5]

3. **The country's eroding natural capital, and climate vulnerability, are affecting Senegal's prospects for sustainable and resilient future economic growth and development.** While the Gross Domestic Product (GDP) per capita, produced capital per capita, and human capital per capita have grown on par from 1998 to 2018, natural capital (i.e., forests, mangroves, fisheries, agricultural land, protected areas, and minerals) has not followed the same pattern and decreased in per capita terms.[6] Ecological modeling confirms this worrying trend, whereby Senegal has become a net borrower of natural resources since 2007.[7] Senegal's natural base is rapidly thinning, given high human and economic pressures, inadequate management (e.g., overfishing and deforestation), and mounting risks (e.g., pollution and climate change). This declining natural capital will act as a headwind on future growth and Senegal's economic growth cannot be sustained unless natural capital is adequately and sustainably managed and climate resilience strenghtened.

4. **Senegal's high vulnerability to climatic shocks is likely to increase, affecting the country's economic and livelihood prospects.** Senegal ranks among the bottom third of those countries most vulnerable to climate change according to the Notre Dame Global Adaptation Initiative Country Index. The annual cost of coastal zone degradation alone, mainly caused by flooding and erosion, was estimated at 7.6 percent of GDP in 2017 (much higher than in Benin, Cote d'Ivoire, and Togo).[8] In a 3°C temperature increase scenario, Senegal's GDP is expected to decrease by 1.27 percent by 2030 and 3.91 percent by 2050.[9] The number of people in extreme poverty could double as early as 2030, due to food price and production shocks as well as human health impacts.

5. **The Government of Senegal (GoS) has taken decisive measures to mitigate the Covid-19 pandemic's socio-economic impact and return to its pre-pandemic growth trajectory, including by sustainably leveraging natural resources and addressing climate change impacts.** In addition to its comprehensive support and recovery plan, the Economic and Social Resilience Program (PRES), the GoS issued, on September 5, 2020, a new version of its Priority Action Plan 2 - Adjusted and Accelerated (PAP2-AA). The PAP2-AA spans 2021-23 and seeks to catch up with the initial growth path of the National Development Plan (*Plan Sénégal Emergent*, PSE) while considering the new challenges from the pandemic and fostering an internally-driven development. The PAP2-AA targets sectors with high growth and job potential, including fisheries, aquaculture, and nature-based tourism. Senegal also updated its Nationally Determined Contribution (NDC) in 2020,[10] in which it commits to reducing its Greenhouse Gas (GHG) emissions by 7 percent by 2030, and 21 additional percent, conditional on external

from communities whose livelihoods have been threatened by the pandemic (e.g., logging, harvesting, game hunting), a drop in revenues (e.g., from natural tourism), and at the same time, postponement of management, protection, and conservation measures. Source: A. Attah (2020). "Initial Assessment of the Impact of COVID-19 on Sustainable Forest Management African States", *Background Paper prepared for the United Nations Forum on Forests Secretariat*. Accessible at https://www.un.org/esa/forests/wp-content/uploads/2021/01/Covid-19-SFM-impact-Africa.pdf

[5] FAO, IFAD, UNICEF, WFP and WHO (2021). *The State of Food Security and Nutrition in the World – Transforming Food Systems for Food Security, Improved Nutrition and Affordable Health Diets for All*. Rome: FAO

[6] Over 1995-2018, GDP per capita (constant 2010 US$) grew 50 percent, Produced Capital per capita 50 percent, and Human Capital per capita 73 percent. In the meantime, Natural Capital per capita decreased 20 percent. Source: World Bank (2021). *The Changing Wealth of Nations 2021: Managing Assets for the Future*. Washington, DC: World Bank

[7] Global Footprint Network (2021). National Footprint and Biocapacity Accounts (data up to 2017). Data and analysis show a long-term trend of increasing ecological footprint (defined as how much area of biologically productive land and water an individual requires to produce all the resources it consumes and to absorb the waste it generates) and decreasing bio capacity (defined as the capacity of ecosystems to regenerate what people demand from those surfaces). Senegal ceased being a creditor in 2007.

[8] Croitoru, L., Miranda, J. and Sarraf, M. (2019). *The Cost of Coastal Zone Degradation in West Africa: Benin, Cote d'Ivoire, Senegal, and Togo*. World Bank.

[9] World Bank. (2020). *The Next Generation Africa Climate Business Plan: Ramping Up Development-Centered Climate Action*. World Bank.

[10] République du Sénégal (2020). *Contribution Déterminée au Niveau National du Sénégal*. Dakar : République du Sénégal

support. In the NDC, the GoS prioritizes the agriculture, livestock, fisheries, and forestry sectors, as they are dependent on natural resources and land use and significantly threatened by climate change.

Sectoral and Institutional Context

Environmental and Social Management

6. **With the adoption of the Environmental Code in 2001, Senegal has developed a national environmental and social (E&S) management system.** This management system, which is coordinated by the Department of Environment and Classified Facilities (DEEC), includes a system to handle urgent environmental issues by the Environmental Emergency Response Center (CGUE), a National Technical Committee for Environmental Assessment (CTNE) with representation from different line ministries and stakeholders, and a decentralized system to monitor environmental performance at the regional level through Regional Environmental and Social Monitoring Committees and the Regional Divisions of Environment and Classified Facilities (DREECs).

7. **As Senegal is engaging in large-scale investments in various strategic sectors (e.g., extractive industries, transport infrastructure, land reform), it is necessary to strengthen its national E&S management system.** Beyond the growing impacts of these investments, this is also motivated by the need to respond to expanded E&S requirements of public and private international companies and investors. To accompany development ambitions and meet enhanced E&S requirements, several areas need strengthening: (i) legislation, to provide guidelines for taking into account environmental challenges (e.g., climate change – on reducing the footprint of proposed investments and on undertaking risk-screening and resilience assessment; various types of pollution – including marine pollution in the context of offshore hydrocarbon exploitation, or biodiversity management) and to prepare E&S management instruments that are operational, and (ii) institutions, to address insufficient human resources and low technical capacity for the satisfactory preparation of the required E&S instruments, to tackle budgetary (i.e., lack of sustainable financing mechanism) and operational (i.e., lack of supervision equipment and need of technological upgrade) bottlenecks in the supervision of the implementation of these instruments, and to overcome centralization of resources and need for greater coordination on the ground. The new Environment Code (under final approval) addresses in part these concerns and creates a need for technical and operational capacity building to facilitate its successful application.

The Fisheries Sector

8. **Senegal's fisheries are of strategic value considering the sector's role in supporting the economy, strengthening livelihoods, and contributing to food security.** Fish production and trade represent about 3.2 percent of Senegal's GDP and 10 percent of exports, a main source of foreign revenue.[11] Reported total annual fish catches have averaged around 400,000 metric tons over the last decade, with about 80 percent being caught by the artisanal sector and the remainder by the industrial sector. Artisanal fishing is essential to overall household well-being in Senegal, providing both income and nutrient-rich food. The sector is estimated to sustain about 600,000-800,000 direct and indirect jobs, though this estimate might have to be revised to reflect the impact of the Covid-19 pandemic.[12] Artisanal fisheries are also crucial for the country's food security by providing more than 70 percent of the population's protein intake and calories.

[11] Agence Nationale de Statistique et de la Démographie (2015). *Comptes Satellites de la Pêche.* Dakar: République du Sénégal

[12] Ministère des Pêches et de l'Economie Maritime (2021). *Document Introductif au Conseil Présidentiel sur la Pêche et l'Aquaculture*. Dakar: République du Sénégal; République du Sénégal (2016). *Plan National d'Adaptation du Secteur de la Pêche et de l'Aquaculture face au Changement Climatique Horizon 2035*. Dakar

9. **Weak governance and management, however, have led to overexploitation of fish resources and degradation of associated habitat.** Out of 15 fish stocks that are monitored (small pelagics),[13] one-third are considered overexploited, one-third fully exploited, and the remainder underexploited.[14] Inadequate fisheries management (i.e., uncontrolled access regime for artisanal fisheries), has resulted in a proliferation of the fleet and corresponding capacity, and consequently in overexploitation and degradation of the main coastal demersal and pelagic stocks. The demersal stocks have also been affected by an expanding industrial fleet characterized by limited transparency of permit attribution and control, and illegal, unreported, and unregulated fishing (IUU). While Senegal was estimated to have lost about US$ 300 million due to IUU fishing in 2012,[15] increased surveillance in recent years seems to have partially kept the growth of IUU fishing under check. Yet IUU fishing is still considered a critical threat, with more than 50 percent of the catches estimated to not have been reported in 2018.[16] Collisions and accidents with artisanal fishers also remain an issue: between 2011 and 2015, there have been 1,015 fatalities.[17] Finally, important fish habitat has been degrading, because of industrial bottom trawling together with destructive fishing practices, pollution, marine plastics, and the reduction of key coastal habitat, such as mangroves, which has an important fish nursery function.

10. **The economic value of fish products generated in Senegal is underexploited and aquaculture underdeveloped.** The seafood supply chain registers high post-harvest losses due to inadequate fish handling and storage (e.g., on board of fishing boats, at landing sites, during transport stages, at processing sites or plants), and insufficient food safety (e.g., poor preservation conditions, low levels of compliance with sanitary norms required for export). Degradation of fish quality also compromises intake of nutrients, decreasing its nutritive value. The development of aquaculture, which offers the potential to re-balance inland development with economic activity, jobs, and food security in the hinterland, has been hampered by the lack of a regulatory and institutional framework, key infrastructure, and technical skills.

11. **Women play a significant role along the fisheries value chain and in fishing communities, but inequalities disadvantage their participation.** Women are estimated to comprise about 15 percent of the workforce involved in fish harvesting, while constituting about 90 percent in the fish post-harvest sector, including processing and marketing. However, persistent gender inequalities because of fewer training opportunities, lack of access to credit, and conservative gender norms, cause their contribution to often be unrecognized, undervalued, and underpaid. Women also tend to have limited decision-making power in fisheries governance institutions and communities.

12. **Climate change is expected to compound these challenges, especially as a large proportion of Senegal's population depends on fisheries for their livelihoods, food security, and nutrition.** By some estimates, for a low and a high GHG scenario, the Maximum Catch Potential could decrease by about 17 and 19 percent by 2050, respectively, and by about 9 and 36 percent by 2100. Fisheries are considered at high risk in both scenarios.[18] The impact of climate change on fisheries will be serious, with fisheries resources under multiple pressures,

[13] Coastal small pelagics are the main fish resources in Senegal (approximately 75 percent of all landings). About 80 percent comprise Sardinella, while other important small pelagics include the Bonga shad, Chub mackerel, horse mackerel, and anchovy. Coastal demersal resources occur within the shelf area or approximately 200 m from shore. This group includes crustaceans (shrimps, lobsters, crabs), cephalopods (octopus, cuttlefish), and fishes (soles, groupers, seabreams, etc.).

[14] M.L.D. Palomares, M. Khalfallah, J. Woroniak and D. Pauly (eds.). 2020. *Assessments of marine fisheries resources in West Africa with emphasis on small pelagics*. Fisheries Centre Research Reports 28(4): 96 pp.

[15] USAID (2013). *The Importance of Wild Fisheries for Local Food Security: Senegal.* [online]. Available at: https://pdf.usaid.gov/pdf_docs/PA00KQB4.pdf (accessed October 8, 2021)

[16] *Sea around us* website and data portal. 2018: 254,210 t reported and an estimation of 312,260 t unreported

[17] MPEM (2021). *Document Introductif au Conseil Présidentiel sur la Pêche et l'Aquaculture*. Dakar: République du Sénégal

leading to severe socio-economic consequences such as the impoverishment of fishing communities. Depletion and migration of fish stocks is projected to make it difficult for small-scale fishermen to reach the stocks, enhanced climate variability to cause an increase in accidents at sea, and coastal erosion and flooding to affect fishing communities and infrastructure.

13. **The GoS recognizes not only the value of the country's fisheries and aquaculture sectors but also the need to address the associated challenges.** The sectors went through great changes over the last decade, including with support from the West Africa Regional Fisheries Project (WARFP), implemented over 2009-16. Several reforms have been implemented including (i) a regulatory reform consisting in the adoption of the Maritime Fisheries Code,[19]the development of the Aquaculture Code and establishment of the related National Aquaculture Agency (ANA); (ii) the planning and monitoring of specific national and shared fisheries[20] based on research data[21] and the modernization of the information and data monitoring system for fisheries management; (iii) the setting up of issuance and monitoring systems for the fishing licenses; (iv) the development of community-based management of fisheries; (v) reinforcing the fight against IUU fishing; (vi) the progressive modernization of certain value chains of fishery products; as well as (vii) the importance given to the aquaculture sector in the country's development strategies and planning. Senegal's Fisheries and Aquaculture Strategy 2016-2023[22] lays out how the sector's contribution to food security, economic growth, and local development can be increased in line with the PSE, while the country's National Climate Change Adaptation Plan for Fisheries and Aquaculture 2035[23] describes how the fisheries sector can better adapt to climate change, particularly by increasing the resilience of coastal fishing communities. The updated NDC[24] identifies and targets specific climate adaptation measures, including sustainable management of fisheries resources, restoration of marine habitats and mangroves, expansion of marine protected areas, increased safety at sea, and development of aquaculture.

14. **The proposed Project, formulated in response to a Government's request for a successor to the WARFP, will build on the achievements to date and support the Government's strategy toward a resilient fisheries and aquaculture sector considering climate impacts.** In particular, the Project will seek to improve the management of fisheries by supporting a larger involvement of communities, which can help increase access control, maintenance of infrastructure, and sustainability of interventions. The proposed Project will also improve the fisheries information system for better-informed management and greater transparency. In addition, the Project will promote the valorization of the halieutic production, by strengthening value chains and their formalization, and the accelerated development of aquaculture, by setting up the enabling framework for the attractiveness of the sector, strengthening technical skills, and financing key infrastructure. Climate-resilience is in-built into the project design, given climate impacts already affecting Senegal.

The Forestry Sector

15. **Forests in Senegal are critical to sustain economic development and livelihoods and to mitigate climate change.** Forests provide a range of ecosystem services that are important to Senegal's population, particularly the poor. Forest ecosystems produce and conserve soil and stabilize water runoff, preventing land degradation and reducing the risks of droughts, floods, and landslides, all important adaptation functions. Forest growth

[19] Act 2015-18 of July 13, 2015 on the Maritime Fishing Code.
[20] Management plans for cymbium and coastal shrimp (WARFP), octopus and deep-sea shrimp (EU), sardinella (USAID) and joint Senegal-Mauritania management plans for shared stocks of mullet and croaker (CSRP joint project)
[21] With the support of the Dakar Oceanographic Research Center – Thiaroye (CRODT).
[22] MPEM (2016). *Lettre de Politique Sectorielle de Développement de la Pêche et de l'Aquaculture*. Dakar: République du Sénégal
[23] République du Sénégal (2016). *Plan National d'Adaptation du Secteur de la Pêche et de l'Aquaculture face au Changement Climatique Horizon 2035*. Dakar
[24] République du Sénégal (2020). *Contribution Déterminée au Niveau National du Sénégal*. Dakar: République du Sénégal

sequesters and stores carbon, contributing to climate change mitigation. As habitat for a wide range of species, forests also support biodiversity conservation. Furthermore, forests contribute to poverty reduction and economic development by providing food, fiber, timber, and other forest products, such as honey, nuts and fruits, natural gums, or medicinal plants for income generation, subsistence, and as safety net for rural populations during lean periods. Forests are a major source of charcoal and timber with about equal production value. Up to 80 percent of Senegal's households rely on fuelwood for their energy consumption. Finally, forests and forested landscapes sustain the tourism sector, providing resources for natural resources management and creating jobs. While a quantification of the contribution of forests to economic activities and livelihoods in Senegal is not available, recent estimates from Burkina Faso (also in the Sudano-sahelian zone) indicate that the forestry sector contributes around 9.6 percent of Burkina Faso's GDP and 40 percent of households derive income from forest-based economic activities.[25]

16. **Despite their crucial role in development, the country's forest areas have significantly declined.** Senegal has engaged in a set of reforms and programs toward improving the sustainable management of its forests, including through support from the Sustainable Management of Traditional and Alternative Sources of Energy Project (PROGEDE), implemented over 2010-18. According to analysis of global forest change data, both PROGEDE I and II supported a significant reduction in deforestation rate in project area, by a factor of four to five.[26] However, deforestation and forest degradation continue to be a major issue. In line with the country's forest definition, the country's forest cover is estimated to have been reduced by 131,000 ha between 2001 and 2020, resulting in approximately 24.5 million tCO_2 emissions. Almost all deforestation is linked to shifting cultivation which is the last step in a cascade of drivers of deforestation and is most pronounced in the southern and south-eastern regions, which are hubs for fuelwood production.[27] Loss of forested areas between 2010 and 2017 is estimated to have been four times greater than reforestation efforts over the same period. In terms of biomass, around 11 million cubic meters have been lost in less than 10 years (2010-17), corresponding to 3 percent of standing stock.

17. **The drivers of deforestation and forest degradation include fuelwood/charcoal overexploitation, illegal logging, clearing for agricultural uses, mining, and forest fires.** These drivers are often interlinked and act in sequence: first illegal logging and then fuelwood production open a dent in the forest, leading to clearing for agricultural activities or encroachment. This process also results in forest fires. Demand for fuelwood is increasing due to population growth, and although cleaner and more efficient options exist, such as liquefied petroleum gas and alternative biomass stoves and fuels, they are largely unaffordable to most of the households. Illegal trade of fuelwood and timber at the border with The Gambia causes revenue loss and further degradation of habitats and ecosystems. Finally, economic shocks such as the Covid-19 pandemic disrupt forest livelihoods, for example those that derive income from ecotourism, and consequently lead to rural communities increasing their extraction from forests, contributing to deforestation.

18. **The important role women play in the forestry sector is widely recognized, but the full contribution of women has not been realized.** Forestry tends to be perceived as a male-dominated sector, even though women

[25] World Bank (2021). *Burkina Faso Forest Country Note: Deep Dive into Forest-Smart Investments.* Washington, DC: World Bank
[26] Annual rate of deforestation PROGEDE 1 areas before community-based management (2001-08): -0.35% and after community -based management (2009-20): -0.07%; PROGEDE 2 areas before community -based management (2001-14): -0.22% and after community -based management (2015-20): -0.06%; New areas pre-identified for development of community-based forest management (2001-2020):-023%; Classified forest (2001-20): -0.09%; Niokolo-Koba National park (2001-20): -0.11%; Analysis using Global forest change data: Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, and J. R. G. Townshend. 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342 (15 November): 850–53. Data available on-line from: http://earthenginepartners.appspot.com/science-2013-global-forest.
[27] According to data presented by Global Forest Watch, Senegal lost of 131,000ha of tree cover (>10%) from 2001 to 2020.

are significantly involved in forest work such as (i) gathering fuelwood, medicinal plants, and other non-timber products; (ii) collecting food for income and family consumption; and (iii) processing secondary wood products. Although women significantly contribute to the forestry sector, they are often employed in seasonal, part-time, low-paying jobs, with wage gaps between male and female workers. Women continue to be disadvantaged by insecure property rights and limited access to forest, trees, and land resources. Like women's standings in the fisheries sector, they are affected by discrimination and bias in the provision of services, and often excluded from participation, leadership roles, and decision-making at household, community, and national levels, and from access to information, credit, benefits, and technologies and inputs. Finally, women spend a significant share of their time (and sometimes also own resources) to collect wood (or acquire charcoal), which they cannot devote to more productive uses, and are often exposed to health hazards (i.e., particulate matter, dioxins) given the conditions under which they cook or smoke fish (or more generally use these solid fuels).

19. **Climate change threatens both forest cover and forest integrity, which in turn affects the livelihoods of those depending on forests and the ecosystem services they provide.** Climate change affects the forest-dependent poor by impeding livelihoods, destroying assets, and reducing ecosystem services. Droughts and more intense precipitation are increasing forests' susceptibility to wildfires and floods, causing forest defoliation, declines in forest productivity, and tree mortality, which consequently reduces the provision of products critical for livelihoods.

20. **In recognition of the challenges that are affecting the country's forest sector, Senegal has embarked on reforming the associated policy environment toward promoting more sustainable approaches.** The following actions have been taken: (i) preparation of a Forest Policy 2005-2025[28] and adoption of a new forest code in 2018 (whose implementation is still hampered by a number of factors);[29] (ii) recognition of the sector's contribution to climate mitigation, as reflected in the NDC; (iii) promotion of community-based forest management linked to fuelwood production; (iv) promotion of modern and alternative energy sources; (v) protection of natural forest areas; and (vi) increased efforts to reduce illegal logging and forest fires.

21. **By building on these strategic efforts and in response to a request from the Government for support, the proposed Project seeks to consolidate and scale-up the success and results achieved under PROGEDE, particularly in view of community-based approaches for sustainable forest management.** Community-based approaches, pioneered under PROGEDE, have been transformative in promoting integrated forest management and providing gains in income, living conditions, sustainability, and climate resilience in Senegal. Experience with PROGEDE has shown that fuelwood can be a successful entry point into sustainable forest management, enticing participation of communities, addressing several drivers of forest and ecosystems degradation, enhancing income and livelihoods. The results from the two PROGEDE phases clearly show positive impacts with regard to reducing deforestation in community-based managed forest areas, contributing to reducing GHG emissions from deforestation and forest degradation. Fuelwood provides a strong incentive for communities to engage in sustainable forest management as it is in their own economic interest. It can involve a mix of forest management activities, including management and fight against illicit logging; reforestation, fencing, and assisted regeneration; control of bushfires; as well as fuelwood production (possibly mixed with agroforestry). It can also promote emerging business and value chains (i.e., improved stoves production).

[28] Ministère de l'Environnement et de la Protection de la Nature (2006). *Politique Forestière du Sénégal 2005-2025*. Dakar: République du Sénégal

[29] These factors include: a lack of regulations facilitating the Code's implementation, a lack of proper understanding of its provisions by the authorities, and its poor dissemination to stakeholders.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

22. The Project seeks to improve the management of fish and forest resources in target areas and to promote related economic activities.

Key Results

23. The PDO-level indicators are the following:

a. Forest area brought under management plans (ha);
b. Targeted areas brought under artisanal territorial use right regimes for fishing monitored by geolocation system (number);
c. Income generating activity program implemented in targeted forest areas (number);
d. Share of fisheries products landed and transformed according to improved practices at project-supported sites (Percentage);
e. Increase in aquaculture production (t).

Specific climate-related, gender, and citizen engagement indicators have been integrated in the results framework.

D. Project Description

24. **Component 1 – Institutional framework for managing environmental and social (E&S) risks and intersectoral collaboration (US$17 million).** This component aims to strengthen institutional capacities for managing the environmental and social impacts of projects and programs and intersectoral coordination for managing natural resources.

25. **Sub-component 1.1. Strengthening the E&S risk management framework (US$13 million).** Senegal has developed a national environmental and social management system and 20 years after the adoption of the Environment Code in 2001,[30] Senegal is committed to modernizing the existing systems, institutions, and tools. This sub-component will support: *(a) strengthening management of environmental and social risks*, including dissemination of the new Environment Code; preparation of related regulations and guidelines including on climate change risks and mitigating measures; development of an E&S management training program for key ministries, staff of the Project Implementation Units (PIUs), and young professionals; and development of a digital monitoring system for EIAs and ESMPs; *(b) enhancement of environmental monitoring systems,* including the management of environmental emergencies into the regions (technical assistance, training, equipment, and information systems) and the expansion of the air quality monitoring system. A revamped Environmental Emergency center (CGUE) will facilitate the monitoring of, and response to, climate-related emergencies (such as floods), which are expected to become more prevalent as climate change intensifies. This is well aligned with the Disaster-Risk Management objective of the climate adaptation area of Senegal's NDC. Improving the forecasting capacity of the Air Quality Management Centre (CGQA) and its communication and alert system will also contribute to climate adaptation as air quality could deteriorate in future with more prevalent dust storms.[31]

[30] Act no 20001-01 of January 15, 2001 on the Environment Code / Decree 2001-282 of April 12, 2001 on the implementation of the Code
[31] including to the occurrence of more extreme wind events and a shift to drier climates increasing wind erosion and sand and dust storms:

26. **Sub-component 1.2. Streamlining the management of marine, coastal, and forest resources (US$2 million).** This sub-component promotes an integrated approach to manage forest and fishery resources to improve their climate resilience, sustainability, and productivity: *(a) ensuring consistent management of artisanal fisheries and marine and coastal natural resources*, in order to support sustainable regeneration of fish stocks by enhancing ecosystem services. This landscape management approach for fisheries will strengthen the resilience of coastal communities by stabilizing local conditions in order to cope with the impacts of climate change on the abundance of fish. Activities will include: climate-smart marine spatial planning; the harmonization of management rules for artisanal fisheries in marine protected areas and restricted artisanal fisheries areas; improvement to the coordination of marine surveillance of fisheries and protected areas; and *(b) enhancing the sustainability of smoked seafood product chains*, both in terms of sustainable supply (of marine resources and fuel) and of sustainable practices and technologies (ensuring a reduction of fuelwood consumption from mangroves and forests and therefore a reduction in GHG emissions from deforestation).

27. **Sub-component 1.3. Strengthening citizen engagement in relation to environment, climate, fisheries and forestry (US$2 million).** This sub-component is meant to increase citizen engagement in favor of environmental protection, sustainable management of marine and forest resources, and climate action. It will do so through awareness-raising and education activities on the value of these resources and the services they provide for climate regulations and environmental protection. The activities financed by the Project include *the development of a communication strategy and action plan* and *support for the implementation* of these communication strategies and plans for (a) the Ministry of Fisheries and Maritime Economy (MPEM) and for (b) the Ministry of Environment and Sustainable Development (MEDD).

28. **Component 2 – Resilience and productivity of the fisheries and aquaculture sectors (US$45 million).** This component will support Senegal's efforts to reform the fisheries and aquaculture sectors to make them more productive and resilient to climate change. In line with *Senegal's Fisheries Adaptation Action Plan*, activities will provide important climate adaptation co-benefits, such as strengthened fisheries management, which help stock recover, become healthier, and thus more resilient to the on-going impacts of climate change; climate-smart co-management plans and income diversification activities implemented for vulnerable fishing communities; improved safety at sea and climate-resilient coastal infrastructure built to cope with more prevalent storms and coastal erosion; and aquaculture sector supported, acting as a buffer to mitigate the volatility that climate change could impose on marine fisheries.

29. **Sub-component 2.1. Strengthening fisheries management and community-based fisheries management initiatives (US$17.6 million).** This sub-component will build on the fisheries reforms achieved under the WARFP. It will strengthen the functional links between the different pillars of fisheries management and scale-up community-based fisheries management initiatives with:

a. *Implementation of selected fisheries management plans, vessel registration systems, and allocation of fishing permit and licenses* through legal and technical assistance for (i) the development of territorial user rights for fisheries and a fishing rights allocation process and their application to targeted fisheries;[32] (ii) scientific monitoring from the *Oceanographic Research Centre of Dakar-Thiaroye;* (iii) capacity building at MPEM to monitor management plans (institutional diagnosis, training, technical, and IT equipment); (iv)

Simulations suggest that global annual dust emissions have increased by 25% to 50% over the last century due to a combination of land use and climate changes: https://uneplive.unep.org/redesign/media/docs/assessments/global_assessment_of_sand_and_dust_storms.pdf *https://documents1.worldbank.org/curated/en/483941576489819272/pdf/SAND-AND-DUST-STORMS-IN-THE-MIDDLE-EAST-AND-NORTH-AFRICA-MENA-REGION-SOURCES-COSTS-AND-SOLUTIONS.pdf*

[32] for Volute (Cymbium), White shrimp (Penaeus notialis) and Octopus

modernization of the canoe registration and key professions and personal identification systems (IT equipment and software, registration virtualization, campaigns); (v) dematerialization of the industrial fishing license allocation system (development of procedures and transparent license application, issuance, and monitoring system); and (vi) carrying out specific studies on strategies, economic, and sustainability to strengthen fisheries management.[33]

b. *Enhancing maritime monitoring, control, surveillance, and improving information systems for transparency.* The Project will: (i) improve the intervention capacities of the MPEM in combating IUU (technical equipment, patrol boats and other operational support, and training program); (ii) promote the use of new technologies with electronic logbook for industrial fishing declarations and geolocation of artisanal fisheries for monitoring and safety at sea (technical assistance for data processing, capacity building, equipment, and software); (iii) facilitate construction and equipment of surveillance and control infrastructure to complement the existing network, including coastal surveillance stations, units, and checkpoints in key areas for monitoring and control; and (iv) support the development and roll-out of the MPEM's information and monitoring-evaluation system (technical assistance and IT equipment to support data collection and processing, community-based monitoring operations, and training program), and its use to support international fisheries transparency processes;[34]

c. *Strengthening and scaling up community-based fisheries management initiatives* that were initiated in 2005.[35]The proposed Project will help strengthen and expand community-based management initiatives as follows: (i) climate-informed management planning and regulation for existing and new community-led management initiatives and zones; (ii) support to communities in co-management initiatives (technical assistance for awareness raising, capacity building, including on climate change considerations, operations of community-led fisheries management committees); (iii) support for income diversification (strengthening the resilience of vulnerable fishing communities by diversifying their source of income away from a source under threat)[36] with specialized NGOs' support; (iv) construction of infrastructure in support of fisheries community-based management initiatives (construction and equipment of "Fishermen's Houses", headquarter for the network of local councils for artisanal marine fishing - CLPA, and immersion of new artificial reefs).

30. **Sub-component 2.2. Strengthening the value chains of selected fisheries (US$17.4 million).** This sub-component will contribute to improving the environmental, economic, and social sustainability of selected fishery product value chains, as follows: *(a) Climate-informed construction and/or upgrading of landing, preservation, and processing infrastructure for fish products* in support of community-led management initiatives in targeted areas (fishing docks processing units, and centers for experimentation and promotion of fish products) with climate-smart options (shift to renewable energy sources and enhance resilience to coastal erosion and storm surges); *(b) Technical assistance to improve the technical and commercial aspects of the related value chains* through technical assistance for capacity building of the beneficiaries from 2.2.a above[37] and

[33] i.e., assessment and update of the sectoral policy declaration and related investment framework, fisheries and aquaculture satellite accounts, contribution of the fishing sector to the economy, taxation and subsidies, profitability of artisanal and industrial fishing units, and supply and demand for fishery products, impact of deep-sea trawling practices, impact of climate change and update of the fisheries adaptation plan, mainstream a gender perspective, integration of international seafarer labor standards in the national regulations…

[34] as the Fisheries Transparency Initiative (FiTI), International Commission for the Conservation of Atlantic Tunas (ICCAT) or Organization for Economic Co-operation and Development

[35] Community-based fisheries management was piloted in Bétenty, Foundiougne, Ngaparou, and Ouakam in 2005; the first ZER and ZIP were created in Ouakam in 2008 and extended to the Petite-côte sites: Mballing, Mbodiène, Nianing, and Pointe Sarène.

[36] Beekeeping, soap making, plastic recycling, firewood nurseries, aquaculture / mariculture, etc.

[37] Economic Interest Groups – GIEs to manage wharves and small-scale processing centers, women associations responsible for the modernized smoking units, and managers of the centers for experimentation and promotion of fish products.

for marketing, labeling, and certification of initiatives that promote specific local products (technical assistance to develop guidelines for fish production and processing, support compliance system, marketing of labels,[38] and Marine Stewardship Council (MSC) accreditation process);[39] *(c) Monitoring and control operations to improve the sanitary quality of targeted fishery product value chains* setting health standards and control rules (technical assistance to develop health control plans, inspection protocols, quality guidelines for processing units and landing sites and an associated regulatory framework, as well as related awareness raising activities), and operationalization of the monitoring and control activities of the Fisheries Processing Industries Directorate – DITP (provision of equipment and vehicles for inspection and certification processes, capacity building, and support accreditation to inspection bodies standard ISO 17020).

31. **Sub-component 2.3. Supporting the development of aquaculture (US$10 million).** This sub-component, to be implemented with ANA, aims to strengthen the aquaculture sector, by: *(a) Creating an enabling environment for sector attractiveness* (technical assistance for aquaculture regulation support,[40] sector's growth potential, and spatial planning for sector's development); *(b) Building climate-informed technical capacities of stakeholders* with support to a research program (food sustainability, genetic improvements, aquaculture zootechnics or disease management), capacity building of ANA teams (provision of technical and IT equipment, and vehicles and monitoring operations), and capacity building of the sector's stakeholders (technical assistance, training program for the producers, and support for structuring national and regional associations of producers) and; *(c) Developing aquaculture hubs through the construction or rehabilitation of key infrastructure*, including hatcheries / nursery stations and farm schools / training centers. A series of aquaculture sites has been pre-identified and the technical and socio-economic feasibility studies should confirm the investments that will be carried out under the proposed Project. The feasibility studies will incorporate climate considerations and trends, so that any hubs are appropriately placed to mitigate climate risks.

32. **Component 3 - Sustainable management of forests and ecosystems (US$32 million).** This component will support integrated forest management to slow down forest degradation in the strategic regions of Kédougou, Kolda, Sédhiou, and Tambacounda. Good forest management practices are critical for landscapes to be climate-resilient, which in turn will provide resilience to communities and their livelihoods. As forests are a carbon sink, this component will also lead to GHG mitigation.

33. **Sub-component 3.1. Strengthening the institutional framework for forest management and monitoring (US$6.4 million).** This sub-component will support regional and national activities toward improved integration and coordination through: *(a) Coordinating interventions in the forestry sector by the central management of the Water and Forests, Hunting and Soil Conservation Directorate - DEFCCS* (Forest code regulation support[41], technical capacity building[42], and operational capacity building including provision of IT equipment, field vehicles, training on use of new technology, and contribution to costs of field supervision by head office); *(b) Improving forest knowledge and monitoring* (technical assistance, training and field work to support a national forest monitoring system[43], and a forest product traceability system) and; *(c) Facilitating cooperation on illegal timber*

[38] Pre-identified local products labeling initiatives include: (i) Casamance shrimps, (ii) seafood from the UNESCO world heritage site of the Saloum Delta or (iii) mollusks from the Petite-Côte, selected because of the support for these fisheries within the Project and promising value chains

[39] MSC pre-assessments have been completed in February 2021 on the sole, line tuna, and flat sardinella.
[40] The Aquaculture Code was adopted by the Council of Ministers on October 20, 2021.
[41] support the implementation of the Forestry Code (i.e., implementation decrees, translation into local languages, and awareness raising
[42] CITES regulations, support systems for forest monitoring including the Mapping, Resource Assessment and Information System Unit
[43] The last national forest inventory was carried out in 2004.

trade by building on the high-level dialogue initiated between Senegal and The Gambia (regional study on illegal timber trade to identify measures to stop illegal cross-border timber trafficking, and support to regional coordination meetings with relevant regional and international stakeholders).

34. **Sub-component 3.2. Strengthening community-based forest management, domestic energy sources, and sustainable use of fuelwood (US$11.2 million).** This sub-component will support *(a) Community-based forest management* (as the rate of forest loss in these forests is significantly lower than in non-managed areas)[44] for fuelwood production (capacity building for local fuelwood producers, definition of forest management rules, logging rights for a fair access to the resource,[45] and development of standards for sustainable forest management based), for forest conservation in classified forests and community nature reserves (technical assistance for simplified management planning and governance bodies), and income diversification with support of national NGOs to develop agroforestry and ecological activities targeting women's and youth groups to reduce the pressure on forest resources; and *(b) Energy efficiency and diversification of domestic energy sources* to reduce fuelwood consumption with diffusion of improved cookstove, expected to result in a 30 percent reduction in fuelwood consumption compared to traditional cooking in Senegal[46] (technical assistance and direct support to the value chain) and supporting selected NGOs for the development of promising alternatives as bio coal from Typha and charcoal dust or the use of bio digesters and biogas.

35. **Sub-component 3.3. Valorization of natural forest capital (US$14.4 million).** In addition to promoting community-based forest management, the enhancement of natural forest capital requires public authorities to protect natural forests, including protected areas and classified forests, and eliminate or reduce illegal logging, export of timber, and forest fires. This sub-component will therefore support: *(a) Strengthening decentralized forest management, the fight against illegal timber trade and forest fires* (technical support, use of new technologies and digital systems,[47] minor infrastructure and forest protection works, provision of IT, technical equipment, provision of bushfire fighting vehicle); and *(b) Management and valorization of the Niokolo-Koba national park* (technical assistance to update the management plan and capacity building for field rangers and National Parks Directorate, constructing minor infrastructure, providing technical/IT equipment and field vehicles, developing a destination vision and Investment plan and contributing to missions and operations).

36. **Component 4 – Project management (US$6 million).** This component will support the operating costs of the two PIUs, at the MEDD (sub-component 4.1) and at the MPEM (sub-component 4.2), responsible for overall project management and oversight, and related bodies (e.g., National Steering Committee, Technical Committees, etc.). Support will be provided for implementation planning, coordination, and support, technical expertise, fiduciary management, compliance under the Environmental and Social Framework (ESF), including operationalization of the Grievance Redress Mechanism, as well as monitoring, evaluation, and project reporting.

[44] Annual rate of deforestation PROGEDE 1 areas before community-based management (2001-08): -0.35% and after community -based management (2009-20): -0.07%; PROGEDE 2 areas before community -based management (2001-14): -0.22% and after community -based management (2015-20): -0.06%; New areas pre-identified for development of community-based forest management (2001-2020):-023%; Classified forest (2001-20): -0.09%; Niokolo-Koba National park (2001-20): -0.11%; Analysis using Global forest change data: Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, and J. R. G. Townshend. 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342 (15 November): 850–53. Data available on-line from: http://earthenginepartners.appspot.com/science-2013-global-forest.

[45] Including if the forests managed for the production of fuelwood are classified forests: the conclusion of concession agreements between the authority and the communities to delegate the management of fuelwood sustainable production

[46] Bensch, G., & Peters, J., The intensive margin of technology adoption – Experimental evidence on improved cooking stoves in rural Senegal, Journal of Health Economics, Volume 42, 2015, Pages 44-63, ISSN 0167-6296, https://doi.org/10.1016/j.jhealeco.2015.03.006.

[47] The SMART-Spatial Monitoring and Reporting Tool system is used by officers of the National Parks Directorate and can be extended to the entire Water and Forestry teams in the targeted regions. https://smartconservationtools.org/

Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

37. The Project is being implemented under the World Bank Environmental and Social Framework (ESF). The overall project E&S risk classification for this project is Substantial (both for environmental and social risks). This classification considers the capacity of the implementing agencies and other stakeholders involved to manage E&S risks in line with the ESF's Environmental and Social Standards (ESS).

38. Eight (8) of the ten ESSs are considered relevant to the proposed project: ESS1 (Assessment and Management of Environmental and Social Risks and Impacts); ESS2 (Labor and Working Conditions); ESS3 (Resource Efficiency and Pollution Prevention and Management); ESS4 (Community Health and Safety); ESS5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement); ESS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources); ESS8 (Cultural Heritage); and ESS10 (Stakeholder Engagement and Information Disclosure).

39. The Project is expected to have overall positive environmental and social impacts as it seeks to strengthen the management of natural resources (fisheries and forest resources) in target areas, aiming for enhanced productivity, livelihoods, and resilience, as well as to strengthen environmental and social risk management. Projects' activities to be financed under components 2 and 3, including constructions/rehabilitations, tree plantation and other forest management activities, aquaculture hubs development, will entail risks related to occupational health and safety, labor and working conditions, community health and safety, including Sexual Exploitations and Abuse and Sexual Harassment (SEA/SH) risks; possible land acquisition and involuntary resettlement; resource efficiency and pollution, mainly due to disposal and the management of construction waste, water pollution, biodiversity loss and contamination. Most of these impacts are expected to be site-specific and shall be managed in a systematic manner throughout the project cycle with robust mitigation measures proportionate to the nature and scale of the Project. A project Environmental and Social Management Framework (ESMF) was prepared to identify risks and impacts and proposed mitigation measures.

40. The social risk rating of the Project is considered Substantial due to following risks : (1) Risk of social conflict is to be expected around the exploitation and management of fisheries and forestry resources if mitigation measures are not taken in a concerted manner with actors operating in the sectors who specifically draw their livelihoods from these activities; (2) a substantial risk may arise from the lack of participation of all actors in the establishment and strengthening of management frameworks and also around the equitable exploitation of resources; (3) activities under components 1, 2, and 3 may induce risks related to Sexual Exploitation Abuse and Harassment (SEAH). Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) Risk Rating Moderate

41. Measures to mitigate risks and impacts are set out in the following prepared documents: the Environmental and Social Management Framework (ESMF) in line with ESS1, the Resettlement Policy Framework

(RPF) in line with ESS5, the Stakeholder Engagement Plan (SEP), including the project Grievance mechanism (GM) in line with ESS10, the Labor Management Procedures (LMP) in line with ESS2, and the Sexual Exploitations and Abuse and Sexual Harassment (SEA/SH) Prevention and Response Action Plan (included in the ESMF) in line with the World Bank Good Practice Note on Addressing SEA/SH in Investment Project Financing. Borrower commitments regarding the management of risks are captured in the Environmental and Social Commitment Plan (ESCP) to be negotiated and agreed upon with the World Bank.

42. Site specific Environmental and Social Impact Assessments (ESIAs) with their Environmental and Social Management Plans (ESMPs), as well as Resettlement Action Plans (RAPs), will be prepared during project implementation as per the result of the E&S screening process in line with the prepared ESMF. The ESMF provides guidance for the preparation and implementation of the E&S process and the preparation of the specific ESIAs for sub-projects, as they will be identified, including ESMPs. All prepared instruments mentioned in the previous paragraph have been disclosed in the country and the Bank external website.

E. Implementation

Institutional and Implementation Arrangements

43. **The institutional and implementation arrangements for the Project seek to ensure clear accountability and effective coordination among the two ministries.** During project preparation, the MEDD and the MPEM have confirmed their interest in preparing a joint project to address common issues (e.g., smoked seafood value chains and management of coastal and marine zones and resources) and to share experience on how to scale-up community-based natural resource management initiatives. The Government has also requested to maintain technical and fiduciary management autonomy for each of the sectors to ensure flexibility in implementation. Consequently, the proposed institutional and implementation arrangements include: (i) the establishment of a single steering committee; (ii) the operationalization of two technical committees, one for each ministry; and (iii) the establishment of two Project Implementation Units (PIUs). In addition, decentralized services of the MEDD and MPEM and experienced firms/NGOs will support implementation on the ground.

44. **The establishment of a single Project Steering Committee (PSC)** for overall strategic guidance, coordination, and oversight of the Project. The Committee will meet on a semi-annual basis to (i) review the project progress report and validate the Annual Work Plan and Budget (AWPB); (ii) provide guidance on policy matters and major project realizations or deliverables; (iii) facilitate coordination across agencies and implementation as needed; and (iv) support outreach and resource mobilization. The PSC will be co-chaired by the Minister of the Environment and Sustainable Development and the Minister of Fisheries and Maritime Economy – or their designee. The Secretariat will be managed jointly by the two Project Coordinators and will organize the PSC meetings and prepare the related documents to be discussed. The costs of organizing the meetings will be borne in turn by each PIU. The PSC must be established within three months following Effectiveness by inter-ministerial decree and membership will include representatives from other key Ministries and national agencies, professional organizations, representatives of associations and NGOs. Between the meetings of the PSC, further inter-agency coordination will be supported by regular (i.e., on a one-month basis) meetings of the Project Coordinators and Directors at the MEDD and the MPEM.

45. **The establishment of two Technical Committees (TCs)**, one for each ministry, to facilitate coordination among the various departments and institutions involved in the implementation of each of the sectoral technical components. These two committees will meet every six months ahead of the meeting of the PSC to validate documents and agenda items to be discussed during said meeting, and more frequently as needed. The TCs will

(i) provide technical guidance and oversight in implementing project activities within the purview of each ministry; (ii) undertake coordination among the various departments and institutions involved in the implementation of those activities; (iii) ensure coordination between Project activities and other technical and financial partners initiatives; and (iv) assess and recommend technical expertise required to implement project activities. The TCs will be chaired respectively by the Secretary-General of the MPEM or the Director of Cabinet at the MEDD, or their designees, with their respective PIUs as Secretariats. They must be established within three months following Effectiveness and their membership will include all relevant directorates, institutions, and agencies for each Ministry. Further intra-agency coordination will be managed day-to-day and as relevant by the Project Director and Coordinator.

46. **Two Project Implementation Units (PIUs)**, one for each ministry, for overall project management, facilitation of work programs, fiduciary management, supervision of ESF compliance, monitoring, evaluation, and project reporting. The MEDD PIU will be responsible for activities under components C1.1; C1.2.a, C1.3.a, C3, C4.1 and the MPEM PIU under components C1.2.b, C1.3.b, C2; C4.2. Each PIU will be headed by a Project Coordinator supervised by the Project Director (the Director of Cabinet at the MEED and the Secretary-General at the MPEM), supported by a core team of specialists in technical topics as well as project management. The responsibilities for reporting are clearly assigned and include: (i) Activity report, compiled and submitted by the Secretariat, based on contributions by each PIU according to well-defined outline; (ii) Environmental and Social Framework: each of the two PIUs, as stipulated in the Environmental and Social Commitment Plan; and (iii) Financial Management (unaudited quarterly financial reports, annual audit reports, annual budgeted work plan): MEDD fiduciary team in charge of consolidating the contributions of the two PIUs. The financial and procurement functions of the MEDD PIU will be carried out by the existing fiduciary team of the WACA/EHPMP PIU hosted by the DEEC, which will be strengthened with the recruitment of an additional accountant (senior accountant) and an additional procurement specialist to cope with the increased level of activity (including financial management responsibility and coordination for the Project, as mentioned above. This arrangement will help strengthen project management capacity within the MEDD and retain skilled experts with a growing experience. Contracts and Terms of Reference for fiduciary personnel working across several World-Bank financed projects will duly reflect these cross-support arrangements. The DEEC and the two PIUs (at MEDD and MPEM) will sign a Memorandum of Understanding, to support E&S monitoring through the mobilization of the CTNE and the Regional Committees for Environmental and Social Monitoring in the project areas. Each PIU will be staffed according to the following modalities: (i) the secondment of civil servants by the Ministry to the management of the Project; and (ii) the recruitment on a competitive basis of external consultants (the latter modality also being open to civil servants made available by their ministry). Project funds can't be used to pay salaries or top-ups for civil servants.

47. **Decentralized services of the MEDD and MPEM and experienced firms/NGOs will support implementation on the ground.** Local representatives of the two ministries will in particular assist with monitoring and surveillance of activities and also liaison with local authorities and headquarters. They will benefit from targeted capacity building and equipment to assist them in their mission. In addition, experienced firms/NGOs will be selected for capacity building and facilitation activities, especially in support of community-based management activities and income-generating activities.

48. **A detailed Project Implementation Manual (PIM) will be prepared before implementation begins.** The PIM will detail the roles and responsibilities at the national, subnational, and local levels and implementation arrangements for the project components, the technical activities, E&S risk management, M&E, Financial Management (FM) including coordination process, and procurement procedures.

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