Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 09-Dec-2021 | Report No: PIDA30219

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Project Name	Parent Project ID (if any)
Philippines	P174137	Fisheries and Coastal Resiliency Project	
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
EAST ASIA AND PACIFIC	14-Dec-2021	28-Feb-2022	Environment, Natural Resources & the Blue Economy
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Department of Finance	Department of Agriculture - Bureau of Fisheries and Aquatic Resources	

Proposed Development Objective(s)

To improve management of targeted fisheries resources and enhance the value of fisheries production to coastal communities in selected Fishery Management Areas (FMAs).

Components

Fisheries and Coastal Resilient Resource Planning and Management (FishCRRM)
Modern and Resilient Livelihood Investment (MARLIN)
Project Implementation and Management

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	237.96
Total Financing	237.96
of which IBRD/IDA	200.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	200.00
Non-World Bank Group Financing	
Counterpart Funding	37.96
Borrower/Recipient	12.86
Local Communities	4.34
Local Beneficiaries	20.76

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. Previously one of Asia's fastest-growing economies, the Philippines has been affected by lingering COVID-19 impacts, which has threatened to reverse the recent development gains; nonetheless, the economy is expected to grow over the medium term. Since 2010, the Philippines registered its strongest and longest stretch of growth acceleration, becoming one of the best growth performers in the region – annual economic growth averaged 6.4 percent in 2010-19, second only to China, among large economies in the East Asia and Pacific region (EAP). With the advent of the COVID-19 pandemic, however, the prospect of gaining upper-middle income status in the short term has become increasingly uncertain. At an early stage of the pandemic, the Government of the Philippines (GOP) tackled the crisis with a sweeping multi-sectoral response plan, including the "Build, Build, Build" program augmenting public infrastructure investment aimed at economic growth and poverty reduction as well as the "Plant, Plant, Plant" program of the Department of Agriculture (DA) to enhance food security. Furthermore, mobility restriction measures were also imposed, such as the Enhanced Community Quarantine (ECQ; effectively a total lockdown) with a view to containing the spread of the virus. The strict ECQ was implemented multiple times covering a wide geographic area of the country, considerably slowing down economic activities and reversing the hard-won economic gains achieved in recent years. The country's GDP growth rate plummeted to close to negative 10 percent in 2020; meanwhile, its employment and labor force participation also declined by over 3 percent with considerable implications for poverty and inequality[1]. More recently, while the surge of the delta variant posed a renewed threat, domestic economic activity appeared to have been less sensitive to infections than in previous

[1] World Bank. 2021. https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=PH

episodes. According to a recent WB report, economic growth is expected to recover in the medium term, averaging at 5.8 percent in 2022-2023[2].

2. The Philippines has a population of 107 million and is spread across more than 7,000 islands. These diverse tropical islands are grouped into three geographic areas: Luzon, the Visayas and the southern island of Mindanao. The population has an annual growth rate of 1.4 percent and 47 percent live in urban areas. The population is relatively young with only 5 percent of the population aged 65 years and older[3]. Adult literacy is high (98 percent in 2015) and the average life expectancy was estimated at 71 years in 2018. However, current trends reveal mixed human capital outcomes that undermine the wellbeing and productivity of current and future generations. The Philippines ranked 84th out of 157 countries in the WBG Human Capital Index (HCI), which measures the impact of human capital on future growth prospects. The national HCI for the Philippines (0.55) indicates that the future productivity of a child born today in the Philippines will be 45 percent below what could have been achieved with complete education and full health[4].

3. Income inequality, although declining, remains stubbornly high and one of the highest in the region. Despite the rapid economic growth, the average real wage has been stagnant since 2000 partly owing to a lack of market competition. Ethnic, geographic and demographic diversity are reflected in inequitable income and access to social services across and within the islands. The geography of poverty reflects the strong nexus between poverty and vulnerability, both to conflict and to the impacts of natural hazards and climate change. While under 5 percent of the population in Metro Manila falls below the national poverty line, the highest poverty rates, exceeding 50 percent of the population, are in two areas: (i) conflict-affected areas of western Mindanao and islands of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) which have significant indigenous populations and ethnic minorities, and (ii) provinces in the Eastern Visayas region, which have the highest typhoon exposure.

4. Natural capital makes a significant contribution to the Philippines' wealth, but underperformance of related sectors leaves considerable unrealized potential for increasing its economic contribution. Natural capital accounts for 18 percent of the country's total capital without taking into consideration coastal and marine natural resources. While this percentage is lower than neighbors with rich fossil fuel reserves, such as Vietnam and Indonesia (34 percent and 20 percent respectively), it is higher than the average of developing countries in EAP – 15 percent[5]. However, the agriculture, forestry, fisheries and tourism sectors perform significantly below their potentials. Agriculture's share of GDP in 2017 was 9 percent and its annual growth rate lags behind that of regional peers. From 2002 to 2020, Philippines lost 12% of its total tree cover and the total area of humid primary forest decreased by 3.3%[6]. Fisheries and tourism have lost market share amid increasingly fierce competition with neighboring countries.

5. Being extremely vulnerable to natural hazards, the Philippines is characterized by a particularly acute nexus of environmental, climate and disaster impacts in coastal areas; small-scale municipal fishers bear the brunt of such compounded vulnerabilities. More typhoons make landfall in the Philippines than any other country but China. The archipelagic nation was identified as one of the 15 countries which form over

[2] World Bank (2021) Philippines Economic Update DECEMBER 2021 EDITION: Regaining Lost Ground, Revitalizing the Filipino Workforce.
[3] World Bank (2019) Systematic Country Diagnostic of the Philippines: Realizing the Filipino Dream for 2040.
[4] World Bank (2019) Human Capital Index.
[5] Lange, Glenn-Marie, Quentin Wodon, and Kevin Carey, eds. (2018) The Changing Wealth of Nations 2018: Building a Sustainable Future. Washington, DC: World Bank. doi:10.1596/978-1-4648-1046-6.
[6] Global Forestry Watch. 2021.

90% of the world's most vulnerable population in the low-elevation coastal zone (LECZ)[7]. Around three quarters of Filipinos are vulnerable to natural disasters, which have killed 33,000 people and cumulatively affected 120 million in the last 30 years. The anticipated economic cost is significant. According to one study that estimates long-term climate change impacts on macroeconomy across the Asia-Pacific region using an integrated assessment model, losses of approximately 12 percent of GDP are anticipated for the Philippines by the year 2100 – far exceeding the regional mean of 7.3 percent[8]. Approximately 16.7 percent of the population resides in low-lying coastal zones that are often subject to a variety of mutually reinforcing hazards. Coastal ecosystems, which provide valuable services including coastal defense, have been significantly degraded with less than 3 percent of coral reefs being in pristine condition and over 50 percent of mangroves having been lost since 1918[9]. Pollution is also a severe problem in many sheltered coastal waters. Climate change is expected to increase the frequency and intensity of typhoons and storm surges, while at the same time jeopardizing remaining coastal ecosystems. Projections suggest a potential reduction of coastal GDP by up to 52.3 percent due to intensified storm surges by 2100 and that 45 percent of wetlands will be at risk[10]. Small-scale municipal fishers, who play an important role in providing food security coastal fishing communities and the growing population of the country, bear the brunt of such compounded vulnerabilities as their livelihood is critically dependent of the health of natural resources that are under multiple threats[11].

6. The Philippines has underinvested in infrastructure, resulting in a large infrastructure deficit particularly in coastal areas. Among the 141 countries included in the World Economic Forum's 2019 Global Competitiveness Index, the Philippines ranks 96th with respect to the overall quality of infrastructure – the worst among the East Asian peers on the list[12]. Expenditures related to coastal infrastructure accounted for only 0.55 percent and 1.7 percent of the total budget of the Department of Public Works and Highways (DPWH) in 2017 and 2018 respectively. Grey infrastructure is prevalent along coastlines in the Philippines in areas such as the Eastern Visayas (Samar and Leyte islands) with seawalls and groins being used extensively for protection from erosion, storm surges and coastal flooding. However, efficacy and effectiveness of the coastal protection measures currently used is uncertain as many of the observed investments are of small scale and lack continuity along the coastline. In terms of natural coastal-protection services, it is estimated that mangroves provide coastal protection services valued at USD 1 billion annually[13] .

Sectoral and Institutional Context

7. The Philippines' fisheries sector contributes significantly to the national economy, food security,

[7] World Bank (2015) Climate Change Impacts on Rural Poverty in Low-Elevation Coastal Zones. Policy Research Working Paper 7475.
[8] World Bank (2020) Climate Change in APEC: Assessing Risks, Preparing Financial Markets, and Mobilizing Institutional Investors. This study estimates long-term economic impacts based on a "weak policy" scenario that assumes continuation of climate policy, excluding the Nationally Determined Contributions (NDCs) of parties to the 2015 Paris Agreement.
[9] World Bank (2014) Philippine Rural Development Project – Project Appraisal Document; United Nations Environment Programme (UNEP) (2014) The Importance of Mangroves to People: A Call to Action.
[10] World Bank. 2015. Climate Change Impacts on Rural Poverty in Low-Elevation Coastal Zones. Policy Research Working Paper 7475.
[11] Macusi ED, Camaso KL, Barboza A and Macusi ES (2021) Perceived Vulnerability and Climate Change Impacts on Small-scale Fisheries in Davao Gulf, Philippines. *Frontiers in Marine Science.*
[12] World Economic Forum (2019) The Global Competitiveness Report 2019
[13] The total estimated land area covered by mangroves is approximately 25,000 hectares spread across the Philippine coastline of 36,289km. Mangroves provide annual benefits greater than US $1 billion in averted property damages from flooding. World Bank, 2017. The Coastal Protection Services of Mangroves in the Philippines. Technical Report for Philippines WAVES.

nutrition, employment and livelihoods. The fisheries sector comprises the following subsectors: (i) aquaculture (including marine, brackish and freshwater farming); (ii) municipal capture fisheries (within 15km of the shoreline) where vessels are limited to 3 tons (gross); and (iii) commercial capture fisheries in the 24 fishing grounds of the Philippines outside municipal waters. As of 2019, the total annual production from capture fisheries and aquaculture stands at 2.05 million and 2.35 million metric tons, producing a total economic value of PHP 163 billion and PHP 117 billion, respectively[14]. Although the share has been shrinking in recent years, the fisheries sector accounts for 1.3 percent of GDP[15] and is ranked 8th globally in terms of volume of production, including the 3rd largest production of seaweed. With a total export value of $1.125 billion and an import value of $749 million, the Philippines is a net exporter of fish with annual trade surplus of over $337 million in 2018[16]. The fisheries sector provides approximately 1.6 million jobs (4 percent of labor force), including for low-income families engaged in subsistence fishing in municipal waters, and contributes to food security through the provision of over 50 percent of animal protein for human consumption. According to the National Fisheries Research and Development Institute (NFRDI) and the Department of Science and Technology (DOST), each Filipino consumes an average of 36.8 kilograms (kg) of fish and fish products per year, nearly twice of the world average of 20.5 kg per capita[17]. However, the fishery sector is among the poorest (poverty incidence was 26.2% in 2018). Approximately 6.2 percent of the poor in the Philippines rely on fisheries for their livelihood[18].

8. Marine fish stocks have been declining, leading to a drop of average 20% in capture fisheries production of all major taxonomic groups (pelagics, demersals, crustaceans and cephalopods) over the last decade, which threatens the long-term livelihood for the sector and the ecosystem services provided by marine resources**.** The first official publication of the National Stock Assessment Program (NSAP) data at the national level was released only in 2017, confirming either overfished or overfishing status of the majority of fish stocks. Most fisheries in the project area can be best characterized as juvenile fisheries, where the size of most landed fish is below their length at maturity, thus not fulfilling their full potential for socioeconomic benefits generation. The Comprehensive National Fisheries Industry Development Plan (CNFIDP), 2016-2020 reports that the Philippine fisheries sector is confronted with nine key and interlinked problems/issues, namely: (i) depleted fishery resources largely brought about by excessive fishing effort and the open access regime in Philippine fisheries; (ii) degraded fishery habitats due to destructive fishing methods, conversion of fishery habitats into economic uses, and negative impacts from land-based activities; (iii) intensified resource use competition and conflicts among fisher groups and other economic sectors; (iv) unrealized full potential of aquaculture and commercial fisheries in view of the still underutilized areas for industry development; (v) uncompetitive products due to inferior quality and safety standards; (vi) postharvest losses in terms of physical, nutritional and value losses; (vii) limited institutional capabilities, from the local up to the national level of governance; (viii) inadequate/inconsistent fisheries policies for promoting a conducive environment for sustainable development; and (ix) weak institutional partnerships among government agencies both at

[14] Philippine Statics Authority (2020) Fisheries Statistics of the Philippines 2017-2019.
[15] BFAR. 2020. Fisheries Statistics. https://www.bfar.da.gov.ph/profile?id=18#post
[16] BFAR. 2021. Fisheries Statistics. https://www.bfar.da.gov.ph/profile?id=4#post; The latest information on seafood trade available on this website is from 2018 as of May 2021
[17] FAO. 2021. The State of World Fisheries and Aquaculture 2020.
[18] This is based on the latest poverty incidence data (2015) for the total population (22%) and for the fisheries sector (34%) as well as the latest labor statistics (2020). World Bank (2020) Transforming Philippine Agriculture: During Covid-19 and Beyond; Philippine Statistics Authority (2021) "Employment Situation in March 2021" https://psa.gov.ph/content/employment-situation-march-2021

the national and local levels, civil society organizations (CSOs), and the private sector[19].

9. The Philippines has a large potential for aquaculture development, but production has fallen by around 10% over the last decade; a majority of aquaculture producers are small family businesses producing unprocessed fish with limited value addition catered to the domestic market. While aquaculture production slightly increased by 0.5% from 2,348,161 t in 2015 to 2,358,333 t in 2019 production has fallen by around 10% over the last decade. The top aquaculture commodities by volume are the following: seaweeds (1,499,961 t), milkfish (409,107 t), and tilapia (279,386 t). The majority of production is produced by clustered small family-run farms targeting local markets. This contrasts with neighboring countries that have continued aquaculture growth, embraced new technology and targeted export markets. There is an estimated 78,969 ha of brackish water ponds that are government-owned, public lands leased to private parties under a long-term Fishpond Lease Agreement (FLA) with a lease duration of 25-year duration (renewable). Many of these ponds have low productivity, are unproductive or abandoned. New investment is required to upgrade the ponds, introduce new technology to increase productivity and reconvert abandoned FLAs back to mangroves to provide more benefits for both the environment and aquaculture production. Furthermore, the country's aquaculture subsector is highly stratified where there are limited positive spillover effects from a handful of capital-intensive vertically integrated producers and foreign invested farming clusters to the majority small-scale family businesses. The latter are typically characterized by limited capacity and access to credit, quality aquacultural inputs (such as disease-free seed) and modern production and postharvest infrastructure[20]. Public support to the small businesses is insufficient mainly due to the following weaknesses: (i) limited production capacity of quality broodstock and seed; (ii) inadequate research and development capacity of public research institutions; and (iii) limited capacity of Local Government Unit (LGU) officials in aquaculture planning (including spatial zoning), environmental monitoring and good aquaculture practices (GAPs) among others[21]. All in all, the challenges described above prevent private investments from scaling up.

10. Global demand for high quality and sustainable seafood continues to grow, but given the exhaustion of fish stocks, the Philippines will need to capture more value from its existing production to benefit. Changing consumer preferences, in favor of easy-to-prepare meals and in response to greater consumer consciousness about nutrition and sustainability, have increased the demand for both greater diversity and quality of processed and unprocessed fish products. Initial investigations show favorable financial returns for value-added fishery products that are not currently being supplied through the domestic market. Value addition for low value species could also contribute to increasing their use for direct human consumption and reducing discards and losses, thereby promoting sustainability of fishery resources[22]**.**

11. About 20-40 percent of total fish caught and farmed is lost annually, with additional loss of quality and nutritional value, due to poor post-harvest practices often associated with inadequate infrastructure for ice supply, safe handling and cold storage and transport of seafood. Export rejection is also an issue, usually caused by: (i) food quality issues including presence of filth and substandard end products; (ii) food safety issues such as the presence of microbial contaminants and chemical contaminants; (iii) non-compliance with

[19] Israel, D. C., M. Lunod-Carinan, and V.B. Paque. 2016. Reducing the Unintended Consequence of Overfishing Due to Open Access: Learning from the Zamboanga Experience. Philippine Institute for Development Studies. Discussion Paper Series, 44; Selgrath, J.C., S.E. Gergel, and A.C.J. Vincent. 2018. Shifting gears: Diversification, intensification, and effort increases in small-scale fisheries (1950-2010). PLoS ONE 13(3): e0190232. https://doi.org/10.1371/journal.pone.0190232

[20] WB staff analysis

[21] Pacific Rim Innovation and Management Exponents Inc. (PRIMEX) (2021) Feasibility Study Report – The Philippine Fisheries and Coastal Resiliency (FISHCORE) Project. March.

[22] Report of the Workshop on Financing Value-added Production and Marketing of Fishery Products in Asia and the Pacific, Kuala Lumpur, Malaysia, 26-30 May 1997, FAO Rome 1999; http://www.fao.org/3/w9250e/w9250e00.htm

regulatory requirements; and (iv) sanitary and phytosanitary measures[23]. There is an urgent need to effectively link production, processing and marketing from the sea to the table while ensuring quality, safety and sustainability of seafood. Barriers to reducing post-harvest losses include inappropriate handling onboard vessels, in fish landings, aquaculture farms, and fish-trading facilities; inappropriate marketing, transport and distribution facilities and infrastructure; non-compliance with regulatory or market requirements (quantity, quality, traceability); and inappropriate handling and preparation techniques among consumers. The Comprehensive Postharvest, Marketing, and Ancillary Industries Plan (CPHMAIP) 2018-2022 fleshed out the postharvest and marketing sectoral strategies outlined in the CNFIDP and aimed to reduce fisheries postharvest losses to 10 percent and increase the competitiveness of Philippine fish and fishery products in domestic and foreign markets. To achieve the twin goals of minimizing postharvest losses and increasing the volume and value of fish and fishery products traded in both the domestic and international markets, CPHMAIP (2018-2022) recommends the following, among others: provision of fish processing and handling infrastructure; competitive and modern support for inputs to fisheries production; harmonization of market information systems; enhancement of access to credit and insurance; and branding and promotion of Philippines' seafood. The project follows these recommendations and collaborate with BFAR and other partners to ensure synergies, complementary and pooling resources together to maximize the benefits of the investment.

12. The fisheries sector is also particularly prone to frequent and devastating impacts of typhoons and other adverse climate conditions. Damage to boats, fishing gear, fishery pens and cages, and landing sites are common during the typhoon and monsoon seasons and may increase as typhoon intensity is projected to increase in the future. The vulnerability of fishers is increased by low levels of resilience planning, infrastructure designed without appropriate climate risk information, lack of protective structures for boats and equipment, and challenges with early warning systems (i.e., low capacity among some coastal communities to address and understand hazard alerts when provided, and lack of awareness of actions to take after receiving hazards alerts). Increasing sea temperature, along with associated acidification and hypoxia, is resulting in the following: migration of some fish species (expected to result in a 24 percent drop in potential catches from marine fisheries by 2050); food web changes, slower growth and decreasing fish size[24]; loss of coral reefs with negative consequences on fish habitats and storm surge protection services valued at US$4 billion per year[25]; and damage to aquaculture. High sea temperatures associated with El Niño in 2016 caused seaweed production to drop by 16 percent due to increased diseases and epiphytes, and a 3.4 percent decrease in fish farm harvests as a result of high mortality and slow growth.

13. All aspects of the fisheries value chains have been significantly affected by the COVID-19 pandemic, with jobs, incomes and food security at risk. Disruption to domestic and international trade, and changes in consumption are affecting the Philippines and will continue to be the case as the crisis persists. Seaweed and

[23] Comprehensive Post-Harvest, Marketing and Ancillary Industries Plan (2018-2022). https://www.bfar.da.gov.ph/files/img/photos/CPHMAIP20182022.pdf

[24] Based on habitat suitability models informed with local catch data, moderate climate change scenario could result in a 15% to 30% reduction in habitat suitability driven mainly by the projected increase in sea surface temperatures (Geronimo 2018). Geronimo, RC (2018). Projected Climate Change Impacts on Philippine Marine Fish Distributions. Department of Agriculture – Bureau of Fisheries and Aquatic Resources. viii+76 pages.
Cheung, W.W.L., Bruggeman, J. & Butenschön, M. (2018). Projected changes in global and national potential marine fisheries catch under climate change scenarios in the twenty-first century. In: Impacts of climate change on fisheries and aquaculture Synthesis of current knowledge, adaptation and mitigation options (eds. Barange, M., Bahri, T., Beveridge, M.C.M., Cochraine, K.L., Funge-Smith, S. & Poulain, F.). Food and Agriculture Organization of the United Nations, Rome, pp. 63–85.

[25] Tamayo, Natasha Charmaine A. & Anticamara, Jonathan A. & Acosta-Michlik, Lilibeth, 2018. "National Estimates of Values of Philippine Reefs' Ecosystem Services," Ecological Economics, Elsevier, vol. 146(C), pages 633-644.

shrimp exports to China have been disrupted since March 2020 because of COVID-19. Changes in consumption as a result of closure of restaurants, cancellation of both public and private events, and declines in domestic and international tourism have resulted in significantly reduced demand for certain fish products, particularly high-end products, such as lobsters, oysters, bluefin tuna, and mahi-mahi[26]. Fisheries and aquaculture production together dropped by 3.2% for the first quarter of 2020 compared to the first quarter in 2019[27]. Health and sanitation standards, which are on average low in the Philippines' fisheries sector, will need to be improved significantly. Increased reliance on online/ digital transactions for food commodities is expected to continue even in the post-COVID 19 quarantine period and will require scale-up of ecommerce solutions[28].

14. Institutionally, the Department of Agriculture through its Bureau of Fisheries and Aquatic Resources (BFAR) is responsible for the development, improvement, management and conservation of the Philippine fisheries and aquatic resources. With respect to municipal waters within 15 km of the shoreline, however, the actual management responsibility lies with local government units (LGUs) with BFAR playing a supporting role providing technical assistance to the LGUs[29]. While many LGUs are proactive in managing their shorelines and near coastal areas, approaches, priorities and capacities of LGU administrations vary across time and space, while the irregular configuration of the Philippine's 33,900 km of coastline and indistinct boundaries between some municipalities has resulted in unclear administrative mandates in some waters. In addition, the Department of Environment and Natural Resources (DENR) has responsibility for establishing, administering and managing 1800 Marine Protected Areas, 28 Marine Sanctuaries and 94 Protected Seascapes. The lack of effective mechanisms for coordination has led to largely unstructured and inefficient coastal zone and fishery resources management.

15. The Philippines' capture fisheries policy framework has progressively evolved from production maximization to conservation and sustainable use of resources; most recently, the establishment of 12 Fishery Management Areas (FMAs) in 2019 represented a fundamental transition from the open access nature of sectoral governance to ecosystem-based fisheries management (EAFM), whose operationalization is a key short-term priority. Overall, aside from some fishing effort restriction measures recently introduced, such as fishing licenses and seasonal closures for commercial fisheries, the on-the-ground sectoral governance essentially remains open access with no output control (e.g., catch quota) in place. Meanwhile, the policy framework has recently seen improvements, including the 2015 amendments to the 1998 Philippines Fisheries Code tightening monitoring, control and surveillance (MCS). Furthermore, in 2019, the Fisheries Administrative Order (FAO) 263 established 12 FMAs delineating Philippine waters based on approximation of fish stocks and fisheries distribution and management. Underpinning the FMA concept is the recognition that sustainable fisheries management cannot be achieved at the level of the individual LGUs, requiring coordination across greater geographical areas. In this regard, the new FMA system has been conceptualized as a vehicle to introduce EAFM underpinned by a cross-sectoral multi-stakeholder planning and decision-making structure informed by best-available science – requiring BFAR to align its modus operandi with EAFM and integrated coastal management and whereby overcoming challenges associated siloed and fragmented sectoral governance[30]. As of July 2021, the FMAs are in varying degrees of progress in

[26] OECD. 2020. Fisheries, aquaculture and COVID-19: Issues and Policy Responses.
[27] Philippine Statistics Authority, 2020. Fisheries Situation Report January to Mar 2020.
[28] From "We Recover as One" strategy of the Philippine government for post COVID-19 recovery.
[29] This is because LGUs have territorial jurisdiction over their municipal waters in accordance with the Fisheries Code and the Local Government Code.
[30] With respect to harvest control with FMAs, the following is envisaged: BFAR, LGUs as well as other stakeholders such as DENR and Fisheries and Aquatic Resource Management Councils (FARMCS) will continue to exercise their jurisdiction and be

terms of setting up their respective management boards and scientific advisory groups. EAFM planning is in its early stages with the COVID-19 precautionary measures postponing the necessary large-scale consultations for this process. Nonetheless, early operationalization of the 12 FMAs remains a key short-term priority in the ongoing sectoral reform process.

16. Community-Based Fishery Management has been piloted in some areas and shown successful results at awareness building, with notable pockets of success in implementation[31]. Fisheries Administrative Order (FAO) No. 196 provides guidelines to establish Fisheries and Aquatic Resources Management Councils (FARMCs) and help institutionalize the major role of fisherfolk and other resource users in the planning and formulation of policies and programs for the management, conservation, protection and sustainable development of fisheries and aquatic resources. Philippines has experienced a transition in the past decade to involve the central government, the municipalities, and the fishers (through the FARMCs) to jointly manage the fisheries sector. In 2020, there were nearly 350,000 members registered for FARMC in both FMAs.

17. Approved in May 2020, COVID response in the fisheries sector has been guided by the Development Framework for Food Security – anchored upon the goals of a "food secure and resilient Philippines with prosperous farmers and fishers." Socio-economic recovery and resiliency are at the heart of this Framework's strategy to "survive, reboot, and regrow". More specifically, the strategy calls for emphasis to be given to farm consolidation, modernization, industrialization, export promotion, and infrastructure development', and for this to be promoted through farmers and fishers clustering and partnering with big businesses and cooperatives. This strategy, which builds on a solid platform of international experience, is now being actively pursued by the Department of Agriculture and is central to the design of the proposed project.

18. Marine plastic pollution is an emerging issue in the Philippines where the fisheries sector is recognized to have dual characteristics – a major plastic pollution source as well as a sector severely impacted by mounting volumes of marine litter. It is estimated that approximately 20 percent of the marine litter in the world oceans originate from the sea[32]. Evidence from around the world further suggests that a subset of seaborne marine litter, such as fishing nets and gears, causes disproportionate impacts on fisheries as well as marine ecosystems though ghost fishing and entangling sea creatures, including endangered species such as sea turtles. Increasing volumes of marine litter have also been causing adverse socioeconomic impacts on Philippine coastal communities, particularly affecting coastal tourism. In the face of the challenge, GOP is designing a legislative measure to limit and gradually phase out single-use plastics, while also preparing the National Plan of Action on Marine Litter. In the ongoing policy making processes, the importance of interventions in the fisheries sector with unique characteristics is duly recognized. To support the achievement of the policy goals under formulation, marine plastics pollution reduction will be mainstreamed in the implementation of FISHCORE.

19. Focusing on parts of FMAs 6 and FMA 9, FISHCORE will assist the Philippines' fisheries sector to accelerate its sustainable sectoral transition to fulfill its full potential in supporting food security and poverty alleviation, while enhancing its resilience to adverse climate impacts and other disturbances, including those related to COVID19. At the core of the FISHCORE approach are (i) establishment of science-based and ecologically sound stock management systems; and, bearing in mind biological limitations to capture fisheries production, (ii) expansion of sustainable aquaculture production and enhancement of value

responsible for their mandates, while adhering to the harvest reference points (RPs) established and harvest control rules (HCRs) to be adopted for the FMA and implementing harvest control measures, as may be applicable.

[31] FAO. 2021. Fishery and Aquaculture Country Profiles. http://www.fao.org/fishery/facp/PHL/en

[32] Lebreton et al. (2017) River plastic emissions to the world's oceans. Nature communications.

retention and addition across the sector. The FMAs will provide a vehicle for integrating EAFM into LGU planning processes where municipal waters and key coastal habitats will be managed in an integrated manner in coordination with stakeholders representing divergent interests. Development of fisheries and aquaculture enterprises will require organically linking finance, production, marketing, and clustering to overcome the scale and technical capacity constraints in existing micro- and small-scale enterprises, thus enabling them to seize market opportunities. In view of the acute climate vulnerability of the Philippines, climate considerations would be mainstreamed across the project activities. The project interventions would also provide a critical contribution to COVID-19 response, through both safeguarding an important component of food security and enhancing the livelihoods of poor households dependent on the sector heavily affected by the pandemic.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

20. The development objective of the project is to improve management of targeted fisheries resources and enhance the value of fisheries production to coastal communities in selected Fishery Management Areas (FMAs)[33].

Key Results

21. The two elements for the PDO – improved resource management and enhanced socio-economic value of the sector, are interdependent. The former underpins the sustainability of the latter, but a healthy and economic variable commercial sector is also required to support resource management investments. Both elements integrate and support coastal resilience to climate and other economic and environmental shocks. Healthy fish stocks and marine habitats are the foremost defense against the direct impacts of climate change on marine resources, whilst investments in fisheries and aquaculture value chains will both incorporate climate adaptation measures, and enhance the general economic resilience of a highly vulnerable population through expanding and diversifying the livelihoods of coastal communities. The coastal resilience supported by the project therefore encompasses a broad concept including socio-economic and ecological resilience, rather than focusing only on physcial coastal protection.

22. The PDO level indicators are:

- Fisheries management plans implemented (corporate results indicator; number);
- Share of major fish stocks covered in Fishery Management Plans (FMP) moving towards target reference points (Percentage);
- Reduction in postharvest losses from the targeted species in the selected LGUs (Percentage); and
- Increase in value addition in targeted value chains (Percentage).

D. Project Description

23. The project area would include parts of FMAs 6[34] and FMA 9 out of the twelve FMAs established. These 2 FMAs were selected through a multi-stakeholder 2-stage selection process where the selection criteria included the following: (i) level of vulnerability to natural and man-made threats; (ii) status of fisheries

[33] "Fisheries production" is this context refers to both capture fisheries and aquaculture.
[34] All activities supported by the project within FMA 6 will be limited to shallow coastal water areas, only species and habitats within 50 nautical miles from the shore will be targeted. In addition, all physical project interventions will be limited to municipal water and on-shore coastal areas in both FMAs.

resources; (iii) access to sustainable and resilient investment opportunities; (iv) contribution of fisheries production to national economy; and (v) institutional capacity. The project will target capture fisheries of most importance to municipal fishers, particularly demersal and small pelagic species, and implementation of management measures that will be focused on Municipal Waters (<15 km from the shoreline). Within FMA 6, all project interventions will be limited to shallow waters of up to a few hundred meters' depth, where these species are found. Any isolated sea mounts in deep ocean areas are excluded from the project area. These areas extend marginally beyond the Municipal Waters, typically to around 20-30 km from shore. The maximum limit of the project area within FMA 6 will be 50 nautical miles from shore. Combined, the 2 FMAs cover 11 regions and 24 provinces comprising a total area of approximately 32 million ha of coastal and marine waters. Specifically, FMA 6 comprises major fishing grounds around the northwest coast of Luzon, including Pagudpud Bay, Lingayen Gulf, Subic Bay, Manila Bay and Lubang Island. FMA 9 encompasses fishing grounds in archipelagic waters between the Visayas and Mindanao, in particular the Bohol Sea, Panguil Bay, Iligan Bay, Gingoog Bay, Butuan Bay and Sogod Bay.

24. A total capture fisheries production from FMA 6 and 9 was 294,734 tons in 2019, accounting for nearly 20% of the total fishery production of the Philippines. Small pelagic species dominate both FMA 6 and 9. Roundscad and Bali Sardinella take over 50% in FMA 6, while Bali Sardinella and big-eyed scad share over 40% of total catch in FMA 9, followed by Frigate Tuna, Fimbriated Sardines, and Roundscad (around 9% each). There are signs showing overfished and/or overfishing status of key fisheries in both FMAs. All species assessed to date (14 for FMA 6 and 7 for FMA 9) appear overexploited based on national-level stock assessments[35]. There is also evidence showing shifts in species composition toward lower tropic levels. Demersal fisheries for FMA 6 and reef fisheries for FMA 9 appear particularly overexploited. Growth and recruitment overfishing are also evident.

25. In FMA 6, the total aquaculture production was over 400,000 tons in 2019, much larger than capture fisheries. Finfish, mostly milkfish and tilapia, form the bulk (83%) of aquaculture production in FMA 6, accounting for 48% and 53% of national production of these species respectively. On the other hand, estimated total aquaculture production was less than 170,000 tons in 2019 in FMA 9 where the most important aquaculture products were seaweed (44%), crustaceans (30%) and finfish (25%). It's worth noting that the mangrove crab production from these two FMAs (over 13,000 tons) accounts for over 60% of the national production.

26. These two FMAs generated direct employment for over 354,000 persons from capture fishing, aquaculture, fish processing, vending, gleaning and other auxiliary activities along the value chains[36]. The project area comprises some Regions with the highest poverty incidence, such as Region 8 at 30.5% and Region 9 at 35.7% and cover 54% of the total number of poor families in the country based on 2018 data.

27. The project will be supported by an IBRD loan of US$200 million with an implementation period of 7 years. Components 1 and 2 aim to achieve improved management of fishery and coastal resources, and commercial development through infrastructure investments and fisheries enterprises respectively. Although the two components are interdependent, their implementation must be closely coordinated and sequenced to avoid potential conflicts. Without the foundation of sustainable fisheries management, investment in post-harvest value chain will potentially threaten, rather than enhance long-term fisheries production. Conversely, introduction of new harvest control measures may, in the short term, adversely impact the fishers' livelihoods

[35] Froese's Sustainability Indicators and length-based mortality models were used to assess the overfishing status. More details on the models are presented in separate FMAs introduction.
[36] Philippine Statistics Authority. 2021.

that they aim to support in the longer term. To manage the latter risk, adverse impacts of resource management reforms will be assessed and minimized, and residual impacts will be addressed through a range of livelihoods and income support activities. Capacity and implementation support for MCS activities will focus only on existing serious IUU activities, until governance and planning frameworks are established. Readiness for Component 2 investments will be assessed on a "traffic light system", linked to the strengthening of controls e.g. licensing systems, vessel tracking, IUU reduction, product traceability and certification schemes. No high-risk investments will be financed that would directly increase harvesting capacity of capture fisheries; i.e. there will be no investments in boats or fishing gears, other than the possibility of tightly control replacement schemes to eliminate particularly damaging gears. Remaining investments will be categorized as:

a) No regrets (e.g. habitat rehabilitation, minimal-impact mariculture activities, regulatory facilities), which may be implemented from the outset of the project.

b) Low risk (e.g. other aquaculture, climate-proofing existing fisheries facilities, and pilots for other types of investments), which would be conditioned on preparation of aquaculture development and management plans (for aquaculture investments), and active LGU engagement in project MCS, licensing, planning and monitoring systems.

c) Moderate risk (i.e. investments that would enhance commercial landing, processing and marketing capacity for capture fisheries), which would be conditioned on preparation of Fisheries Management Plans, and active LGU implementation of fisheries and marine habitat management plans, including mainstreaming into local legislation, adoption of licensing systems, and increased enforcement activity.

Component 1: Fisheries and Coastal Resilient Resource Planning & Management (FishCRRM) ($55.8 million)

28. The objective of Component 1 is to establish the necessary planning framework and institutional arrangements, strengthen capacity and implement management measures to realize an ecosystem approach to fisheries management for parts of FMA 6 and for FMA 9. Specifically, it will support the development of overarching FMA Framework Plans (FPs)[37], the formulation and implementation of targeted fisheries management plans (FMPs), aquaculture development and management plans (ADMPs), and marine habitat management and restoration plans (MHMRPs) with a view to maximizing ecological and socio-economic benefits and building resilience in coastal communities. The project will further support the implementation of those plans within Municipal Waters.

29. BFAR will take the lead in the development of the FMA framework, ensuring coordination of management policies and regulations, oversight and monitoring, and coordination of management measures implementation. The project will assist with the formalization of these arrangements and upgrading the management system by providing support to research, extension services, capacity building, awareness raising and communication campaigns with close collaboration with the LGUs. The main outcome of this component will be a functional FMA governance structure and management systems that are science-based, results-oriented, inclusive, adaptive, and effective to manage the coastal fisheries, aquaculture, and coastal marine habitats.

[37] For FMA 6, this will only cover the nearshore waters included within the project area.

Subcomponent 1.1: Ecosystem Approach to Fisheries Management Planning and Institutions (US$21.1 million)

30. This subcomponent will involve: (i) development of institutional mechanisms for FMA governance and related capacity building; (ii) formulation of FMA framework plans (FPs); (iii) formulation, adoption and implementation of marine resources management plans for each FMA, namely targeted fisheries management plans (FMPs) and related MCS strategies, and marine habitat management and restoration plans (MHMRPs), including preparation of key analytical work and extensive consultation processes that underpin them; (iv) establishment of a monitoring and evaluation (M&E) system and strengthening existing fisheries information management systems to support adaptive FMA management; (v) research and extension services to provide needed scientific information, data, analysis, and demonstrations for evidence-based fisheries management; and (vi) formulation and implementation of a communication and education program.

31. Institutional mechanisms for FMA governance. Established in early 2021 in both FMAs, the Management Board (MB) is a multi-stakeholder governance body tasked to fulfill the mandate of FAO 263 supported by the Scientific Advisory Group (SAG)[38]. The MB will serve as the highest decision-making mechanism at the FMA level, whose short-term priorities include developing operational rules and procedures as well as establishing timelines for the adoption of FMA-level plans and strategies. The project will support the operationalization of the Management Board (MB) in each FMA, including provision of technical assistance and capacity building to MB and SAG members, and to help strengthen the science-to-policy linkage through the SAG and streamlining the decision-making procedures.

32. Development and establishment of Baselines. FISHCORE will support the design, piloting and establishment of environmental and socio-economic surveys, systems and programmes for monitoring fisheries and marine habitats in each FMA. This is to help establish baselines for the project monitoring and evaluation. Existing surveys, systems and programmes already implemented by BFAR, DENR, LGUs and other key management stakeholders will be improved or refined. It will help enhance BFAR's existing frame and catch assessment surveys to ensure that municipal fisheries are adequately represented in the catch and effort statistics for each FMA. Capacity will be strengthened to ensure monitoring remains effective and sustainable beyond the life of the project. Survey equipment will be procured if needed.

33. FMA Framework Plans. FISHCORE will support FP formulation for each FMA[39] by 2022 through technical assistance, stakeholder workshops, and necessary equipment, including the establishment of an on-line platform to solicit inputs from a wide range of stakeholders. The FP is the overarching institutional and management framework for the FMA. It will establish in broad strokes the priorities and strategic directions for the management of marine resources and development of fisheries and aquaculture industries. It will

[38] In FMA 6, the Management Board (MB) was established in December 2020 via an online meeting attended by 112 participants. The eleven members of the MB represent BFAR, the Local Chief Executive (LCE) representing the LGUs; the aquaculture sector; commercial fishing sector; municipal fishing sector; manufacturer/processor/trade sector; academia; NGOs; Indigenous Persons (IP); Integrated Fisheries and Aquatic Resources Management Council (IFARMC); and Protected Area Management Board (PAMB). The meeting was also attended by the FMA 6 secretariat and staff from the BFAR regional offices. Members of the MB were formally approved in a resolution (RESOLUTION No. 1 SERIES OF 2020). Also during December 2020, the members (9) of the MB for FMA 9 were formally approved in Resolution 2019-003 representing the same stakeholders as per FMA 6 except IFARMC and PAMB. Additional resolutions were made to expand membership of the MB to include BFAR Regional Directors and National Government Agencies (NGAs) – specifically the Philippines Coastguard (PCG); Maritime Industry Authority (MIA); Philippines National Police – Maritime Group (PNP-MG); Department of Environment and Natural Resources (DENR); DILG; Department of Social Welfare and Development (DSWD); Department of Tourism (DoT); and Commission on Higher Education (CHED).

[39] For FMA 6, the project will only support the FP for the nearshore waters within 50 nautical miles.

formalise the administrative and financing arrangements for the implementation of FMA management activities, including the respective roles and responsibilities of MB members, other key management stakeholders such as LGUs, and additional stakeholders, and a schedule for development and implementation of adopted plans. It will also describe the activities necessary to operationalize the FMA including the preparation and necessary revision or issuance of relevant policy and legal instruments such as Declarations, MOUs, MOAs, and needed organizational reform or reorganization to ensure the FMPs will have the needed legal framework and institutional structure for their effective implementation.

34. Fisheries Management Plans and Marine Habitat Management & Restoration Plans. FISHCORE will support at least one FMP formulation and implementation for priority fish stocks[40] and one MHMRP in each FMA. The project will support the planning process, including recruiting consultants to design and conduct necessary studies, providing equipment for the data collection and analysis, strengthening stakeholder capacity, supporting consultation processes, and facilitating the approval, adoption and oversight of the FMPs by the respective MBs. FMPs are comprehensive plans for the management of major fish species or a multispecies group, to ensure their conservation and sustainable harvesting, consistent with the principles of EAFM. They define the fishery, key issues, goals and operational objectives, the management standards (indicators and reference points[41] to monitor the performance and guide the plan), the management strategy (suite of management measures) and harvest control rules[42], licensing/boat registration, vessel monitoring, catch documentation, restriction of vessels from other FMAs, incentive scheme, and potential pilot of rights-based fishery management[43] for some communities. It also describes how the fishery will be monitored, how management measures will be enforced, how the plan will be financed, and evaluated, and who will be responsible for the various implementation activities. FMPs will also include the design of MCS strategies including analysis of financial and institutional capacity, and options for improving long-term sustainability through increased fisheries revenue generation. A sample FMP structure is presented in Annex 2. MHMRPs cover coastal habitats across the entire FMA, and aim to identify and ensure the conservation and connectivity of key habitats (in particular, coral reefs, seagrass beds and mangroves) to support the lifecycles of fish and other marine resources. They may establish a range of management measures across the FMA's coastal zone, including fish sanctuaries and/or specific fishing restrictions within critical habitats; coastal zoning regulations to manage pollution and conversion of littoral habitats; establishing co-management arrangement[44]; investments in physical clean-ups, rehabilitation and/or restocking of degraded habitats.

[40] Here the stock refers to "species baskets," comprising several species with similar biological and fishery features grouped together. Often, the species in each basket belong to the same family and are caught by the same set of fishing gears. Selection criteria include the stock importance to food security, status of stocks, fisher's preference, ecosystem function, and climate information.

[41] RP means benchmark values often based on indicators such as fishery stock size or the level of fishing that serves as standard to compare estimates of a fishery stock size and fishing mortality over time depending on the biological characteristics of the species. Reference points can mark (a) a limit or a level that should be avoided; (b) a target which should be achieved and maintained; or (c) a trigger that signals the need to take prescribed actions to prevent stock collapse.

[42] HCRs are actions or sets of actions to be taken to achieve a medium or long term target reference point while avoiding reaching or breaching a limit reference point. It is a pre-agreed rule or action(s) according to specific FMA that sets, describes and FAQ on FMA 6 BFAR Toolkit on Fisheries Management Areas adjust harvest rules and regulations based on the status of the stocks (Reference Points) and/or some indicator(s) or performance statistics (Sec. 3.e)

[43] Based on WWF, rights-based fishery management program convey and manage exclusive entitlements that allow an entity – person, company, fishing vessel, community or village – to fish in a particular place at a particular time.

[44] This could involve establishing territorial use of rights for fisheries (TURFs) in exchange for development and agreement on community sustainable management measures.

35. Planning will be informed by situation analyses[45], including stock assessments, ecological and socioeconomic baseline surveys, mapping of critical habitats (spawning aggregations on reefs, migratory paths on seagrass beds), and analysis of coastal resiliency needs to identify climate vulnerability issues related to fisheries management and coastal planning. An environmental and social impact assessment (ESIA) process will be included, particularly focused on assessment of potential livelihood impacts of different resource management options. This will feed into the planning process in an iterative fashion to ensure that mandatory restrictions on customary resource access and livelihoods are minimized[46] and specific options are identified for mitigation of residual impacts. Stakeholder participation in the planning processes will be supported by extensive consultation, including the formation of contact groups and networks.

36. Fisheries Management Monitoring & Evaluation System. Implementation of FMA management plans will be reviewed annually, and a formal evaluation against objectives and indicators established in the FMA plans will be conducted every 3 years, to support an adaptive management process including revision of plans, as needed. FISHCORE will support the design and establishment of a modern Information Management System. The system will be capable of providing secure storage and the ability to process data and information used to formulate, and required to implement the FMA Framework Plans, FMPs, Aquaculture Development plans, and MHMRPs. The system will effectively integrate existing databases (including NFRDI databases, catch documentation, MCS data, vessel registration and license data) and all the relevant baselines, surveys and studies. The project will support an assessment of the current information system, identify weaknesses and support the upgrading of the systematic data collection and analysis at different stages, including recommendations for BFAR, LGUs and other required agencies to provide budget and personnel for this purpose. The project will support trainings needed to strengthen the capacity. GIS applications will be developed to perform spatial analyses of data. Funds will be provided to purchase system hardware and software, provide relevant training and capacity strengthening for users and developers, and to develop systems for remote access to the system via mobile applications.

37. Extension services and research. FISHCORE will support research, development and extension services (RDE) through technical support and funding for RDE agencies (such as NFRDI and local universities) on (i) development of a unified and synchronized climate-smart fisheries RDE agenda in the FMAs; (ii) improved data collection and trainings for national stock assessment; (iii) development of alternative fishing vessels and fishing technology with better safety at sea and more selective fishing gears used, fish handling and processing technology to maintain value and reduce post-harvest loss; (iv) location-specific and climate-resilient fisheries technologies suitable for FMA 6 and 9 with clear traceability information along the value chain; (v) development and implementation of provincial fisheries and vocational training programs through partnerships among BFAR, LGUs, TESDA, other NGAs, SUCs, and the private sector.

38. Communication and education. A communication and education strategy will be developed and

[45] The situation analysis, which typically forms the starting point for the formulation of fisheries management plans, will be informed by baseline surveys and studies financed by the Project. These surveys and studies will provide information on fishery characteristics, operations and trends; resource status and trends; biological data; socio-economics of the fishery; ecosystem and habitats, protected or endangered species, previous and existing management efforts and key problems or issues to be addressed.

[46] There will be no mandatory retirement of fishers. Long-term fishing effort management will be implemented through enhancing natural attrition – i.e. providing assistance to fishers wanting to exit the industry voluntary, whilst controlling new entrants. Primary management measures are expected to focus on [in the following order] (1) strengthened enforcement against outright illegal and destructive activities (which enjoys broad support amongst stakeholders), e.g. dynamite fishing and incursion of commercial vessels into municipal waters, (2) gear restrictions, supported by gear replacement / trade-in schemes where appropriate, (3) season- and habitat-specific regulation of access.

implemented to build understanding and support amongst key stakeholders for the objectives of the FMA plans, new fishing controls, sanctions for non-compliance, means of accessing livelihood support, the GRM, and project results. This will involve annual communication and education campaigns and knowledge-sharing platforms including different local languages; including a data-driven project website and social media engagement.

Subcomponent 1.2: Aquaculture Development and Management (US$14.5 million)

39. This subcomponent will involve: (i) improving FMA-level aquaculture governance; (ii) formulation of an ecosystem-based aquaculture development and management plan (ADMP) for each FMA, covering all key species and culture systems; (iii) enhancement of regulatory and support systems for quality and resilience of aquaculture production; and (iv) an aquaculture information management system.

40. FMA-level aquaculture governance. An aquaculture registry system will be established, and a review of institutional responsibilities and coordination, policies, legislation and licensing procedures will be conducted to inform action to strengthen the regulation of the sector and create the enabling environment for private sector investment, including streamlining the aquaculture license/permit issuing process. Technical assistance will support the review and consultation, and the drafting and implementation of updated policies, as necessary.

41. Aquaculture Development & Management Plans. The project will finance technical assistance, workshops and training to support the formulation of an ecosystem-based ADMP for each FMA, covering: (i) zonation for aquaculture development according to different culture methods[47]; (ii) design of Aqua-Industrial Business Corridors (ABCs), including identification of development clusters and of critical facilities and services to support them; (iii) improvement of biosecurity and early warning[48] systems to alert fish farmers and recommend control measures to respond to extreme events and disease outbreaks in a timely manner. This process will be supported by analytical work and training on marine spatial planning and environmental carrying capacity assessment, and participatory assessment of constraints on aquaculture-related livelihood and enterprise development, for which the project will finance technical assistance, equipment and services (including provision of remote sensing imagery, aerial and underwater surveys, and GIS analysis).

42. Aquaculture quality and resilience enhancement. The project will support: (i) climate, disaster and disease risk assessment and identification of adaptation and risk management measures for different aquaculture systems in different locations ; (ii) testing and demonstration of experimental climate-smart[49] and efficient aquaculture technologies and livelihoods (for potential scale-up under Component 2); (iii) development of guidance materials on good aquaculture practices (GAPs) to help improve productivity,

[47] To minimize environmental risk and maximize economic returns, the project will use GIS and remote sensing to map existing Aquaculture Production Zones (APZs) for major aquaculture commodities (such as milkfish, tilapia, shellfish, seaweed, shrimp) infrastructure and facilities (such as farms, hatcheries, nurseries, community fish landing centers, ice plants, cold stores, and postharvest support facilities), services (such as fish health laboratories, IBCs, satellite hatcheries, seaweed propagation laboratories) at both the ABC and FMA levels.

[48] Examples could be (i) app based early warning system for approaching tropical cyclones to allow farmers to harvest fish before landfall; (ii) monitoring and early warning of disease outbreaks together with strong border control and transparent boundary movement of aquatic animals; (iii) monitoring and early warning for harmful algal blooms for shellfish toxicity; (iv) Early warning system for extreme events to notify fish farmers quickly and widely.

[49] Examples include (i) submerged fish cages for small-scale operators in Sual, Pangasinan; (ii) submersible cages developed post-Yolanda supported by the Japan International Cooperation Agency (JICA) in Basey, Samar; (iii) offshore mariculture in climate-resilient cages with solar power; (iv) deeper ponds to mitigate high temperature fluctuations and water quality fluctuations (eg pH); (v) higher pond dikes to mitigate against flooding and sea level rise.

quality and market competitiveness, and associated training workshops for BFAR, LGUs, fisherfolk/fish farmer associations and cooperatives; and (iv) design and implementation of certification systems to recognize both hatcheries and grow-out farms for compliance with good practices and quality of output; (v) In-depth surveys on selected representative farms on the input, output and economic performance and extrapolate these findings to the FMA level and disseminate as IEC material of production costs and sales return for easy farmer comprehension

43. Aquaculture management information system. The project will finance development of a modern information management system for aquaculture, which will link vital information (monitoring of licenses, production data, early warning systems for climate risks and disease outbreaks, environmental monitoring information) to the centralized hub in the FMA and other databases for capture fisheries. It will also support the information for development and implementation of a communication strategy specifically on aquaculture technologies and updates to the management framework.

Subcomponent 1.3: Strengthening Management of Coastal Resources in Municipal Waters (US$20.2 million)

44. This subcomponent will support LGUs to translate the strengthened governance mechanisms, plans and management measures developed under the preceding subcomponents into concrete actions at the local level, focusing on those LGUs most critical to the objectives of the plans. It will involve: (i) integration of new management plans into the LGU-level policy and legal frameworks; (ii) implementation of FMPs; (iii) implementation of MHMRPs; and (iv) LGU contributions to FMA-wide monitoring and information systems.

45. Integrating FMA-level management plans into LGU-level policy and legal framework[50]. While the exact scope of project interventions will likely vary depending on the unique circumstances of each LGU, translating FMA management objectives into the LGU context will require: (i) amendments of LGU ordinances in accordance with the FPs as well as the subordinate plans (i.e., FMPs, MHMRPs, and ADPM); and (ii) development and/or strengthening of LGU-level coastal resources management (CRM) and integrated coastal management (ICM) plans[51]. The project will support consultation and provide necessary legal and technical assistance.

46. Implementation of FMPs. The project will finance technical assistance, equipment and initial operating costs to support implementation of FMPs by priority LGUs, including (i) communication and education strategy development and implementation; (ii) design and implementation of MCS programs and law enforcement activities (including acquisition of patrol vessels[52] and on-the-job training with BFAR teams[53]); (iii) piloting of vessel tracking system for municipal boats[54] and an electronic catch documentation scheme (eCDS); (iv) capacity building for fishers' organizations to facilitate their effective participation in municipal

[50] National-level MPAs (i.e., those belonging to the National Integrated Protected Areas System (NIPAS)) will not directly supported by FISHCORE. Instead, the project aims to complement NIPAS by building LGUs' capacity.
[51] The CRM plans would focus on habitat and species-specific regulations, whereas the ICM plans would revolve around zoning and management of land-based activities that impact coastal habitats (e.g., tourism and residential development, agricultural run-off, and wastewater).
52 The project will only support fisheries related patrol exercises. For FMA 6, the range of patrol activities should be within 50km.
[53] All the MCS activities will be limited to areas within 50 km from the shore to avoid any potential disputed water conflict.
[54] This would be voluntary – i.e. the aim would be to encourage boat owners to install the system on the basis of associated benefits, e.g. spatial information systems to provide safety, fishing conditions and market information services; and/or support for packages of boat improvements that include tracking unit. Once a threshold of uptake is reached, other incentives could be applied, such as access to improved landing facilities, credit or other support systems, and/or access to product certification schemes that provide higher prices for catch of verified origin.

fisheries management. Before the completion and adoption of FMPs, key LGUs will be supported on a series of no-regret activities particularly to strengthen MCS strategy development and implementation, focusing on participatory approaches to address ongoing illegal fishing activities (especially incursions of commercial vessels to the municipal water, blast and cyanide fishing).

47. Implementation of MHMRPs. The project will finance technical assistance, equipment, potentially small works, and initial operating costs to support implementation of MHMRPs as part of the CRM plans by priority LGUs. While fish sanctuaries may be established in some offshore locations (e.g. coral reefs), habitat-specific use regulations and regulatory approaches will help strengthen coastal zoning and the management of on-shore activities that impact coastal habitats (e.g. tourism and residential development, agricultural run-off, and wastewater). For littoral and near-shore habitats, the focus would be on establishing community-led management regimes in which exclusive resource-use rights would be established in return for instituting sustainable management systems. These may be complemented by "pay for work" programs to support beach clean-up, mangrove[55] /coral reef rehabilitation, and/or restocking, particularly for habitats of critical importance to wider ecosystem function, and where short-term income support would be an effective means of mitigating livelihood impacts. Research activities would particularly focus on bioremediation, i.e. the potential for both rehabilitation of key habitats and aquaculture of bivalves and seaweeds to help manage environmental and climate stressors on coastal ecosystems. FISHCORE will provide LGUs with capacity building, technical assistance, equipment and small-scale infrastructure, while also conducting communication and awareness campaigns.

48. LGU contribution to FMA-wide monitoring and information systems. LGUs will be provided training and initial logistical support to regularly collect and share information and data on fisheries, aquaculture and habitat management activities, contributing to monitoring and information systems and M&E described above.

Component 2: Modern and Resilient Livelihood Investments (MARLIN) (US$129 million).

49. The objective of this component is to enhance the economic value of fisheries & aquaculture to fishing communities through strategic and climate resilient investments to reduce post-harvest losses, expand aquaculture production, and add value to fisheries production. It aims to enhance the income-earning opportunities of capture fishers and fisher organizations, as well as expanding the overall value of the sector within the target FMAs. The component will support investments in critical value chain infrastructure and improved production, handling and processing technologies, alongside related technical assistance for technical extension and business advisory services, to catalyse wider private sector and LGU investment in the sector.

50. The focal investment under Component 2 will be a set of targeted public infrastructure and private enterprise subprojects, aligned with the Department of Agriculture's OneDA Approach (recently formalized through Administrative Order 25) to achieving economies of scale and industrialization in the agriculture and fishery sectors through a clustering and consolidation framework coupled with strengthening of extension services. Livelihood and enterprise subprojects will be available to duly registered entities, including fisher associations, cooperatives and/or small-medium enterprises, to be implemented by beneficiaries through matching grants. Extension and beneficiary support services will be provided through BFAR and in coordination with the Province-led Agriculture and Fisheries Extension Systems (PAFESs) being established

[55] Mangrove rehabilitation is expected to focus on abandoned and/or underutilized FLAs (i.e., shrimp pond concessions within public lands).

across the country, augmented through specialist agencies[56] and contracted service providers. Infrastructure subprojects will be implemented directly by BFAR or jointly with LGUs, depending on the nature of the facilities. All subprojects clustered around Aqua-Industrial Business Corridors (ABCs) will be required to demonstrate a clear demand from the private sector, provide a viable business or operations & maintenance plan, and be subject to environmental and social screening and measures as laid out in the ESMF. The basic principle is no high-risk investments will be included and all investment will be subject to clear screening and sequencing so no investments will take place to further exaggerate overfishing situation.

51. A key requirement for all subprojects is that they should be catalytic. Public investment should crowd in, not out, private investment, through addressing barriers associated with technical knowledge, complementarity and/or economies of scale, and based on the identification of specific needs not currently provided by the private sector. Livelihood subprojects will support fisheries governance reforms introduced under Component 1 through provision of alternate incomes for affected fishers, as well as diversification and resilience of livelihoods more broadly. Enterprise subprojects will support new technologies and innovations, and address critical gaps in supply chain services, and matching grants will be minimal in the sense of only covering the catalytic part of an investment. Infrastructure subprojects will support both critical public infrastructure and provision of backbone commercial services to ABCs, where necessary.

Subcomponent 2.1: Fishers' Livelihood Diversification & Development (US$17.9 million)

52. Alternative and additional livelihoods for fishers will be supported through (i) formation and training of new, start-up and expanding micro-enterprises amongst fisher groups and associations, (ii) (80:20) matching grants for incremental costs to beneficiary groups of fishers working in municipal waters for new and expanded climate-resilient enterprises, focusing on small-scale, low-impact mariculture activities that promote healthy coastal habitats, and (iii) a vocational training program for those interested in leaving or reducing involvement in the fisheries sector. These activities will increase the income-earning options and resilience of poor and vulnerable populations, reduce pressure on fisheries resources, as well as forming a key component of the mitigation for any livelihood impacts of compulsory harvest control measures introduced under component 1.

53. Enterprise formation. Technical assistance will be provided to new and existing fisher groups and associations to build capacity for enterprise formation and business development. This will support selection criteria development and business plan development, which could also be served as incentives for compliance of laws and regulations. Successful grant recipients will also receive tailored technical and managerial extension support. BFAR's capacity to provide these services will be augmented by the Aqua Business Technology Incubators (ABTIs), and through engaging service providers (i.e. academic institutions and technical NGOs).

54. Subprojects. Alternative livelihood grants will support financially viable, sustainable and climate resilient activities, potentially including small-scale seaweed and shellfish mariculture, coral gardening and sustainable mangrove crab production linked to mangrove rehabilitation and management (aqua-silviculture), as well as improved handling and simple processing activities for existing or new products. Additional fisheries-related activities, such as marine tourism (e.g. boat/dive tours, sport fishing, water transportation), and scale up of experimental nature-based livelihoods trialed under Component 1, may also be considered. Investments will

[56] Likely to include the Technical Education and Skills Development Authority (TESDA), Southeast Asian Fisheries Development Center Aquaculture Department (SEAFDEC/AQD), DA Agricultural Training Institute (ATI); and Department of Science and Technology (DOST).

be focused on those LGUs most active in fisheries management and impacted by harvest control rules. The scope and targeting of alternative livelihood activities and the identification of specific subprojects will be informed by assessment of socio-economic impacts of enhanced fisheries management measures as part of the Fisheries Management Plan development for FMAs 6 & 9 under Subcomponent 1.1.

55. Vocational training program. A vocational training program specifically tailored to fishers, but supporting livelihood and income diversification beyond fisheries, and informed by the socio-economic surveys and impacts assessments under Component 1, will be made available to participants in fisheries targeted for effort reduction. Development and delivery of tailored training programs will be led by the Technical Education and Skills Development Authority (TESDA) and will complement facilitation of access to existing income, educational and credit support programs (see subcomponent 2.2).

Subcomponent 2.2: Aquaculture & Fisheries Enterprise Development (US $30.6 million)

56. More resilient and efficient aquaculture production and fisheries value chains will be supported through (i) technical assistance for enterprise development and business planning, (ii) (80:20) matching grants for select catalytic and resilient enterprise development investments, and (iii) strengthening provision of technical and marketing support for aquaculture & fisheries enterprises. Subprojects will be clustered to support the development of ABCs to provide a geographically integrated set of facilities and services along aquaculture and fisheries value chains from broodstock, hatchery, nursery, grow-out farms, up to post harvest, processing, and marketing.

57. Enterprise formation. Technical assistance will be provided to existing small and medium fisheries enterprises to build capacity for catalytic enterprise identification and business plan development. Successful grant recipients will also receive tailored technical and managerial extension support. In addition to preliminary Value Chain Analyses (VCAs) already prepared for Milkfish, tilapia, seaweeds and sardines, 14[57] additional VCAs will be undertaken at the start of the project to improve the understanding of market gaps and additional investments needs for major products.

58. Subprojects. Enterprise grants will support financially viable, sustainable and climate resilient catalytic investments in support of the ABCs. Project financing will focus specifically on the innovative or critical elements needed to establish new technologies (such as offshore seaweed and fish cage farming) or deliver key services. Priority enterprise grants may include fry and fingerling production, enhancing existing aquaculture farms with improved climate smart and resilient technologies for production, harvesting and handling, catalytic equipment and production systems to enhance productivity and increase private sector investment in new production, private fish landing sites, commercial processing centers, cold chain facilities, refrigerated vans, and retail outlets / mobile market stalls. A preliminary set of investments have been identified by BFAR Regional Directors in consultation with LGUs within FMAs 6 and 9. The investment pipeline will be refined through the assessment of critical ABC requirements under the Aquaculture Development Plans of Subcomponent 1.2, and the preparation of Value Chain Analyses.

59. Technical and marketing support. The project will enhance technical and extension services through capacity-building support to the PAFESs, complemented by the establishment of ABTIs to support the development of start-ups and small fishery business enterprises from technological innovation to market application through the delivery of an integrated bundle of services (i.e., demand-driven technology

[57] Oysters (Crassostrea), Seaweeds (Kappaphycus, Eucheuma), Mangrove crab (Scylla sp.), Pacific white shrimp (Litopenaeus vannamei, Mussels (Perna sp.), Tiger prawn (P. monodon), Squids (Loligo sp.), Sea cucumber (Holothuria scabra), Catfish (Clarias macrocephalus), Red snapper (Lutjanus sp.). 10 of them are expected to be for FMA 9, and 4 in FMA 6.

development, capacity building on entrepreneurship, access to financing, business facilitation, and market development). Enterprise development support will also promote partnerships between businesses to enhance technical exchange and market access, particularly opportunities for experienced firms to aggregate or partner with community enterprises, e.g. to expand production throughout grower schemes. Market development support services will also be provided, including:

a) *A web-based market information platform* that will be managed by the BFAR-Fisheries Information Management Center (FIMC) in coordination with DA-Information Technology Center of Agriculture and Fisheries, other relevant agencies such as DOST and DTI and private organization like the Philippine Chamber of Commerce and Industries through a MOA. This will increase fishers' and small and medium processors' access to regular and real time market information, including input prices and sources (e.g., fry, fingerlings, feeds); farmgate, wholesale, and retail prices of major fish species, and their sale volumes in major markets; and requirements of institutional buyers and exporters for specific fresh and processed products.

b) *Market promotion of fish and fishery products* through: intensified market matching/linkage between fishers associations/women's groups and wholesalers, processors, and institutional buyers and exporters; joining trade fairs, exhibitions, and investment missions both in domestic and international markets; and online marketing through social media campaigns, search marketing, and e-mail marketing. This will include assessment of potential to access higher value markets through sustainability certification schemes.

c) *Online trading to sell fresh and processed products and services* by leveraging online marketing. This will be piloted with leading beneficiary groups in two provinces (one in each FMA).

d) *Technical assistance for access to credit and insurance markets*. This will provide broader support for commercial investments, reaching beyond those activities that are prioritized for subproject grants (although subproject beneficiaries may also be provided with assistance to access financial services that would complement or scale up grants). Building on rural credit and insurance programs already provided by various government financial institutions (GFIs) such as the Agricultural Credit Policy Council (ACPC) and the Philippine Crop Insurance Corporation (PCIC), fishers, fish farmers, and MSMEs will be assisted in gaining access to GFIs or creditors that cater to small borrowers by identifying credit sources, preparing their credit applications, and providing financial literacy training such as simple bookkeeping, accounting, and record-keeping. Service providers will assist the small-scale fishers and micro and small businesses specifically on credit and insurance facilitation, with training to extension staff to take over successful models by the end of the project. On the supply side, a specialized firm will be hired to provide assistance to: (i) identify bankable borrowers and creating a pipeline of clients; (ii) create new financial products to lend to these clients; (iii) develop processes/procedures to better serve these clients; (iv) access partial credit guarantees, already in existence in the Philippines for agriculture; and (v) create a system to introduce project beneficiaries to interested FIs (e.g., this could be an electronic platform for borrowers soliciting finance).

Subcomponent 2.3: Aquaculture & Fisheries Infrastructure (US $80.5 million)

60. Critical public infrastructure to support the development of productive, resilient and effective fisheries and aquaculture value chains will be supported through subprojects encompassing civil works and associated technical assistance for design and operational support. Infrastructure subprojects fall under 3 categories: (i) resilient fisheries infrastructure for the municipal fishing fleet, which falls under joint BFAR / LGU

responsibility; (ii) research & regulatory facilities, which fall under the responsibility of BFAR (and in some cases NFRDI), and provide research, monitoring and regulatory services; and (iii) commercial service facilities, which ideally would be provided by the private sector, but for which BFAR is required to fill gaps in critical backbone services for ABCs and/or demonstration facilities for new technologies, standards or production scales, which cannot currently be met by the private sector alone. Infrastructure subprojects are designed to support the development of ABCs, in coordination with enterprise and livelihood subprojects described above.

61. Subprojects. The subcomponent will support the design, and implementation of infrastructure investments, including the provision of supporting technical assistance for design & supervision of infrastructure construction, as well as establishment of efficient operating systems. A preliminary set of investments have been identified by BFAR Regional Directors in consultation with LGUs within coastal regions of FMAs 6 & 9. These investments will be confirmed and refined through the assessment of critical ABC requirements under the Aquaculture Development Plans (and associated climate vulnerability assessment) of Subcomponent 1.2, and the preparation of Value Chain Analyses. Subprojects will support:

a) **Resilient fisheries infrastructure:** (i) climate resilient fishing harbors for the safety of fishers and their vessels[58]; (ii) climate resilient fish landing sites (jetties & wharves with integrated primary processing facilities) and integrated aquaculture service facilities, including improved post-harvest equipment for safe and sanitary handling, processing (including computer-based fish sorter, and conversion of low-quality catch into marketable products such as fish sauce, fish powder, and fish meal), packaging and labeling; and (iii) access roads.

b) **Research & regulatory facilities:** (i) production support labs and fish breeding centers to support improved broodstock and production techniques, particularly for aquaculture production; (ii) quality control labs for food quality and health assurance in the supply chain; and (iii) quarantine facilities to support the disease management under the ADMPs.

c) **Commercial service facilities:** (i) Integrated Broodstock Centers, and satellite and multi-species hatcheries to reduce reliance on imported fry; (ii) technology outreach stations (TOS), demonstration nurseries and aquaculture farms; and (iii) critical logistical services, i.e. ice machines and cold stores (including mobile ice plants and ice-making machines), and hirable refrigerated vans for transportation of fresh and processed fish and for commercial food retailing. These investments are designed to assist enterprises to overcome barriers to private investment (mainly associated with coordination issues, and insufficient technical and financial capacity of local operators to invest at the scale needed for efficient operation and management of risk), and not to displace it. Facilities constructed by the project will be tendered out to commercial operators, with exit strategies for handover to the private sector once viable business operations have been established, such as through lease-purchase arrangements.

Component 3: Project management, coordination and M&E (US$15 million)

62. This component will support project management, coordination, and monitoring and evaluation (M&E) at the national and subnational levels, specifically through establishing, operating, and maintaining an effective multi-level, interdisciplinary, and institutionalization-oriented project management system (PMS). It

[58] In addition to sea walls and safe harbors / dry parks built specifically to protect fishing vessels, all infrastructure will be build to be resilient to climate change, including more variable rainfall, increases in sea level, wave heights and max wind speeds. In addition, all enterprise subprojects will be screened and designed for climate resilience following procedures already established under PRDP.

will finance: (i) project progress monitoring, including compliance with environmental and social requirements; (ii) a Monitoring & Evaluation System, building on the cutting-edge MIS-M&E system developed by the Department of Agriculture through the ongoing PRDP project; (iii) a knowledge management system, including an on-line platform for sharing project-related knowledge products; (iv) independent audits; and (v) recurrent costs and incremental operating costs associated with management and coordination functions including financial management, procurement & contract management, and reporting.

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

63. The environmental and social risk classification is substantial. The Project will be implemented in FMAs covering a dynamic and diverse type of coastal and marine ecosystems. The environmental risk classification is substantial. Measures related to resource planning and management, livelihood and enterprise development could pose risks to ecologically sensitive areas (e.g. marine protected areas, key biodiversity areas) in the FMA covered by the Project. Efforts to sustainably manage coastal and marine resources, including strengthening regulations and enhancing enforcement, may impact the livelihoods of local communities and businesses and may lead to resource use conflict. Aquaculture production, post-harvest facilities, and fish and fishery products development may involve risks and impacts such as threats to biodiversity, waste and by-products, contamination of aquatic ecosystems, increased consumption of fresh water supply, energy demand, and others that may impact on the environment, community, and occupational health and safety.

64. The social risks are currently considered substantial due to potential livelihood impacts on select communities, businesses and fishermen and conflicts around sustainable resource management activities and boundary disputes. The project is likely to include areas with indigenous peoples and vulnerable communities that may be dis-proportionally affected by project activities if not well managed.

65. The magnitude of the potential risks will depend on the scale, intensity and volume of production, and scope of project implementation which cannot be ascertained at this stage. The Project, however, aims to embed E&S risk management measures in the project design to prevent and reduce the potential environmental and social impacts. Moreover, the Project will operate within a well-established legal and institutional framework, with policies and regulatory instruments relevant to environmental and social management as it pertains to the fisheries and aquaculture sector. While there are some concerns over capacity and experience of the Borrower in developing and implementing complex projects and managing stakeholder engagement, these could be readily addressed through implementation support.

E. Implementation

Institutional and Implementation Arrangements

66. BFAR would manage and implement the project through its existing organizational structure. A key feature of the project is that it would support a substantial change in the "way of doing business" as prescribed by FAO 263 (2019). This FAO requires the adoption of EAFM as an approach to the management of fisheries and aquatic resources in lieu of the traditional management approach that revolved primarily around the management and regulation of key fishing grounds. Key organizational arrangements for the project would be as follows:

a) **Project oversight, coordination and citizen engagement would be undertaken by a Project Advisory Board (PAB)**; the board would expand upon the existing Fishery Oversight Committee, through inclusion of other relevant sector representatives. The PAB will be chaired by the Secretary of Agriculture and include representatives from NGAs, fishery associations, industry, academia and research community, and NGOs.

b) **National Level implementation would be undertaken by a Project Management Office (PMO) reporting to the Director of BFAR and led by a National Project Coordinator.** The PMO would comprise a Component Leader for each of the project components who would be responsible for managing a small team of specialists providing oversight and coordination. The Component Leaders would be drawn from BFAR's organic staff to ensure sustainability of the institutional and operational reforms being introduced through the project. The PMO would also serve as secretariat to the PAB.

c) **For each FMA, a Management Board has been established, chaired by the Lead Regional BFAR Director and co-chaired by a Local Chief Executive.** FMA-Board Membership includes representatives from BFAR, Integrated Fisheries Aquatic Resources Management Councils (IFARMCs) and Protected Area Management Boards (PAMBs) where operational, as well as stakeholder representative from municipal, commercial and aquaculture fisheries, private sector traders/processers, academia, Indigenous Peoples, NGOs and NGAs. Scientific Advisory Groups (SAGs) would also be established to provide technical guidance to the Management Boards in accordance with FAO 263. At appraisal it had been agreed that for FMA 6, the Lead BFAR Director would be from Region X and for FMA 9, the Lead BFAR Director would be from Region Y. For both FMAs 6 and 9, the Management Boards and Scientific Advisory Groups had been established and convened at least once (to be confirmed at appraisal).

d) **A Project Implementation Unit (PIU) reporting to the Lead BFAR Director would serve each FMA.** The PIU staff would be organic personnel drawn from each of the RFOs encompassed by the FMA. It would serve as a secretariat to the FMA Management Board and be responsible for overseeing and facilitating the implementation of the project activities within the FMA, while also coordinating with relevant NGAs and key private sector partners. At appraisal the PIUs had been established and staff appointed (to be confirmed at appraisal).

e) **FMA Coordinating Units (FCUs) would be established at other BFAR-RFOs within the FMA to facilitate implementation of FMA Plans and Programs within the Provinces and Municipalities served by that RFO.** Key activities would include provision of technical assistance and advice to LGUs and the private sector as well as proactive support for the integration of FMA plans into the Provincial Investment Planning Frameworks and the Annual Investment Programs of LGUs. Training and reorientation of RFO staff in the new way of doing business through FMAs is ongoing. At appraisal the FCUs had been established and staff appointed (to be confirmed at appraisal).

67. Responsibilities for implementation of project activities are based on inherent mandates and responsibilities of BFAR and LGUs as per the 1991 Local Government Code, and will support devolution planning under the Mandanas Ruling[59]. BFAR, through the PIU within each FMA, is responsible for direct implementation of FMA-level analytical work, planning, research and monitoring activities. LGUs have primary responsibility for implementing fisheries and habitat management measures within municipal waters in alignment with agreed FMA-level plans. Nevertheless, in accordance with the EAFM approach and FMA structure for managing fisheries at biologically meaningful scales, BFAR maintains a role in supporting management activities in relation to planning and coordination, technical training and quality assurance. This support will be provided through the PIU and FCUs in each FMA. Fisheries infrastructure investments will be implemented by the Philippines Fisheries Development Authority (PFDA) under a memorandum of agreement (MoA), and where handover to LGUs is involved, will be mainstreamed into provincial and LGU planning through the Provincial Commodity Investment Planning (PCIP) process, with defined schedules for full handover and assumption of O&M responsibilities. Livelihood and enterprise subprojects will be implemented by grant recipients, with technical support and oversight of the project.

68. The project will support substantive changes in the operations of BFAR to realize the EAFM based on Fish Management Areas, and in many instances a more active and collaborative engagement by LGUs. New ways of doing business will be supported by considerable formal and on-the -job training of BFAR and LGU staff, with specialized and newer functions (including formation of clusters and enterprises, and business planning) augmented by specialized service providers. To both promote learning-by-doing under the project, and to provide time for institutional arrangements to evolve, project implementation will initially be supported by a significant complement of technical and administrative contract staff in the Project Implementation and Coordination Units (PIUs and FCUs), working alongside part-time, seconded BFAR staff and under the leadership of project component leaders drawn from regular BFAR staff. As experience with FMA implementation evolves, functions will become more mainstreamed within routine BFAR responsibilities, similar to the trajectory that has been followed with the mainstreaming of PRDP functions by DA over time.

69. Implementation procedures will be detailed in Project Operation Manuals. The OMs would provide details on how fiduciary, M&E, environmental and social aspects are to be managed, along with a communication/advocacy strategy on the eco-system approach to fishery management and roles of FMA Boards etc. For the implementation of Component 2 subprojects, relevant Operation Manuals already mainstreamed within DA will be adopted in full or in large part, i.e. I-Plan and I-Build for infrastructure and I-Reap for enterprise development.

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[59] The Supreme Court ruling of the Mandanas-Garcia Petition (Mandanas Ruling) in 2018 specified that the just share of LGUs from the national taxes is not limited to national internal revenue taxes collected by the Bureau of Internal Revenue (BIR) but also includes collections (customs duties) by the Bureau of Customs (BOC). The implementation of the Mandanas Ruling will shift a significant amount of the revenue collected from national to local government units beginning in 2022.

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