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Report No: PAD4438

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN

IN THE AMOUNT OF US$100 MILLION

TO THE

REPUBLIC OF THE PHILIPPINES

FOR

MINDANAO INCLUSIVE AGRICULTURE DEVELOPMENT PROJECT

May 5, 2023

Agriculture and Food Global Practice
East Asia and Pacific Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective: April 30, 2023)

Currency Unit =	PhP
PhP55.74=	US$1.00

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Manuela V. Ferro
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ABBREVIATIONS AND ACRONYMS

AD	Ancestral Domain
ADAIF	Ancestral Domain Agriculture Implementation Framework
ADB	Asian Development Bank
ADSDPP	Ancestral Domain Sustainable Development and Protection Plan
BAFE	Bureau of Agricultural and Fisheries Engineering
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao
BOL	Bangsamoro Organic Law
CADT	Certificate of Ancestral Domain Title
CALT	Certificate of Ancestral Land Title
CDA	Cooperative Development Authority
CERC	Contingent Emergency Response Component
CO_2	Carbon Dioxide
COA	Commission on Audit
CPF	Country Partnership Framework
CRVA	Climate Risk Vulnerability Assessment
CSA	Climate Smart Agriculture
CSEA	Cooperative and Social Enterprise Authority
DA	Department of Agriculture
DBM	Department of Budget and Management
DENR	Department of Environment and Natural Resources
DPWH	Department of Public Works and Highways
EIA	Enterprise Investment Agreement
EFA	Economic and Financial Analysis
ENPV	Economic Net Present Value
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
eVSA	Expanded Vulnerability and Suitability Analysis
EX-ACT	Ex-Ante Carbon-balance Tool
FAO	Food and Agriculture Organization of the United Nations
FM	Financial Management
FMR	Farm-to-Market Road
FPIC	Free and Prior Informed Consent
GAP	Good Agricultural Practices
GCRF	Global Crisis Response Framework
GDP	Gross Domestic Product
GHG	Green House Gas
GoP	Government of the Philippines
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
I-BUILD	Intensified Building-Up of Infrastructure and Logistics for Development
IBRD	International Bank for Reconstruction and Development

ICC	Indigenous Cultural Community
IFAD	International Fund for Agricultural Development
IFR	Interim Financial Report
IMA	Implementation Management Agreement
I-PLAN	Investments for Planning at the Local and National Levels
IP	Indigenous Peoples
IPO	Indigenous Peoples Organizations
IPRA	Indigenous Peoples Rights Act
IPS	Indigenous Peoples Structure
I-REAP	Investment in Rural Enterprise and Agriculture and Fisheries Productivity
IRR	Internal Rate of Return
LGU	Local Government Unit
LMP	Labor Management Procedures
M&E	Monitoring and Evaluation
MAB	MIADP Advisory Board
MAFAR	Ministry of Agriculture, Fisheries and Agrarian Reform
MDS	Modified Disbursement System
MENRE	Ministry of Environment, Natural Resources and Energy
MFD	Maximizing Finance for Development
MIADP	Mindanao Inclusive Agriculture Development Project
MIPA	Ministry of Indigenous Peoples' Affairs
MIS	Management Information System
MOA	Memorandum of Agreement
MOLE	Ministry of Labor and Employment
MRDP	Mindanao Rural Development Project
NAFMIP	National Agriculture and Fisheries Modernization and Industrialization Plan
NCA	Notice of Cash Allocation
NCCAP	National Climate Change Action Plan
NCIP	National Commission on Indigenous Peoples
NEDA	National Economic and Development Authority
NGO	Non-Governmental Organization
NPV	Net Present Value
O&M	Operation and Maintenance
PCIP	Provincial Commodity Investment Plan
PDO	Project Development Objective
PDP	Philippine Development Plan
PhP	Philippine Peso
PLGU	Provincial Local Government Unit
POM	Project Operations Manual
PP	Procurement Plan
PPMIU	Provincial Project Management and Implementation Unit
PPSD	Project Procurement Strategy for Development
PRDP	Philippine Rural Development Project
PSO	Project Support Office
RAEB	Rapid Assessment of Emerging Benefits
RFO	Regional Field Office

RPAB	Regional Project Advisory Board
RPCO	Regional Project Coordination Office
SEP	Stakeholder Engagement Plan
SPCMAD	Special Projects Coordination and Management Assistance Division
STEP	Systematic Tracking of Exchanges in Procurement
tCO_2eq	Tons of CO_2 Equivalent
TSP	Technical Service Provider
US$	United States Dollar
VCA	Value Chain Analysis

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Philippines	Mindanao Inclusive Agriculture Development Project	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P173866	Investment Project Financing	Substantial

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[✓] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[✓] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[✓] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	[ ] Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
25-May-2023	30-Jun-2029

Bank/IFC Collaboration

No

Proposed Development Objective(s)

To increase agricultural productivity, resiliency, and access to markets and services of organized farmer and fisherfolk groups in selected Ancestral Domains and value chains in Mindanao.

Components

Component Name	Cost (US$, millions)
Ancestral Domain Planning and Social Preparation	12.50
Resilient Ancestral Domain Agri-Fisheries Infrastructure	80.19
Ancestral Domain Agri-Fisheries Production and Enterprise Development	20.52
Project Management and Support, Monitoring, and Evaluation	11.79
Contingent Emergency Response	0.00

Organizations

Borrower:	REPUBLIC OF THE PHILIPPINES
Implementing Agency:	Department of Agriculture

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	125.00
Total Financing	125.00
of which IBRD/IDA	100.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	100.00

Non-World Bank Group Financing

Counterpart Funding	25.00
Local Govts. (Prov., District, City) of Borrowing Country	8.72
National Government	16.28

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2023	2024	2025	2026	2027	2028	2029	2030
Annual	0.00	3.71	5.48	13.69	13.09	23.23	28.13	12.67
Cumulative	0.00	3.71	9.19	22.88	35.97	59.20	87.33	100.00

INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture and Food

Contributing Practice Areas

Environment, Natural Resources & the Blue Economy, Social Sustainability and Inclusion, Transport

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Substantial
9. Other	Moderate
10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

Institutional Arrangements: Loan Agreement: Schedule 2, Section I.A.1

Recurrent, Continuous

The Borrower, through the DA, shall maintain, throughout the period of implementation, Project implementation structures at the national and sub-national levels, all with composition, functions, staffing and resources satisfactory to the Bank and set out in the Project Operations Manual.

Sections and Description

Institutional Arrangements: Loan Agreement: Schedule 2, Section I.A.2
By three (3) months after the Effective Date, Recurrent, Continuous
The Borrower, through the DA, shall establish and thereafter maintain a MIADP Advisory Board throughout the implementation of the Project.

Recurrent, Continuous
The Borrower, through the DA, shall maintain a Project Support Office within DA for the carrying out the day-to-day implementation of the Project.

Prior to commencement of any Project activity in the respective region, Recurrent and Continuous
The Borrower, through the DA, shall establish and thereafter maintain: (i) a Regional Project Coordination Office for the day-to-day Project management and implementation at the region; and (ii) a Regional Project Advisory Board for approving Subproject proposals and providing guidance for Project implementation at the region.

Sections and Description

Annual Work and Financial Plans: Loan Agreement: Schedule 2, Section I.C
Recurrent, Annual
The Borrower, through DA, shall prepare and furnish to the Bank for its no-objection not later than October 31 of each fiscal year during the implementation of the Project (or such later date as the Bank may agree), a consolidated Annual Work and Financial Plan ("AWFP") containing all Project activities and expenditures proposed to be included in the Project in the following fiscal year, including a specification of the sources of financing for all expenditures, and environmental and social risk and impact management measures taken or planned to be taken in accordance with the provisions of Section I. D of Schedule 2 to the Loan Agreement.

Sections and Description

Institutional Arrangements: Loan Agreement: Schedule 2, Section I.A.3
By three (3) months after the Effective Date
The Borrower, through the DA, shall enter into a memorandum of agreement with the NCIP under terms and conditions acceptable to the Bank.

Prior to commencement of any Project activity at local levels
The Borrower, through the DA, shall enter into a memorandum of agreement with each Participating LGU for implementation of the Project under terms and conditions acceptable to the Bank.

Sections and Description

Project Operations Manual: Loan Agreement: Schedule 2, Section I.B
Recurrent, Continuous
The Borrower, through DA, shall ensure that the Project is carried out in accordance with the arrangements and procedures set out in the POM and shall not amend, abrogate or waive any provision of the POM unless the Bank has provided its prior no-objection thereof in writing.

Sections and Description

Environmental and Social Standards: Loan Agreement: Schedule 2, Section I.D
Recurrent, Continuous
The Borrower shall: (i) ensure that the Project is carried out in accordance with the Environmental and Social Standards, and the Environmental and Social Commitment Plan or ESCP (including the management tools and instruments referred to therein), in a manner acceptable to the Bank; and (ii) not amend, repeal, suspend or waive any of their provisions unless the Borrower agrees otherwise, and report on their status of implementation as part of the project reports.

Sections and Description
Personal Data: Loan Agreement: Schedule 2, Section II.C
In sharing any information, report or document related to the activities described in Schedule 1 of the Loan Agreement, the Borrower, through the DA, shall ensure that such information, report or document does not include Personal Data unless otherwise explicitly requested by the Bank or permitted under the Loan Agreement.

Sections and Description
Contingent Emergency Response: Loan Agreement: Schedule 2, Section I.G
In case of an Eligible Crisis or Emergency
The Borrower shall: (i) ensure that a manual ("CERC Manual") and Emergency Action Plan is prepared and adopted for implementation of Part 5 of the Project in form and substance acceptable to the Bank; (ii) in the event of an eligible crisis or emergency, ensure that the activities under said part are carried out in accordance with such manual, plan and all relevant safeguard requirements; and (iii) not amend, suspend, waive or abrogate, repeal or waive any provisions of the manual unless the Bank agrees otherwise in writing.

Sections and Description
Subprojects: Loan Agreement: Schedule 2, Section I.E
Recurrent, Continuous
The Borrower, through the DA, shall make Subgrant available to: the Participating LGU for carrying out Infrastructure Subprojects under an Implementation Management Agreement, and the Registered IPO for carrying out Enterprise Subproject under an Implementation Management Agreement and an Enterprise Investment Agreement; all on terms and conditions acceptable to the Bank and in accordance with the Project Operations Manual.

Sections and Description
Specific Implementation Arrangements in BARMM: Loan Agreement: Schedule 2, Section I.F
Recurrent, Continuous
The Borrower shall maintain an overall legal, regulatory and operational framework recognizing, protecting, and promoting the rights of indigenous peoples in BARMM, to enable implementation of Project activities in BARMM in accordance with the terms of this agreement, in form and substance acceptable to the Bank, and in accordance with further details set forth in the Project Operations Manual.

Prior to commencement of any Project activity at BARMM
The Borrower, through the DA, shall enter into a memorandum of agreement with MAFAR/MIPA/MENRE for

implementation of the Project in the Selected Ancestral Domain in BARMM under terms and conditions acceptable to the Bank

Sections and Description

Mid-Term Review: Loan Agreement: Schedule 2, Section II.B

Once, on or about 36 months after the Effective Date

The Borrower, through the DA, shall prepare and furnish to the Bank a mid-term report, in such detail as the Bank shall reasonably request.

Conditions

Type	Financing source	Description
Disbursement	IBRD/IDA	Loan Agreement: Schedule 2, Section II.B.1(b) The Borrower may not withdraw the proceeds of the Loan as allocated for Emergency Expenditures, unless and until: (i) (A) the Borrower has determined that an Eligible Crisis or Emergency has occurred, and has furnished to the Bank a request to withdraw Loan amounts under Category (2); and (B) the Bank has agreed with such determination, accepted said request and notified the Borrower thereof; and (ii) the Borrower has adopted the CERC Manual and Emergency Action Plan, in form and substance acceptable to the Bank.

I. STRATEGIC CONTEXT

A. Country Context

1. **The Philippines is one of the most dynamic economies in Asia. However, the COVID-19 pandemic has impacted its strong economic growth trajectory.** With increasing urbanization, a growing middle-income class, and a large and young population, the Philippines nearly doubled its gross domestic product (GDP) per capita over the past two decades, from US$1,669 in 2000 to US$3,338 in 2019 (at constant 2010 US$). The average annual GDP growth was 6.4 percent between 2010-2019, up from an average of 4.5 percent between 2000-2009[1]. While the overall economy grew robustly, this was driven mainly by services and industry. Agricultural growth was just 1.3 percent over the same period. Before the COVID-19 pandemic, the country was poised to cross the threshold from a lower middle-income country (MIC) to upper middle-income status. The COVID-19 pandemic plunged the Philippines into its first recession in 29 years, with the economy experiencing a 9.5 percent decline in GDP for the entirety of 2020. A rebound is now underway. The GDP grew by 7.2 percent in the fourth quarter of 2022, the seventh consecutive quarterly increase since the first quarter of 2021[2] .

2. **Before the COVID-19 pandemic, the Philippine economy had made good progress in delivering inclusive growth.** Poverty levels fell from 23.3 percent in 2015 to 16.6 percent in 2018, and the Gini coefficient declined from 0.45 to 0.43[3] over the same period. However, by the first semester of 2021, the poverty incidence had again risen to 23.7 percent equivalent to about 26.14 million poor Filipinos. Food and nutrition security concerns remain pervasive, with food prices in the Philippines increasing by 9.3% year-on-year in March 2023[4]. For the most part this has been due to; (a) disruptions brought by Russia's invasion of Ukraine which pushed global commodity prices to record levels and raised the price of food imports and agricultural inputs; (b) weather disturbances which have caused agricultural production losses; (c) slumps in local meat production due to flare-ups of African Swine Fever and the higher cost of animal feeds, (d) currency depreciation and import delays which have exerted upward pressure on prices and (e), inadequate transport and logistics, especially the lack and poor state of farm-to-market roads (FMRs) which restrict the expansion of agricultural value chains and are the cause of considerable supply-side inefficiencies. Nearly 60 percent of the poor work in agriculture, twice the national average and three times the ratio of those who are not poor. Poverty remains mostly a rural and agricultural phenomenon and correlates strongly with underemployment. Notably, poverty is most pervasive among the Indigenous Cultural Communities/Indigenous Peoples (ICCs/IPs) in ancestral domains (ADs), the focus of this Mindanao Inclusive Agriculture Development Project (MIADP or "the project").

3. **Of the three island groups of Luzon, Visayas, and Mindanao, the project's location, Mindanao, is the poorest.** Poverty is particularly concentrated in the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)[5], where the poverty rate is 29.8 percent.[6] Mindanao is home to about 25 percent of the Philippines' population but accounts for 35 percent of its poor. While the City of Davao and its surrounding region have experienced strong performance,

[1] Philippine Economic Updates, World Bank 2022.
[2] Philippine Statistics Authority, September 2022.
[3] Gini index < 0.2 represents perfect income equality, 0.2–0.3 relative equality, 0.3–0.4 adequate equality, 0.4–0.5 big income gap, and above 0.5 represents severe income gap. Therefore, the warning level of Gini index is 0.4.
[4] Philippines Trading Economics, March 2023
[5] BARMM was established through the *Republic Act 11054* in 2018 (Bangsamoro Organic Law). It is administered by the Bangsamoro Transition Authority (BTA) and encompasses five Muslim provinces: Basilan, Lanao del Sur, Maguindanao, Sulu, and Tawi-Tawi. The people of the Bangsamoro region comprise several ethnic groups, with a population of 3.8 million in 116 municipalities and 2,590 barangays.
[6] Based on 2021 Magnitude of Poor Families Data from the PSA Poverty Statistics.

glaring exceptions remain in the conflict-affected areas and ADs. There, 68 percent of households, largely IPs, live below the poverty line.[7] The geography of poverty is strongly correlated to areas' vulnerability to conflict, violence, and the impacts of natural hazards and climate change. The remoteness and inaccessibility of IP locations and their historical marginalization has resulted in a vicious cycle of poverty and the inability to access basic social services. Most of the IP households reported earning monthly incomes below PhP10,000, equivalent to about US$180. Poor educational attainment has also prevented communities from accessing other economic alternatives and opportunities. Because they are in remote areas, many of the children cannot access school. Where data is available, some communities reported that around 40-80 percent of the community members have not received any formal education and are illiterate. Of those who had access to education, around 30 percent graduated from high school. IPs who graduate from college in these areas are uncommon.

4. **A compounding factor is the multi-layered history of conflict which has particularly affected Mindanao.[8]** The most affected areas are in Northern Mindanao, Central Western Mindanao, and Western Mindanao, which includes the island provinces of Basilan, Sulu, and Tawi-Tawi.[9] Much of the conflict in Mindanao has been between the Muslim armed groups and the government, although religion is not the primary basis. Within the Muslim armed groups, internal fights and disputes are primarily along ethnic lines and focused on particular geographical locations.[10] Peace efforts with the Muslim armed groups have made headway. Two major groups, the Moro National Liberation Front and the Moro Islamic Liberation Front, recently signed peace agreements with the government.[11] Besides the Muslim armed groups, there are periodic conflicts in some areas with the Communist Party of the Philippines-New People's Army (CPP-NPA). These insurgents draw support from the discontent among IP communities over the exploitation of their AD natural resources, dispossession of land by companies extracting minerals or timber, or a lack of respect for the customs and traditions of the IPs. Such activities have had limited success because IPs' concerns primarily focus on protecting their ADs from outside encroachment.[12]

B. Sectoral and Institutional Context

5. **The agriculture sector provides 30 percent of total employment and accounts for 9.1 percent of GDP (2021).** While

[7] Indigenous Peoples/Ethnic Minorities and Poverty Reduction, Philippines. Asian Development Bank.

[8] During preparation, multiple consultations were conducted with key stakeholders. The most commonly cited conflict drivers included: (a) land dispossession; (b) government neglect resulting in widespread poverty and joblessness; (c) ineffective governance and the lack of the rule of law as manifested in the persistent outbreak of *rido* (clan war and revenge killing); (d) intense election disputes; (e) inter-ethnic rivalry; (f) competition for scarce natural and mineral resources; (g) historical injustices and marginalization; (h) creation of protected areas within ADs through overlapping legislation; and (i) influx of migrant non-IP settlers.

[9] Adriano, Fermin, et.al., 2016. "Mindanao Jobs Report: Conflict Affected Mindanao", unpublished paper submitted to the World Bank.

[10] The Tausug ethnic group, which populates the island of Sulu, partly Basilan, Tawi-Tawi, and the Western coast of the Zamboanga Peninsula, leads the Moro National Liberation Front (MNLF). The Moro Islamic Liberation Front (MILF) is predominantly composed of the Maguindanaoans in the Maguidanao province, with strong support from the Maranaos of the Lanao Sur and Lanao Norte provinces. The Bangsamoro Islamic Freedom- Fighters (BIFF) dwell in the heartland of the Maguindanao province. The Abu Sayyaf Group (ASG) is a radical splinter group from the MNLF that operates primarily in the island provinces of Sulu and Basilan. The Maute Group comes from the Maranaos of the Lanao provinces.

[11] Though threats of the other minor armed groups persist, the cooperation extended by the MNLF and the MILF with the government—highlighted by the recent unity meeting between MNLF Chairman Nur Misuari and MILF Chairman Al Haj Murad Ibrahim—has enabled development projects in Mindanao's conflict-affected areas to progress largely unimpeded. Various events have weakened the capability of other Muslim armed groups. These include the decimation of the main force of the Maute Group in the Marawi City war in 2017, the capture and death of ASG leaders in Basilan due to effective governance of the island province by its new set of local government officials, the death of the BIFF founder-leader and MILF's success in convincing BIFF members to join the MILF in the peace process with the government.

[12] Quitoriano, Ed. 2016. "Jobs and Livelihood Constraints in Areas Affected by the CPP/NPA/NDF". A report submitted to the WB Mindanao Jobs Report. Note that the CPP-NPA is heavily influenced by the Maoist revolutionary strategy of "encircling the city through the countryside".

the sector's contribution to GDP has fluctuated over the past six years, it has remained below 11 percent per year. Agricultural policy reforms have spurred some growth in the sector, but this has fallen short of sparking a structural transformation and dynamic development. The Philippines increasingly relies on food imports to ensure sufficient supply and stable prices, with the total value of agricultural imports approximately twice that of its agricultural exports. The average annual growth in the agriculture and fishery sectors in 2020 was around 0.5 percent. This increase resulted from: (a) a five percent increase for crops, which contribute 53.7 percent of the total agricultural output; and (b) a 0.9 percent growth in fisheries, which accounts for 16.0 percent of the total agricultural output. However, there have also been declines in production. Livestock production, accounting for 17.3 percent of the total agricultural output, contracted by 8.5 percent. Likewise, poultry, which contributes 13.0 percent to total agricultural production, declined by 4.7 percent.[13]

6. **Mindanao accounts for 33.4 percent of the total value of agricultural production in the Philippines, second only to Luzon at 39.2 percent and ahead of Visayas at 27.4 percent.[14]** It produces 40 percent of the country's food and contributes over 30 percent to the food trade. One-third of the land in Mindanao is devoted to agriculture. The highest value from agricultural production is in Northern Mindanao, where the number of corporate farms is increasing. In recent years, Mindanao has produced 88 percent of the country's pineapples, 81 percent of bananas, 76 percent of cassava, 59 percent of coconuts, 50 percent of corn, and 100 percent of rubber. BARMM produces almost half (47.3 percent) of the marine capture fish and 28 percent of aquaculture fish.[15] Among the 17 regions of the Philippines, BARMM has also displayed the highest growth in the value of agriculture production at 7.2 percent in 2021 (2018 prices).

7. **Despite the significant agricultural growth in Mindanao, vast tracts of agricultural land in ADs in Mindanao are unused, or under subsistence cultivation by ICCs/IPs.[16]** As previously noted, this is due to the inaccessibility of many ADs, and ICC/IP's historical marginalization within them. The difficulties faced by these communities include poor quality roads to and within ADs; frequent wash-outs and landslides cutting off access and services for prolonged periods; limited or no technical services or access to markets or finance; lack of electricity, wifi, and telephone services. As a result, post-harvest losses, to the extent there are marketable surpluses, frequently amount to 40 percent or higher. Additionally, for the most part the Indigenous People Organizations (IPOs) need considerable capacity building, business orientation and market assistance.

8. **Unpredictable weather patterns and extreme climate events have an enormous impact on agricultural production and rural livelihoods in Mindanao.** Over the last few decades, the annual total rainfall for central and western Mindanao has declined, while rainfall increased in the northeastern and southwestern areas. The El Niño Southern Oscillation events compound these destabilizing trends, often reducing farmers' yields by 30-40 percent. By 2050, the annual mean temperature in several areas of Mindanao is expected to increase by 1.4 degrees Celsius, and the average rainfall is projected to increase by 4 percent. Heightened water and heat stress would likely impact crop suitability, increase the incidence of pests and diseases and affect water availability, all of which would potentially reduce crop yields. These factors have mutually reinforcing negative effects; worsening drought conditions reduce soil moisture and increase surface runoff and flooding after heavy rain, especially in deforested areas. Due to rampant deforestation, these events create debris and obstructions that block access for extended periods, adding to

[13] Philippine Statistics Authority 2020

[14] Philippine Statistics Authority; Regional Production Accounts 2019-2021

[15] Adriano, Karlo S., 2021. Promoting the Development of the Philippine Fishery Sector (Trends, Policies and Future Prospects". Paper submitted to the Fisheries and Aquatic Board.

[16] ADs in Mindanao (outside of BARMM) occupy around 4.2 million hectares (ha) of land, of which some 30 percent is considered suitable for agriculture, although much is idle or under shifting cultivation for local consumption. In BARMM, the ADs occupy 309,702 ha and encompass 11 municipalities.

difficulties in accessing remote ADs. Water levels often take days to subside, isolating communities from disaster and emergency support services.

9. **There is limited technical support for ICCs/IPs in ADs, and where provided, it has been mainly for agricultural production.** Support has been primarily given through the Department of Agriculture's (DA) 'Kabuhayan at Kaunlaran ng Kababayang Katutubo (4K) Program—in English, the Special Area for Agricultural Development Program[17]—and the DA's Commodity Programs for rice, corn, high-value crops, and livestock. Local Government Units (LGUs) have provided some support for ICCs/IPs, but budget limitations have constrained LGU capacity and resulted in their prioritizing more accessible lowland production areas. Consequently, most AD land is idle or under shifting cultivation for local consumption. Where there are marketable surpluses, lack of access to markets and post-harvest facilities often leads ICC/IP farmers to sell produce at very low prices or abandon sales, leaving produce to rot. For ICCs/IPs, the economic slowdown due to COVID-19 has further exacerbated their vulnerability, disrupted agricultural supply chains and resulted in job losses.

10. **The Philippines has a robust enabling framework to support IPs/ICCs.** The Philippines was the first country in Southeast Asia to enact a policy that recognizes, protects, and promotes the rights of ICCs/IPs through the Indigenous Peoples Rights Act (Republic Act 8371 (IPRA-1997)). The rights embodied in the IPRA (Chapters III-VI) are: (a) the right to ancestral domain; (b) the right to self-governance and empowerment; (c) social justice and human rights; and (d) cultural integrity. In addition, the law recognizes the 'sustainable traditional resource rights' of IPs/ ICCs, which encompasses the right to sustainably use, manage, protect and conserve their ancestral domain, including: (a) land, air, water and minerals; (b) plants, animals and other organisms; (c) collecting, fishing and hunting grounds; (d) sacred sites; and (e) other areas of economic, ceremonial, and aesthetic value as per their Indigenous knowledge, beliefs, systems and practices. Indigenous Political Structures (IPS) promote Indigenous governance, providing the cultural leadership, institutions, and processes that govern decision-making and participation. Free and Prior Informed Consent (FPIC)[18] is especially enshrined under the rights to ancestral domains and cultural integrity. The administration of Indigenous Peoples Rights Act (IPRA) is the responsibility of the National Commission on Indigenous Peoples (NCIP), an attached agency of the Department of Social Welfare and Development. Among its various functions, the NCIP is involved in the identification, delineation and titling of ancestral lands, and in issuing either a Certificate of Ancestral Domain Title (CADT) or Certificate of Ancestral Land Title (CALT). The NCIP also supervises the preparation of Ancestral Domain Sustainable Development and Protection Plans (ADSDPPs).[19] These documents contain the development needs, strategies, and priorities of ICCs/IPs within their respective ADs.[20] In the BARMM, the Bangsamoro Organic Law (Republic Act 11054 or BOL) and the Bangsamoro administrative Code (Bangsamoro Autonomy Act No. 13) provide the key principles and policies for the recognition and promotion of the rights of IPs

[17] This government program is focused on marginalized households engaged in agriculture and fishery, but not specifically ICCs/IPs.

[18] FPIC is defined as the "consensus of all members of the ICCs/IPs to be determined in accordance with their respective customary laws and practices, free from any external influences and obtained after fully disclosing the intent and scope of an activity, in a language and process understandable to the community." NCIP Administrative Order (AO) 3, s2012 provides that for development processes especially those spearheaded by ICCs/IPs themselves and those proposed by the government agencies, local government units (LGUs) and funding institutions in partnership with the NCIP (Part VI, NCIP AO3, s2012), FPIC can be undertaken through a validation process that requires: (a) the voluntary initiation or support of the ICCs/IPs to the proposed development activity, project or program; (b) the project's conformance to the community's ADSDPP or in its absence, the community's plans for their future ADSDPP; (c) knowledge of the ICCs/IPs of the proposed development and its socio-cultural and environmental impacts; (d) knowledge by both parties of their obligations; or (e) that the proposed development would deliver basic services or livelihood projects to the community (Section 39, Part VI).

[19] Many ADs have yet to be issued CADTs or develop ADSDPPs, largely due to the NCIP's limited budget. As of March 2018, there were 219 CADTs applications in the country, covering 5.411 million ha. Of these, 117 CADTs (53 percent) were in Mindanao for about 2.755 million ha (51 percent) of land.

[20] ADSDPPs are comprehensive documents encompassing most aspects of ICC/IP community life, including their customs, values, institutions, enforcement practices, and cross-sectoral development goals.

as summarized in Box 1.

Box 1: Existing Legal Framework on Recognition, Protection and Promotion of the rights of IPs in BARMM

The Bangsamoro Organic Law (BOL) reaffirms that the Bangsamoro government shall recognize and promote the right of IPs within the framework of the 1987 Constitution and national law. The BOL also acknowledges the need for a law to be enacted to recognize, protect, promote, and preserve the rights of IPs in BARMM. Until this law is enacted, other laws on IPs in the BARMM shall remain applicable.

The Bangsamoro Administrative Code sets forth the same principles in recognizing and protecting IPs' rights under national laws, including their rights to ancestral domains. This Code provides the legal basis for the Ministry of Indigenous Peoples' Affairs (MIPA) to serve as a primary agency for IP-related matters in BARMM. MIPA also issues CADTs to eligible ICCs/IPs in BARMM.

A proposed specific IP Code for BARMM is under discussion at the BARMM's Cabinet Legislative Committee. The draft IP Code recognizes the policies embodied in the 1987 Constitution, IPRA Law, Bangsamoro Organic Law, and Bangsamoro Administrative Code. The recognition and protection of IPs' rights and benefits in the proposed IP Code are expected to follow the same principles and policies under the national laws. Until the specific IP code for BARMM is passed, the IPRA Law remains applicable and serves as a legal basis for issuing land certificates or CADTs. As such, the existing legal framework in BARMM is considered adequate for implementing the proposed project.

C. Relevance to Higher Level Objectives

11. **The project closely aligns with the World Bank Group's Country Partnership Framework (CPF) for the Philippines 2019-23 (Report No. 143605-PH).**[21] The CPF's Focus Area #2, Competitiveness and Economic Opportunity for Job Creation, seeks to promote "inequality-reducing transformation that would expand economic opportunities across sectors, from agriculture, forestry and fisheries to industry and services". In particular, the project would support objective Number 7 to improve "income opportunities in agriculture" by supporting IPOs and ICCs/IPs to engage more productively in agriculture and related enterprises. The project also aims to raise the productivity of idle AD agricultural land through public-private partnerships and public-private-community partnerships. Doing so would help increase the IPs' incomes and likely create new employment opportunities.

12. **The project is identified in the CPF as one of the key projects under Focus Area #3: Addressing Core Vulnerabilities by Building Peace and Resilience.** The project expects to encompass spatial development in Mindanao to help "empower communities by increasing their capacity to address conflicts and reduce vulnerabilities". The ICCs/IPs living under impoverished conditions in remote ADs in Mindanao are particularly vulnerable to infiltration by rebel groups. Such groups attract support by emphasizing issues close to the heart of IPs, such as protecting the territorial integrity and resources of the ADs. The project would help mitigate such occurrences by supporting development efforts within ADs, increasing opportunities for ICC/IP strengthening or forming IPOs. Interventions to raise incomes and food security for ICC/IPs also align with the government's broader strategy for strengthening peace and order in Mindanao.

13. **The project also closely aligns with the Philippine Development Plan (PDP) 2023-2028.** In particular, the project responds to government priorities of recovery and resiliency in the wake of the pandemic, which directs the agri-fishery sector to focus on food security and sustainability. Approved in January 2023, the PDP calls for access interventions that prioritize geographically isolated and disadvantaged areas and marginalized populations. It also requires the protection of IPs, all of which are key elements of the project design. The project aligns well with the

[21] The Philippine Country Partnership Framework (CPF) 2019-2023 was approved by the World Bank Board on December 17, 2019.

PDP's emphasis on addressing vulnerabilities across ecosystems to improve resilience based on evidence and risk-based information.

14. **The project responds directly to the World Bank's Global Crisis Response Framework (GCRF).** Resilient Ancestral Domain Agri-Fisheries Infrastructure (Component 2) and Ancestral Domain Agri-Fisheries Production and Enterprise Development (Component 3) will specifically respond to Pillar 1: Responding to Food Insecurity by enhancing food security of subsistence level ICC/IPs in ADs. Ancestral Domain Planning and Social Preparation/Mobilization[22] (Component 1) will respond to Pillar 4: Strengthening Policies, Institutions and Investments for Rebuilding Better, by strengthening ICC/IPs' planning capacity and their institutions to better respond to future crises.

15. **The project will follow the principles of inclusion, per the World Bank Group Fragility, Conflict and Violence (FCV) Strategy 2020-2025 (Report No. 146551).** The project aligns with Pillar 3: Helping Countries Transition out of Fragility. The project addresses two priorities identified in the strategy: creating jobs and economic opportunities and building community resilience and preparedness, especially regarding climate change and environmental degradation impacts. The project would follow the strategy's core principle of 'doing no harm' by adopting a phased approach that allows for 'learning by doing'.

16. **The project will contribute to the World Bank's corporate priority for Mobilizing Finance for Development (MFD).** The project would be the first of its kind in the Philippines to provide such a significant scale of investment for the development of ICCs/IPs in ADs and to help the transition from a largely subsistence economy to a more market-private-sector-led system. As such, the project supports transformative and largely private-sector-led changes called for in the PDP and, more specifically, in the National Agriculture and Fisheries Modernization and Industrialization Plan (NAFMIP) 2021-2030 for modernizing the agri-fishery sectors. Given the isolation and marginalization of many IP communities, the project would use matching grants coupled with technical and business support to incentivize forming, registering, and expanding IPOs. The DA would provide matching grants through loan proceeds and via the responsible LGUs. A private sector (IPO) equity contribution of at least 20 percent in cash or kind would be required to co-finance the matching grant. Investment support would be based on value chain analyses and a rigorous prioritization process that ensures viability and sustainability. A wide range of agri-fishery investments would be eligible for support, from production through post-harvest handling, logistics and processing. In line with experience with enterprise development-notably, the ongoing Philippine Rural Development Project (PRDP)[23]—substantial technical assistance would be provided for IPO enterprises in business management. This technical assistance would include financial management, accounting, and opportunities and procedures for accessing additional finance and insurance available through commercial entities and forming business alliances/partnerships with consolidators and processers outside the ADs. The project would also provide public infrastructure support to complement the IPO private-sector-led development. It would include roads, bridges and tramlines to facilitate access and market linkages, pre- and post-harvest facilities, and irrigation facilities.

[22] Social Preparation, in the Philippine context, is synonymous with what is more commonly referred to as Social Mobilization. The local terminology is used throughout the project appraisal document to be consistent with other government documents and the understanding of project implementation personnel.

[23] The original PRDP (P132317) consisted of a US$501.25 million loan fully blended with a GEF grant of US$7.0 million. Two additional financing loans (US$170 million and US$280 million) and a European Union grant of US$21.3 million equivalent brought the total financing to US$979.55 million. Project closing is July 31, 2025. The PRDP supports: (a) enhancing agri-fishery modernization planning through use of science-based instruments and establishment of a joint DA and LGU planning and investment platform; the Provincial Commodity Investment Plan (PCIP); (b) Improved Value Chain Infrastructure applying enhanced climate-proof construction standards, strengthened O&M and linkage with agri-fishery value chain strengthening; (c) Enterprise Development and increased productivity through the clustering of producers into viable, business-oriented enterprises; and (d) the development of systems enabling efficient management and effective MIS and M&E.

II. PROJECT DESCRIPTION

A. Project Development Objective

17. **PDO Statement:** To increase agricultural productivity, resiliency, and access to markets and services of organized farmer and fisherfolk groups in selected Ancestral Domains and value chains in Mindanao.

    PDO Level Indicators:

    a) Percentage increase in the average yields for selected crops of farmer-beneficiaries
    b) Number of farmers adopting improved agricultural technology (gender-disaggregated) [24]
    c) Number of farmers reached with agricultural assets or services (gender-disaggregated)
    d) Percentage increase in the average gross value of sales of beneficiary-IPOs

18. As per the PDO statement, productivity would be measured through the "percentage change in the average yields for selected crops of farmer-beneficiaries". Resiliency would be measured through the "number of farmers adopting improved agricultural technology (gender-disaggregated)", where improved agriculture technologies" include "climate smart agriculture technologies" which enable farmers to strengthen their climate resilience. This is also a corporate results indicator (CRI). Resiliency would also be measured through "percentage change in the average gross value of sales of beneficiary-IPOs", in terms of economic resiliency. Access to markets and services would be measured through two indicators: "number of farmers reached with agricultural assets or services (gender-disaggregated) (CRI)"; and "percentage change in the average gross value of sales of beneficiary-IPOs".

B. Project Components

19. **The MIADP is a groundbreaking project for the Philippines through its specific focus and scale of support for ICCs/IPs in ancestral domains.** The project aims to support ICC/IP beneficiary-groups to move from subsistence farming to more organized, market-oriented production based on sustainable management and protection of natural resources within their ADs. The project supports investments in infrastructure and enterprise development, coupled with substantial technical, organizational and management support. The design includes special approaches and mechanisms consistent with the IPRA law and local customs.

20. **The design of the project has drawn on a wide range of experiences and lessons from within the Philippines and internationally.** In particular, the project design builds on the DA-LGU organizational and implementation arrangements of the ongoing World Bank-funded PRDP[25] which also supports ICC/IPs but does not specifically focus on ADs. Considerable staffing and operational synergies exist between MIADP and PRDP, and these are documented in the Project Operations Manual (POM). The project design also builds on experiences with supporting disadvantaged groups, IPs, and operating in situations of conflict, both internationally and in the Philippines.[26]

21. **The project would support ICCs/IPs that meet the eligibility criteria.** Target ICC/IPs must meet the eligibility criteria,

[24] Improved agriculture technologies include "climate smart agriculture technologies".
[25] Ibid
[26] Lessons and experiences have, in particular, been drawn from World Bank-financed National Community Driven Development Program (NCDD), and the Agrarian Reform Communities Development Projects (ARCDP 1 and 2), and the ADB/IFAD-financed First and Second Cordillera Highland Agricultural Resource Management Project (CHARMP), as well as the DA's Special Area for Agricultural Development (SAAD) Program.

namely: (a) an NCIP-approved or MIPA-approved (in the case of BARMM areas) Ancestral Domains Sustainable Development and Protection Plan (ADSDPP); (b) a Certificate of Ancestral Domain Title (CADT) issued by NCIP or a CADT issued by MIPA or an acceptable tenurial instrument supported by a cadastral survey and a certification from MIPA (in the case of BARMM areas); and (c) at least one IP organization (IPO) legally recognized by NCIP, and duly registered with an accredited government institution, namely Cooperative Development Authority (CDA), Securities and Exchange Commission (SEC), or the Department of Labor and Employment (DOLE); or at least one IPO legally recognized by MIPA, and duly registered with an accredited government institution, namely Cooperative and Social Enterprise Authority (CSEA), Securities and Exchange Commission (SEC), or the Ministry of Labor and Employment (MOLE) in the case of BARMM areas. At appraisal, out of the 130 ADs in Mindanao (excluding BARMM[27]), 52 met these eligibility criteria. There are three implementation readiness criteria to ensure that ICC/IPs are willing and have the capacity to participate in the project. Firstly, the government must not classify the AD as an active conflict area[28] or protected and forest areas; secondly, the responsible LGUs have provided a resolution confirming their support for MIADP; and lastly, an Ancestral Domain Agricultural Implementation Framework (ADAIF) would have been approved by the Indigenous Peoples Structures (IPS) and endorsed by NCIP and the DA. The project expects to support about 26 ADs, with an indicative goal of 3-5 ADs in each of Mindanao's five regions and 1-3 ADs in BARMM. These indicative goals account for the considerable time required for IPO strengthening; the formulation of the ADAIF[29]; the preparation of Enterprise and Infrastructure Concept Proposals, subproject design and implementation; and the available budget. For project start-up, 10 ADs were initially identified as meeting the implementation readiness criteria. They encompass two ADs each in Regions 9, 10, 11, 12 and 13.

22. **As the project would be implemented in Ancestral Domains, the validation process prescribed in the national government's FPIC guidelines would be applied[30].** This validation process is prescribed for foreign-assisted government projects to ensure, among others, the voluntary participation of indigenous communities and their awareness and approval of project-related responsibilities and obligations. As per the law, and to ensure transparency and cultural appropriateness, stakeholder engagement activities in respective ADs would involve the relevant government partners (NCIP or MIPA/Ministry of Environment, Natural Resources and Energy (MENRE)). Consultation and participatory processes would also follow the indigenous political and decision-making structures of the concerned ICCs/IPs. Institutional arrangements for the validation process would be detailed in the Memorandum of Agreement (MOA) between the DA and NCIP, as well as between DA and the Ministry of Agriculture, Fisheries and Agrarian Reform (MAFAR), MIPA and MENRE[31], and detailed in the POM.

23. **The project would provide opportunities to facilitate and improve participation of women through the project supported activities and investments**. This would be done within the ICC/IP cultural setting specific to each of the ADs. The approach would follow and be aligned with the broader sectoral goal of DA, which in accordance with Republic Act 9710 (Magna Carta of Women), has required all its offices to make gender and development an integral part of their planning, budgeting and implementation processes. An increase in the roles of women in the agriculture sector is also one of the four priorities of the World Bank's Philippines Country Gender Action Plan for FY20-24.

[27] BARMM participation in the project is expected to commence in the second year of the project.

[28] The Department of National Defense has the responsibility for monitoring and classifying areas as "active conflict areas". In BARMM it is the Ministry of Public Order and Safety, and the Ministry of Interior and Local Government.

[29] The ADAIF is the main planning instrument through which subproject investments would be identified and prioritized under the project. It is a key output of Component 1. The ADAIF is the only new instrument introduced under the project. It provides a distillation of the agricultural plans and priorities for each AD as defined in the ADSDPP. The ADAIF is designed to provide additional detail to understand and validate the edaphic and climatic suitability of the agricultural products to be produced and infrastructure to be installed in each AD, along with the IPOs involved and their product market prospects.

[30] Ibid

[31] The MOA between the DA and NCIP would be signed within three months of loan effectiveness. The MOA between DA and MAFAR, MIPA and MENRE would be signed prior to the commencement of any project activity in BARMM.

According to a 2019 gender gap study, in the Philippines three quarters of those employed in agriculture are men while only one quarter are women. Rural women are underutilized in productive work and shoulder a large share of the unpaid care work. They also have limited access to land, credit, skills, technology, and other productive resources. Women are also less likely to receive extension services, as they are not recognized as agricultural producers. Similarly, women are also less integrated in value chains than men. Their lack of mobility and access to markets, reinforced by social norms, prevent them from accessing buyers, suppliers, and other actors in the chain. In agriculture value chains, women are predominantly active in subsistence economy and food for family consumption, whereas men primarily focus on cash crops.

24. **The quantitative data covering the ICCs/IPs are lacking and there is also very little data available on barriers to participation and agri-fishery productivity within ICCs/IPs in the ADs.** The lack of basic information and data on IPs in the Philippines is perennially acknowledged, even after 20 years since the IPRA was passed. It is even more difficult to find data and information on the gender dimension of agriculture and related enterprises in ICCs/IP communities. Community consultations, key informant interviews, and review of available literature and sample ADSDPPs found close to no evidence on the different barriers to participation and productivity in agriculture within IP communities, especially those in Mindanao.

25. **An initial focus of the project would therefore be to collect gender-disaggregated data at the AD level that would help articulate priority needs and design effective responses to boost women's productive participation in the project.** Detailed gender-disaggregated demographic, social, and agriculture-related data is important to inform effective implementation of the project, and to identify priority actions to support the participation and benefits for women. In view of these, under Component 1, ICCs/IPs would participate in the collection of data designed to enable a better understanding of the roles, priorities and opportunities for men and women within ICC/IP communities. The information would be collected as part of the project M&E and integral to the identification of infrastructure and enterprise investments to be identified and prioritized through the ADAIF preparation process. This would be monitored as one of the intermediate results indicators under Component 1 (i.e., number of target ADs which gathered and analyzed gender-disaggregated data as part of the ADAIF and other tools for social preparation). The database, which is to be maintained by DA would also help improve the tailoring of support for other ICCs/IPs to ensure inclusivity.

26. **The project would also specifically seek to expand opportunities for women through the agri-fishery investment activities that emanate from the ADAIF.** In particular, opportunities for engagement of women both in leadership and support roles would be identified in developing Business Plans of the IPOs that would be supported under the project to develop, or expand, micro/small agri-fishery based, enterprises. The project would provide targeted technical assistance for women based on their identified needs which may differ across ADs. This among others, could include mentoring on Enterprise Business Plan preparation, agricultural and fisheries technology, functional literacy, enterprise management, and marketing. Given the multiple roles and tasks of women, the capacity building activities would be scheduled based on the women's availability, as well as provision of community childcare support during the conduct of such activities. Given this focus, the third PDO indicator is included with a target of 45 percent women beneficiaries (i.e., female farmers reached with agricultural assets or services). Additionally, under Component 3, the project would seek to achieve at least 10 percent of the supported IPO enterprises being led by women (i.e., percentage of Business Plans approved and implemented that are led by women). These targets would be revisited during project implementation as the gender disaggregated data becomes available, and with a view to ensuring the inclusivity of women in all aspects of the project.

27. **The project would support a range of climate adaptation and mitigation measures expected to generate significant climate co-benefits, as detailed in Annex 5.** It would contribute to developing a more climate- and disaster-resilient

agricultural sector, which is a priority of the National Climate Change Action Plan 2011-28. Climate-smart agricultural and fishery technologies would be introduced to IP producer groups. Infrastructure would be built to climate-proof standards.[32]

28. **The project has four interlinked components and would follow a phased approach to allow learning-by-doing.** This approach would be particularly important considering the limited data available for ADs. The first year of implementation would focus on social preparation, consultation, planning, and institutional strengthening for a first batch of around 10 ADs (excluding BARMM) under Component 1. Infrastructure (Component 2) and enterprise development (Component 3) subprojects would be designed and prioritized based on these preparatory activities. From the second year onwards, LGUs and IPOs in the first batch of ADs would implement their subprojects, while the preparatory activities for the second batch of ADs would begin (including BARMM). The infrastructure subprojects would be designed to complement enterprise subprojects through investments in small-scale irrigation and improved market access, post-harvest storage and handling facilities. Annex 2 details the project design and the initially selected IP communities. Annex 3 describes the project's environmental and social risk management.

29. **Building on the accumulated experiences of the ongoing PRDP, the project would adopt a conflict-sensitive approach**. By design, the project would exclude any ADs in an active conflict situation, one of the implementation readiness criteria is "the AD is not classified by the government as an active conflict area". The project would conduct due diligence by following a phased approach to allow adequate time for assessment of conflict sensitivity and dynamics, and for confirmation with respective LGUs on their "no active conflict" status. At appraisal, through a verification process with LGUs, 10 ADs were confirmed to have no area under an active conflict, and project implementation would likely start in these areas (Annex 2: Table A2.2). These 10 IP communities are relatively peaceful and stable, increasing the likelihood of project success and enabling lessons and experiences to be applied to succeeding IP communities. Under Component 1, a brief analysis of the conflict in the communities would be undertaken as background information. This analysis would include identifying mitigation factors, resilience and peace enablers, and mapping the political and economic situation in the selected communities. The findings of this analysis would be reflected in communications and stakeholder engagement strategies to ensure that activities go beyond 'doing no harm' and actively seek to address grievances, include marginalized groups, and build social cohesion and resilience.

30. **Specific responsibility for monitoring and initiating action in the event of armed conflict would be through the Social & Environmental Safeguards (SES) Unit.** The screening and assessment process is included in the Environmental and Social Management Framework (ESMF), and mitigation measures are in the Environmental and Social Management Plan (ESMP). DA would enter an MOA with respective LGUs that include the necessary safety and security protocols. Implementation Management Agreements (IMAs) between the DA and LGUs for each subproject would also include road safety and traffic management measures. Such protocols would be anchored in Indigenous socio-economic systems for reconciliation, available LGU structures such as Municipal/Barangay Peace and Order Committees, and conflict mediation mechanisms derived from the considerable experience of DA with similar cases. In case of activity suspension due to intensified conflicts, the project would continue to use the remote monitoring systems developed by PRDP through GIS-enabled cameras, and by using satellite maps, as well as regular communication with concerned LGUs. These security procedures, which include provisions for suspending work/contracts, are detailed in the POM and provided in the bidding documents under the World Bank's Procurement Regulations. After signing the MOAs with the LGUs, the security and safety protocols would be

[32] The project would adopt the climate-proofed technical planning parameters for rural infrastructure. These standards include DPWH Department Order No. 112 (series of 2019), DPWH Department Administrative Order No. 16 (s. 2020), and Philippine National Standard for Agricultural Infrastructures - Farm-to -Market Roads - Concrete Roads (PNS/BAFS PABES 2892019), among others.

continuously updated to ensure that the preparation and response are calibrated according to the community's security risks and conflict status during project implementation.

Component 1: Ancestral Domain Planning and Social Preparation (US$12.5 million, of which IBRD is US$10 million)

31. This component would lay the groundwork for Components 2 and 3, through (a) a preparatory phase, expected to take one to three months before the commencement of work within ADs; and (b) a subsequent social preparation phase, a process expected to take at least six months upon formal entry into each AD. Component 1 is primarily assigned for the GCRF's Pillar 4: Strengthening Policies, Institutions and Investments for Rebuilding Better, by strengthening ICC/IPs' planning capacity and their institutions to better respond to future crises.

32. The preparatory phase would include hiring Development Facilitators and Technical Service Providers (TSPs) and financing AD-level consultation workshops, training and community activities. These activities would be held to: (a) undertake the initial contact with the IPS in each AD to confirm their interest and eligibility to participate in the project; (b) conduct of a brief analysis of the conflict and how it affects the selected communities, identifying peace enablers and mitigation strategies and a political mapping of the political economy situation in the community; (c) develop and implement a communication plan including conduct of project orientation and awareness raising events to inform all stakeholders[33] of the project's goals, sequencing of activities, roles and responsibilities; (d) sign MOAs between the DA and the concerned LGU(s) confirming their roles and support for the project; and (e) capacity building and training on climate-smart value chain development for Development Facilitators, TSPs, DA and LGU staff and other stakeholders.

33. The Social Preparation phase would encompass a range of activities that would lead to the formulation of the ADAIF and the sub-subject Concept Proposals. It starts from the initial consultation with the Indigenous Peoples Structure (IPS), through data collection and science-based planning, to the formulation of the ADAIF. The ADAIF would be derived from the ADSDPPs of the participating ICCs/IPs and developed through a participatory process to ensure it is aligned with the ADSDPP development vision while also operationally responsive to the emerging challenges faced by the ICCs/IPs. Particular attention would be given to providing training in appropriate adaptation and mitigation measures, such as climate-resilient rural infrastructure and climate-smart practices, e.g., use of drought-tolerant varieties, greenhouses, crop diversification, integrated pest management, drip irrigation, construction of rain shelters, and energy-efficient equipment. Based on the priorities identified in the ADAIF, subproject Concept Proposals would be prepared for further consideration/support under Components 2 and 3.

34. Among others, activities including workshops, training, data collection, value chain analyses would be financed. Activities to be financed would include: (a) workshops, and training to build organizational and planning skills and market orientation for ICCs/IPs and IPOs for potential enterprise support under Component 3; (b) preliminary social investigation and collection of baseline data, including gender-disaggregated data collection on the ICCs and existing IPOs, as critical inputs to the preparation of the ADAIF (to be done in a participatory manner and in conjunction with the M&E team-Component 4); (c) preparation of value chain analyses (VCAs) and expanded Vulnerability and Suitability Analyses (eVSAs)[34] to establish the suitability and climate risk vulnerability of commodities and

[33] Key stakeholders, apart from the ICCs/IPs, would include DA agencies/bureaus, local government units, state universities and colleges, other national government agencies, NGOs and private sector interests.

[34] Value Chain Analysis (VCA) is a tool now widely used by the Department of Agriculture to analyse the linkages and gaps from production through marketing, logistics, processing and ultimate sale to the consumer. The expanded Vulnerability and Suitability Analysis (eVSA) is a GIS-based tool that takes into account the combined analysis of vulnerability and suitability as well as socio-economic conditions of a particular area. The information is used to enhance targeting of interventions and strategies that enhance climate resilience of production and investments.

infrastructure being proposed in the ADAIF; (d) preparation of Subproject Concept Proposals based on the ADAIF, which would provide the basis for support under Components 2 (Infrastructure) and 3 (Enterprises) with IPS approval; (e) training on climate information systems, climate risks, and climate smart options, along with training on adaptation and mitigation measures enabling more climate-resilient agricultural development; (f) technical assistance to strengthen IPO entities, including their registration and development of alliances with cooperatives, businesses, and NGOs outside the ADs; and (g) transport and related logistical support, given the remoteness of many ADs. Development Facilitators, TSPs, DA and LGU staff would undertake the Social Preparation activities. NCIP and BARMM (MIPA, MAFAR and MENRE) would be integrally involved in each step. As previously described, the requirements for FPIC would be observed as per NCIP Administrative Order No. 3 (series of 2012).

Component 2: Resilient Ancestral Domain Agri-Fisheries Infrastructure (US$80.19 million, of which IBRD is US$64.16 million)

35. This component aims to increase the resilience of ADs by strengthening the commodity value chain infrastructure, including access to markets. It would finance subgrants to LGUs for infrastructure subprojects as identified in the ADAIF and provide technical assistance for implementation. Investments to be supported would include (a) rehabilitation and repair of roads and bridges (i.e., single lane bridge and suspension footbridge) connecting the ADs to market centers[35]; (b) rehabilitation and repair of access roads (one-lane and two-lane) between agricultural areas and sitios[36] in the AD; (c) new and rehabilitation of agricultural tramline systems; (d) small-scale and solar-powered irrigation systems, i.e., spring water development and hydraulic ram pumps; (e) construction or rehabilitation of potable water systems (Levels 1 and 2)[37] using energy-efficient and climate-resilient systems; and (f) post-harvest infrastructure for agriculture and fisheries (e.g., storage facilities and trading posts). Component 2 is primarily assigned for the GCRF's Pillar 1: Responding to Food Insecurity, by enhancing food security of subsistence level ICC/IPs in ADs.

36. The subprojects would be co-financed by the loan proceeds, DA counterpart funds, and LGU counterpart funds. These would be based on an 80:10:10 ratio[38] and implemented by the LGUs. The project would adopt a framework for climate-resilient infrastructure mainstreaming that aligns with the updated Department of Public Works and Highways (DPWH) Design Guidelines, Criteria and Standards and the DA's Bureau of Agricultural and Fisheries Engineering (BAFE).[39] These standards provide climate-proofed technical planning parameters for rural infrastructure, such as climate-resilient tire tracks and access roads, use of extreme weather-resistant materials, and wider drains and culverts to accommodate heavy precipitation. This component would also support some facilitation by TSPs, although LGU engineering staff would likely provide most of the technical design and implementation support.

Component 3: Ancestral Domain Agri-Fisheries Production and Enterprise Development (US$20.52 million, of which IBRD is US$16.41 million)

[35] Infrastructure would consist mostly of small-scale civil works constructed within the AD, except in the case of access roads where extension beyond the AD would be required to link with a connecting road.

[36] A barangay is the smallest political unit in the country. A sitio in the Philippines is a territorial enclave that forms part of a barangay.

[37] Potable water includes Level 1 and 2 systems with a communal water point, such as a borewell or spring system, serving an average of 4-6 households within a 25-meter distance.

[38] Co-financing mirrors the cost-sharing arrangement under the approved PRDP Second Additional Financing (PRDP-AF2).

[39] These standards include DPWH Department Order No. 112 (s. 2019), DPWH Department Administrative Order No. 16 (s. 2020), and Philippine National Standard for Agricultural Infrastructures - Farm-to -Market Roads - Concrete Roads (PNS/BAFS PABES 2892019), among others.

37. This component would support registered IPOs identified in the ADAIF to develop agri-fishery enterprises. It would integrate natural resource management, climate-smart agriculture (CSA) practices, conflict sensitivity approaches, and Indigenous knowledge systems and practices to ensure investment sustainability and to build climate resilience. Subgrants for registered IPOs would be provided for subprojects designed to strengthen climate-resilient input supply, production, postharvest operations, consolidation/assembly, and/or processing. Technical assistance for such IPOs would be provided in: (a) financial literacy, accounting, procurement, conflict sensitivity, preparation and implementation of climate-informed business plans; (b) CSA practices including use of drought-resistant seeds, greenhouses, crop diversification, integrated pest management, drip irrigation, construction of rain shelters, use of energy-efficient machinery, post-harvest handling, storage, marketing, and processing. These could encompass solar dryers, climate-resilient warehouses, trading posts, and use of small refrigeration equipment and proper packaging to reduce food loss and waste; (c) field demonstrations for CSA and fisheries practices and technologies including access to weather-related information; and (d) access to finance/credit, markets, and services, and the formation of public-private partnerships. Component 3 is primarily assigned for the GCRF's Pillar 1: Responding to Food Insecurity, by enhancing food security of subsistence level ICC/IPs in ADs.

38. The subprojects would be co-financed by loan proceeds, DA counterpart funds, LGU counterpart funds, and IPO contributions at a ratio of 80:10:10, with the IPO contribution mostly in kind.[40] IPOs would implement the subprojects.[41] Experiences under the PRDP and preliminary ADAIFs indicate that subprojects would be mostly micro (under PhP3 million) or small-scale (PhP3-15 million). Financing support for both start-up and expansion activities of registered IPO enterprises[42] would be based on several factors, i.e., IPO enterprise financial viability; market opportunities; integration of natural resource management; conflict sensitivity; CSA linkages with Indigenous knowledge, systems, and practices. TSPs would be contracted to complement support from DA-Regional Field Offices (RFOs) and LGUs, and to facilitate linkages with other food security programs, e.g., DA's Commodity Programs.

Component 4: Project Management and Support, Monitoring, and Evaluation (US$11.79 million, of which IBRD is US$9.43 million)

39. This component would finance technical and operational support for project oversight and management, including staffing, office, logistical and administrative requirements. Beyond standard project management support-financial management, procurement, environment and social impact management, MIS and monitoring and evaluation (M&E)-specific support would be provided for geotagging and geo-mapping, information advocacy, communication and education, knowledge management, grievance redress, and conflict sensitivity. Component 4 is primarily assigned for the GCRF's Pillar 1: Responding to Food Insecurity, by enhancing food security of subsistence level ICC/IPs in ADs.

40. As detailed in Annex 2, the project would build upon the existing organizational, staffing and administrative protocols and procedures under the DA and that have been mainstreamed through PRDP. As such, significant staffing, administrative, and MIS/M&E synergies with PRDP would be achieved in undertaking the project management, administrative, and technical functions of MIADP. Additional staff would be hired as required. In addition, given the

[40] Enterprise subprojects would use a cost-sharing arrangement of 80:10:10 (loan proceeds, DA counterpart and LGU counterpart). In addition, a differentiated approach would be used for the IPO counterpart contribution in line with the Commission on Audit (COA) Circulars 2007-001 and 2012-001 and would depend on the size of the subproject grant, as further described in the POM. NGOs and other sources of funds would be encouraged to also provide funds to finance the IPO business plans.

[41] IPS-recognized IPOs that have some non-IP members would be eligible for support under the project.

[42] To receive funds, an IPO must be registered as a financial entity with any of the following agencies: Cooperative Development Authority (CDA), Securities and Exchange Commission (SEC), or the Department of Labor and Employment; or Cooperative and Social Enterprise Authority (CSEA), Securities and Exchange Commission (SEC), or the Ministry of Labor and Employment for BARMM areas.

importance of conflict sensitivity, experts in fragility conflict and violence would be hired as needed.

Component 5. Contingent Emergency Response (zero allocation)

41. A Contingent Emergency Response Component (CERC) is an *ex-ante* mechanism available to the government to gain rapid access to financing to respond to an eligible crisis or emergency. This component would allow for rapid reallocation of uncommitted project funds towards urgent needs in the event of a disaster (geophysical, climate-related, or man-made) or public health emergency. Such events may include typhoons, floods, earthquakes, volcanic eruptions, droughts, and disease outbreaks. There is flexibility in establishing the level of evidence needed to activate this component, including, but not limited to, the declaration of a State of Calamity by the mandated national or subnational authority or a State of Public Health Emergency. The agreed trigger would enable the reallocation of uncommitted project funds to support immediate response and recovery needs from other project components. Disbursements would be made against a positive list of critical goods, and civil works, required to support the immediate response and recovery needs. The potential CERC-financed activities would: (a) align with the main project activities; (b) follow the project's implementation arrangements; and (c) be based on DA's mandate under the various emergency response and contingency plans. The POM would include detailed descriptions and procedures.

Project Costs

42. The overall cost of the proposed project is estimated at US$125 million to be implemented over six years. The cost comprises an IBRD loan of US$100 million and the government counterpart (DA and LGUs) contribution of US$25 million, as summarized in Table 1.

Table 1: Summary of Project Cost (in US$ million)

Component	Total	IBRD	GOP	
			DA	LGU
Component 1: Ancestral Domain Planning and Social Preparation	12.5	10	2.5	0
Component 2: Resilient Ancestral Domain Agri-Fisheries Infrastructure	80.19	64.16	8.90	7.14
Component 3: Ancestral Domain Agri-Fisheries Production and Enterprise Development	20.52	16.41	2.52	1.58
Component 4: Project Management and Support, Monitoring and Evaluation	11.79	9.43	2.36	0
Component 5: Contingent Emergency Response Component	0	0	0	0
Total	**125**	**100**	**16.28**	**8.72**

C. Project Beneficiaries

43. **Direct project beneficiaries would be ICCs/IPs, IPOs, and their households in the project ADs**. The project aims to cover 26 ADs, with about 1-3 ADs in BARMM. The project beneficiaries are among the poorest and most vulnerable

in the country. They would include some 120,000 farmers and fisherfolks reached with agricultural assets or services. Of these, women beneficiary participation is targeted at 45 percent (54,000). Around 80 IPOs would be supported, encompassing around 60,000 farmers and fisherfolks expected to adopt improved agricultural technologies, with a target of 45 percent (27,000) women's participation, which would be re-confirmed once gender-disaggregated data are available. IPOs eligible for support under the project may include some migrant members. Indirect beneficiaries of the infrastructure projects under Component 2 and enterprise subprojects under Component 3 would include both indirect beneficiary ICCs/IPs and non-IP migrants living in the ADs. Other beneficiaries would include enterprises and vendors outside the ADs that can enhance their businesses through the improved access and market linkages developed through project interventions.

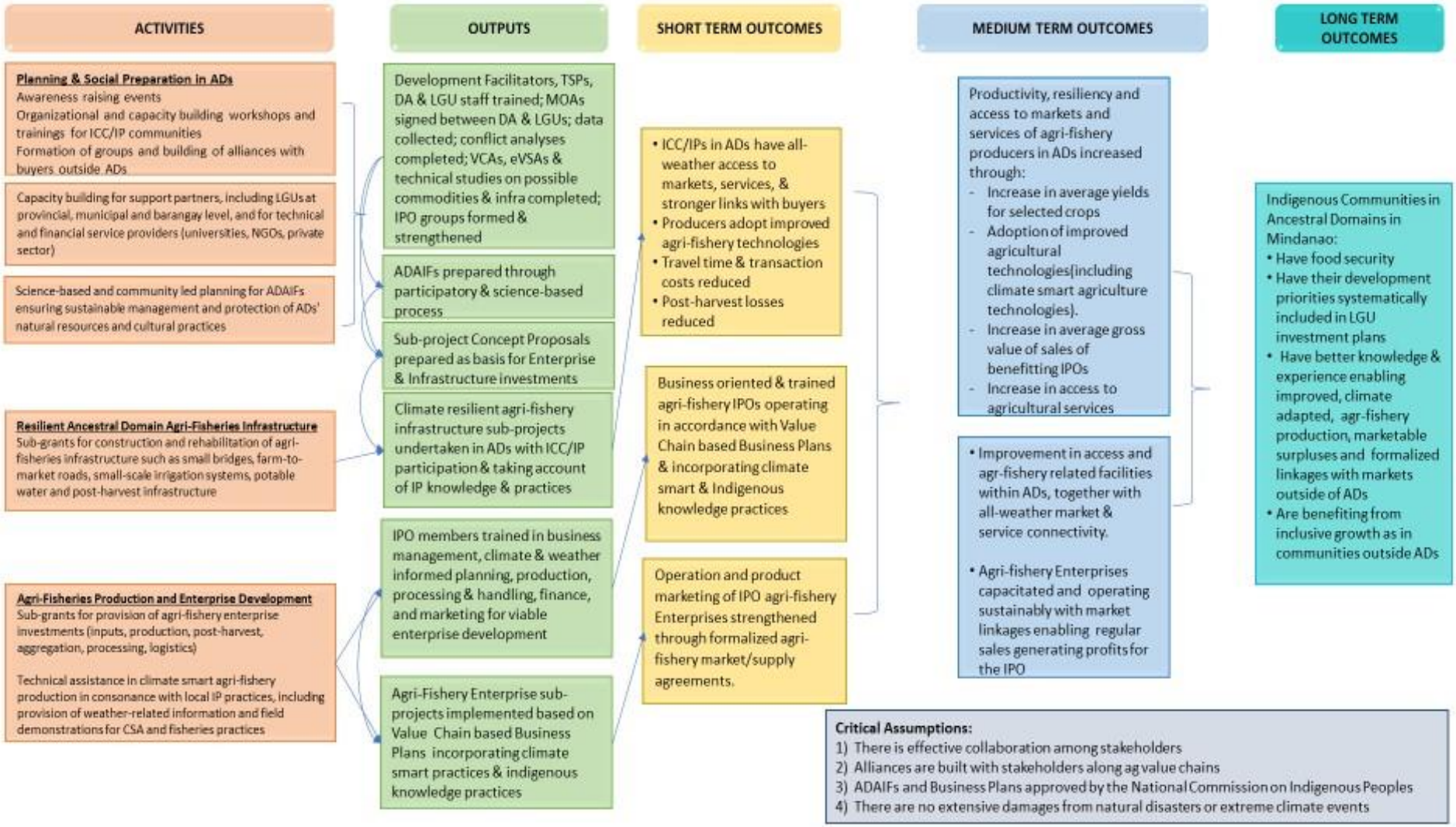
44. **Project interventions would directly address gender issues**. Investments in infrastructure would improve all-weather road access and facilitate women's access to health care, childbirth facilities and hospitals, social services, and education. Prioritizing support to women's groups and associated skills training could expand economic opportunities for women, improving household incomes and women's welfare.

D. Results Chain

45. The pathways through which the planned investments would contribute to the desired outcomes are illustrated in Figure 1. The project would address the key constraints that have led to pervasive poverty, lack of employment opportunities, and food insecurity across the ADs of Mindanao. Activities would support ICC/IP group formation, capacity building, science-based planning, and investments in public infrastructure and agri-fishery enterprise development. Through these interventions, the project would seek to sustainably increase agricultural productivity and access to markets and services for IPOs. Full participation of ICCs/IPs is central to the project's design, as are the requirements for ensuring that the FPIC is observed, along with respect for cultural heritage and Indigenous knowledge, systems and practices.

46. The long-term outcomes would be: (a) improved agri-fishery productivity; (b) sustained inclusive growth; (c) peace and stability through more inclusive growth; and (d) institutionalization of processes through which investment priorities of ICCs/IPs in ADs are incorporated into LGU investment planning processes.

Figure 1: Theory of Change



E. Rationale for Bank Involvement and the Role of Partners

47. **The project seeks to reduce pervasive poverty among the IPs of Mindanao and respond to the government's goal of an inclusive, post-COVID-19 economic recovery.** While the ongoing PRDP provides a strong technical and administrative basis for implementing MIADP, the rationale for a separate project stems from the need for a different approach for ICCs/IPs in ADs affected by conflict under the IPRA Law and the BOL.[43] The project would also complement other multilateral, bilateral, and World Bank interventions in Mindanao that promote more inclusive growth. These interventions include the Philippines National Community Driven Development Project (NCDDP, P127741), the Philippines COVID-19 Emergency Response Project (P173877), the Beneficiary FIRST Social Protection Project (P174066), and the Philippines Multisectoral Nutrition Project (P175493).

F. Lessons Learned and Reflected in the Project Design

48. **Lessons and experiences have been drawn from projects that have supported IPs, often in areas subject to periodic conflict.** Key lessons include the importance of: (a) implementing a communication program to ensure all parties understand the plans and mechanisms for providing regular feedback; (b) ensuring genuine community participation and FPIC in the selection and prioritization of investments; (c) ensuring the involvement of all stakeholders from the outset of the project, which in the case of MIADP includes DA, NCIP, BARMM (MAFAR, MIPA and MENRE), the concerned LGUs and IPOs; (d) procedures to be followed in cases of active conflict; and (e) ensuring prompt attention to the resolution of grievances. Annex 3 details how these lessons have been incorporated into the project design.

49. **The project implementation design has benefited extensively from some 20 years of experience implementing the earlier Mindanao Rural Development Projects (MRDP 1 and 2) and the ongoing PRDP.** Lessons include[44]: (a) for small/micro (IPO) enterprises, the business planning process needs to be simplified; (b) the time required to form/strengthen peoples' organizations and develop enterprises is substantial, such that the number of enterprises targeted for support should be modest; (c) access to financing for micro-enterprises through formal channels is very limited, so grant financing is needed to overcome this market failure; (d) cost-sharing arrangements between the DA and LGUs for enterprise support needs to be streamlined; (e) a first-come, first-served approach for eligible beneficiaries facilitates subproject start-up and learning by doing, with prioritization possible at a later stage in implementation based on the level of demand; (f) the provision of infrastructure, particularly rural roads, to improve access would likely be in high demand and provide considerable project benefits; (g) sustainability of infrastructure investments and outcome impact is enhanced through the established DA-LGU Implementation Management Agreement (IMA), which includes operations and maintenance (O&M) performance linked with continued project support; and (h) the institutional capacity needed to implement the enterprise and infrastructure interventions is substantial and a factor considered in the design of MIADP through its integration with the staffing, technical, administrative, and MIS/M&E institutional arrangements of PRDP.

III. IMPLEMENTATION ARRANGEMENTS

[43] Key differences between MIADP and PRDP include: (a) the need for NCIP/BARMM (MAFAR, MIPA and MENRE) participation and endorsement of processes and investment decisions; (b) the smaller-scale and greater support that would be needed for enterprises operated by IPOs; (c) value chain interventions that include rice and corn (excluded under PRDP); (d) the need to carefully integrate indigenous knowledge, systems, and practices (IKSP) with new climate-smart technologies; and (e) the imperative of ensuring that subprojects are conflict-sensitive or contribute to strengthening peace and stability in the selected communities.

[44] PRDP: Interim Implementation Completion Report (ICRR0022589).

A. Institutional and Implementation Arrangements

50. **The project would be under the direct supervision of the DA Secretary through his designated Official at the national level.** The DA Special Projects Coordination and Management Assistance Division (SPCMAD) at the DA Central Office would provide technical support, coordination and reporting to the government's oversight agencies and the World Bank. A MIADP Advisory Board (MAB) including NCIP would be established to provide policy guidance and oversight for project implementation. It would be established no later than three months after loan effectiveness and chaired by the Secretary of Agriculture or a person designated by the Secretary of Agriculture. The PSO would provide secretariat support to the MAB. A detailed description of the institutional arrangements is elaborated in Annex 1.

51. **Day-to-day project management would be through the existing PRDP- Project Support Office (PSO) for Mindanao, under the direction of the Regional Executive Director of the Regional Field Office (RFO) 11, who serves as Project Director** (Annex 1, Figure A1.1 provides the organization chart). A Deputy Project Director for MIADP would also be designated.

52. **The RFOs would be responsible for field-level implementation, coordination, and monitoring.** This would be through their existing Regional Project Coordination Offices (RPCOs), which were established within RFOs with specific responsibility for implementing the components of PRDP. RPCO Component/Units Heads would provide the day-to-day management for each MIADP component. Existing Regional Project Advisory Boards (RPABs) of the PRDP, chaired by the Regional Executive Director and including a regional NCIP representative, would be responsible for approving subprojects and guiding and facilitating project implementation in each of the five Mindanao regions (Regions 9, 10, 11, 12 and 13) and BARMM. RPCOs would provide secretariat support to the RPABs.

53. **The DA and NCIP would sign a MOA.** This would set out the agreed arrangements for NCIP to support project implementation, under terms and conditions acceptable to the Bank. It is to be signed within three months of loan effectiveness.

54. **At the local government unit level, respective Provincial/Municipal/City Project Management and Implementation Unit (PPMIU, MPMIU and CPMIU) would be established in accordance with the MOA between the DA and the LGU as well as in accordance with an IMA for each subproject.** This is a procedure mainstreamed under PRDP. MOAs would be signed on a rolling basis, and prior to the commencement of any project activity at local levels, a MOA will be entered into between the DA and LGU. Such agreements provide for the provision of technical assistance, financing, implementation/construction, and O&M. Provincial Commodity Investment Plans (PCIPs) would serve as the joint DA-LGU planning instrument for co-financing with the LGUs, and as the convergence platform through which other government agencies and the private sector would provide complementary support. Subproject Enterprise Investment Agreements would be entered by the LGU and the IPO to specify the roles, responsibilities, accountabilities and procedures for each enterprise subproject.

55. **In BARMM, while DA remains responsible for overall project implementation, the other institutions involved in implementing project activities would be Ministry of Agriculture, Fisheries and Agrarian Reform (MAFAR) together with Ministry of Indigenous Peoples' Affairs (MIPA) and Ministry of Environment, Natural Resources and Energy (MENRE).** The implementation arrangements would adopt the existing institutional arrangements for implementing PRDP with a view to implementation commencing in the project's second year. Prior to the commencement of any project activity in BARMM, the DA, shall enter into a MOA with MAFAR, MIPA and MENRE setting out the implementation arrangements for carrying out of relevant project activities in BARMM, under terms and conditions satisfactory to the Bank.

56. **Instruments for implementing the project would be based on those already mainstreamed in the DA.** However, the criteria and processes would be simplified to reflect the smaller scale of the supported activities and the limited capacity and skills of the IPOs. Modifications would also reflect the additional procedures in keeping with the IPRA, 1997 and Bangsamoro Organic Law (BOL) requirements. The ADAIF would be the only new instrument introduced under the project. It would distill the ADSDPP's agricultural plans and priorities for each domain and provide additional details to understand and validate the agricultural products' agro-ecological and climatic suitability. Similarly, the ADAIF would validate the suitability of the proposed infrastructure in each AD, the IPOs involved, and updated product market prospects. As earlier noted, the project would support ICCs/IPs in ADs meeting the implementation readiness criteria on a first-come, first-served basis. Implementation procedures are elaborated in the MIADP-POM[45] and build upon the processes mainstreamed in the DA through PRDP.

B. Results Monitoring and Evaluation Arrangements

57. **The Results Framework describes the PDO-level outcome indicators, component-specific intermediate results indicators, and their respective baselines and targets.** Results-based M&E arrangements and responsibilities will be similar to and integrated with those institutionalized under PRDP. The PRDP system has proven to be an effective mechanism for decision-making and strengthening and mainstreaming operational guidelines. Information derived from the MIS/M&E system will be consolidated into semi-annual and annual progress reports. Baseline, mid-term, and completion surveys and analyses, along with other online and digital tools developed through the PRDP, would complement these reports. These include: (a) Rapid Appraisal of Emerging Benefits (RAEB), an instrument for obtaining real-time feedback on benefits of subproject investments upon their completion; (b) a web-based grievance redress mechanism (GRM), complementing the LGU-GRM reporting/resolution processes required under the project; (c) an Operation and Finance Information System (OPIS); and (d) geotagging and use of drones for subproject monitoring. The use of drones under the project abides by the General UAV Operations Requirements of the Civil Aviation Authority of the Philippines (CAAP) as stipulated in the CAAP Memorandum Circular 29-15 (series of 2015). The project's unmanned aerial vehicle (UAV) operation poses minimal risk to the local community, infrastructure, environment, and wildlife. Drone footage and imagery do not capture any personal information, and data gathered are solely used for project activities and stored in the project's database system. The drones would be operated by trained and certified staff and undertaken in coordination and with clearance from the LGUs and IPs. It would also operate only in areas where project investments will be constructed or rehabilitated, which include commodity production/farm areas and infrastructure subproject influence areas with elevation levels that do not go beyond 18-degree slopes. The project also does not operate in conservation and protected areas. Since the drones are small (4 kilograms and below), the noise created would be minor. Further details on the use of UAVs are provided in the POM.

C. Sustainability

58. **The project, while modest in size relative to the number and area of ADs across Mindanao, is designed to substantially impact beneficiary ICCs/IPs while developing a scalable approach to promote sustainable CSA development in other ADs across the country.** The project's integration with the already mainstreamed institutional mechanisms shown to be effective under PRDP would enhance the sustainability of project investments and

[45] The MIADP-Project Operation Manual (MIADP-POM) comprises separate Operation Manual sections to facilitate implementation. These cover the project's five components, Environment and Social Safeguards (ESS), Monitoring & Evaluation (M&E), Procurement, and Financial Management. These are living documents and would be revised as mutually agreed between the Bank and the Borrower as implementation experience evolves.

approaches. Additionally, by drawing upon the ADSDPP as the basis for investment planning through the ADAIF, the project design provides for existing ICC/IP planning processes to be integrated with broader agriculture and fishery sector development strategies. The ADAIF would provide the instrument for ICC/IP plans and investment priorities to be integrated with the LGUs' Local Development Investment Programs and Annual Investment Programs. This linkage through which funding commitments from LGUs are secured, has been missing in the past, resulting in limited actual investments in ADs despite LGUs' expressions of commitment.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic, and Financial Analysis

59. **The project expects to produce substantial economic benefits.** This would be through: (a) support for the start-up and expansion of IPO enterprises that offer a sustainable means for increasing incomes and employment opportunities; (b) rehabilitation/construction of rural roads, access tracks and tramlines linking ICC/IP communities with the national road network, enabling access to markets, enhancing employment opportunities, reducing time to reach health centers, and extending health and services to otherwise inaccessible areas; (c) construction of small-scale irrigation systems to improve agricultural production, productivity, and climate resilience through better water management and water availability; (d) installation of potable water systems that promote better health; (e) increased production of key commodities, which would enhance food security for ICCs/IPs and provide income through marketable surpluses and reduced post-harvest losses; and (f) strengthened economic and climate resiliency as a result of training in modern CSA practices, group organization, enterprise management, and digital technology to access and use market information.

60. **The Economic and Financial Analysis (EFA) is based on examples of interventions that could be implemented in selected ADs based on the ADSDPPs and early drafts of selected ADAIFs**. EFA results confirm that the IPs/IPOs would likely benefit financially and economically from the project's proposed infrastructure and enterprise interventions. The base scenario internal rate of return (IRR) for the project is 22.27 percent, with a net present value (NPV) of US$87.86 million and a benefit-cost ratio (BCR) of 1.32 (Annex 4). In the short term, the main gains would manifest as higher incomes for IPs/IPOs, obtained through higher yields and production, the improved value of marketable outputs, and reduced losses and transportation costs. With the combined support for relatively simple investments, capacity-building advice, and commodity-specific production and marketing training, MIADP could catalyze development in the selected ADs. Over the medium to long term, the prospective agri-fisheries enterprises modeled in the analysis would likely develop further and possibly realize economies of scale. These effects would increase the benefits to ICCs/IPs, IPOs, and the Philippine economy. A more detailed explanation of the methodology adopted for economic and financial analysis, including a sensitivity analysis, is provided in Annex 4.

61. The economic analysis incorporates the impact of greenhouse gas (GHG) emissions using a low and a high shadow price of carbon, following the World Bank's 2017 guidelines. With the infrastructure and enterprise interventions of the project, the total net carbon balance would average +7,564 tons of carbon dioxide equivalent (CO_2eq) emissions per year, corresponding to an estimated total of +151,280 tCO2eq emitted over the entire project life. Using estimates for low and high carbon price equal to US$43 and US$86, respectively, the project remains feasible with the analysis yielding a 21.83 percent IRR, an US$84.73 million NPV and a 1.31 BCR for the low estimate and a 21.38 percent IRR, an US$81.59 million NPV, and a 1.29 BCR for the high estimate.

62. **A solid technical basis exists for the infrastructure and enterprise investments under the project through some 20 years of experience in implementing the earlier MRDP 1 and 2 projects and the ongoing PRDP.** The project design

also builds on extensive social formation experience from various social projects internationally and in the Philippines, many with World Bank assistance, that have supported disadvantaged groups, including IPs and areas exposed to conflict.

63. **Public investments to support the country's most vulnerable population are justified due to equity considerations and market failures**. Through technical assistance, investments in public infrastructure and the establishment and expansion of IPO enterprises, the project would reduce vulnerability, while enabling project communities to shift away from pervasive and extreme poverty, exposure to periodic conflict, food insecurity, and poor access to services.

64. **The World Bank's long history of support for rural economic programs and working with marginalized communities provides a wealth of experience.** This history has enabled the World Bank to support the government and draw upon extensive international experience in environmental, social, technical, and fiduciary best practices, both for MIADP and to develop the approach and mechanisms for scaling up support for ICCs/IPs beyond the current project.

B. Fiduciary

(a) Financial Management

65. **The DA financial management (FM) systems have been assessed and found to meet the World Bank's requirements.** There is also a sufficient basis for relying on the country systems for all financial management aspects of the project. The overall financial management responsibility would be at the PSO level, supported by the DA's Financial Management Unit at the region hosting the PSO. In line with the government system, the key FM functions, which include the Budget Officer, Accounting Officer, and Treasurer, would be mainstreamed with the region hosting the PSO. In addition, FM staff would be hired or seconded to support the PSO in submitting quarterly unaudited interim financial reports (IFRs) and preparing annual financial reports. The audit report should be made available to the World Bank no later than six months after the end of each fiscal year. The project would follow the relevant internal controls and policies. The respective DA FM staff at all levels would review supporting documents for project disbursements. The project would follow the relevant internal controls and policies. The respective DA FM staff at all levels would review supporting documents for project disbursements. Based on the FM assessment conducted and with the implementation of the mitigation measures, the FM arrangements would satisfy the World Bank's minimum requirements. The FM risk and the corresponding risk mitigation measures are discussed in the risk section and Annex 1 provides further details.

(b) Procurement

66. **Applicable Procurement Framework.** All procurement of goods, works, and consulting and non-consulting services under the project would be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers (dated November 2020), and the provisions of the Loan Agreement and Procurement Plan. The project would be subject to the World Bank's Anti-Corruption Guidelines (October 15, 2006, revised in January 2011, and as of July 1, 2016). The project would use the Systematic Tracking of Exchanges in Procurement (STEP) to plan, record and track procurement transactions.

67. **Project Procurement Strategy for Development (PPSD) and Procurement Plan (PP).** The PPSD prepared by DA identifies the appropriate procurement approaches under the project. Based on the PPSD findings, a PP for the first 18 months of project implementation has been submitted to the Bank and agreed. It would be updated and subject to the Bank's prior approval annually, or as required during project implementation to reflect any substantial changes in the procurement approaches and methods.

68. Use of National Procurement Procedures. All contracts for goods, works and services to be procured in line with the national market approach shall follow the Philippines' National Procurement Procedures (NPP) set out in the Philippines' Government Procurement Reform Act (Republic Act 9184). These have been assessed and found to be broadly consistent with the World Bank Procurement Regulation requirements (Section V – Paragraph 5.4, NPP), subject to a few conditions specified in the PPSD and the PP.

69. The main procurement entities under the project would be the LGUs, with DA RFO's also doing minor procurement of mostly TA's and goods. The procurement capacity assessment by the World Bank has been completed and the PPSD by DA has been completed. The documents identify/confirm the key risks that may impact procurement under the project along with the recommended mitigation measures, which are listed under the Fiduciary Risk section. Further details of the procurement arrangements are provided in Annex 1.

C. Legal Operational Policies

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

D. Environmental and Social

70. **The project would support ICCs/IPs in ADs located in remote, rural areas in Mindanao where small-scale farming is common**. Around 30 percent of the AD land is considered agricultural land, while the rest is officially classified as production forest. The project would only cover the ADs with existing tenurial instruments (CADTs) issued by the NCIP/MIPA. The project would not change any land classification, assign new land titles, or recommend new land uses. The aim is to improve the farming efficiency and market competitiveness of the participating ICCs/IPs. The project would promote sustainable and environment-friendly investments to ensure that the ecosystem services, especially provisioning and regulating services that support the farm production areas, are not compromised.

71. **The project aims to improve farming efficiency through civil works and investments that strengthen agricultural commodity value chains, from production to post-harvest consolidation and processing.** The physical investments are small-scale civil works, which include gravel-paved farm-to-market roads, buying stations and warehouse/storage areas for fresh produce, trading posts and market stalls, small-scale irrigation canals, and labor-intensive micro-processing plants. Other investments include strengthening the agricultural value chains from the input stage via nurseries, hatcheries, small-scale feed mills, and others through production via mechanization, improved equipment, and climate-resilient technologies such as greenhouses and hydroponics. Investments also include post-harvest technologies, such as dryers, sorters, and packing facilities, and in aggregation, e.g., warehouses, trading posts, logistics, trucks, weighing scales, crates, and others.

72. **Interventions would undergo environmental and social safeguards screening as prescribed in the project ESMF and managed proportionately under the scope of specific environmental and social framework (ESF) instruments as identified in the Environment and Social Commitment Plan (ESCP) and Stakeholder Engagement Plan (SEP).** The project would adopt sustainable CSA technologies and practices to ensure that any potential environmental and social risks and impacts are adequately addressed during the design and implementation phases. Through these processes, it is anticipated that the potential environmental and social impacts would be small-scale, site-specific, and reversible. The ESF implementation arrangement is embedded in the project implementation arrangement described in Annex 1. A series of public consultations involving different stakeholders was carried out during the project preparation and after disclosing the draft ESF documents by the DA. The most recent consultations were conducted during the pre-appraisal in December 2022. Annex P of the ESMF document presents the details of the consultations. An updated ESMF has been disclosed in country on February 15, 2023, prior to the negotiations.

73. **Overall, the project is likely to have positive outcomes in terms of social inclusion, since it would enhance the agricultural productivity of Indigenous groups, which are among the 14 officially recognized marginalized sectors in the Philippines.**[46] While the project adopts design features intended to address the multi-dimensional risks in the current situation of most ADs, some unintended negative social outcomes are likely to occur. These include possible elite capture in selecting IP beneficiaries, the attraction of insurgent groups through increased agricultural activities,

[46] IPs in the Philippines are one of 14 Basic Sectors formally identified as a disadvantaged sector under Republic Act 8425 (Social Reform and Poverty Alleviation Act of 1997).

and the entry of unscrupulous traders due to improved road access. This would be mitigated through the strict participatory processes to be followed under the project involving the IPS and NCIP in all stages of formulating the ADAIF and prioritizing investments.

74. **The Contingent Emergency Response Component (CERC) financing mechanism constitutes Component 5. It is available to the DA, allowing it to access funds rapidly in response to an eligible crisis or emergency, e.g., disasters and health emergencies.** Should the Government of the Philippines through the DA, request the World Bank to activate the CERC, the current ESMF prepared for MIADP would be updated within 90 days of implementing CERC activities and include a positive list of eligible activities/expenditures. In addition, the ESCP would be accordingly amended to include the provision as per the updated ESMF within 90 days of CERC activation.

75. **Citizen Engagement:** Engagement with project beneficiaries and the broader IP communities within Ancestral Domains has been an integral aspect of project preparation and would be actively pursued throughout project implementation. This, in particular, would be a central design aspect of the project requiring close collaboration with the Indigenous Peoples Structure in regard to all project supported activities. This would build also on the comprehensive Citizens Engagement procedures established under the ongoing PRDP. Such procedures, as described in the POM, provide for stakeholders to give feedback, advice, opinions or recommendations for on-going or proposed issues or subprojects, to ensure transparency and accountability. This would be monitored through the results-based monitoring and evaluation (RBME) system which uses real time information gathered through geo-tagging, consultation and feedback. The POM provides for information to come through on-line, confidential reporting, through written responses or reply slips, face to face focus group discussions, or via video conferences. These procedures, which are detailed in the POM for each component of the project, are in addition to the Grievance Redress Mechanism (GRM) which was also established under PRDP and which is now being mainstreamed in the DA. The GRM process includes both an on-line reporting system, as well as a written Feedback/Complaint Form system addressed to the Grievance point person/Grievance Committee of the relevant project implementation body; i.e., NPCO, PSO, RPCO or LGU. Progress on Citizen Engagement will be monitored through three intermediate indicators included in the Results Framework, on: (a) Percentage of smallholder farmers and fisherfolk satisfied with services provided by the project, (b) Percentage of female farmers and fisherfolk satisfied with services provided by the project (Percentage) and (c) Percentage of grievances registered in the project's grievance redress system and addressed. Grievances registered and the status of responses would be reported on a semi-annual basis.

V. GRIEVANCE REDRESS SERVICES

76. Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), please visit *http://www.worldbank.org/GRS*. For information on how to submit complaints to the Bank's Accountability Mechanism, please visit *https://accountability.worldbank.org*.

VI. KEY RISKS

77. **The overall Risk Rating for the project is Substantial.** While risks associated with Macroeconomic, Technical Design, and Other issues are considered moderate, the scope and nature of project interventions are considered to pose substantial risks, although a range of mitigation measures would be implemented as described below.

78. **Political and Governance *(Substantial).*** While the IPRA and BOL provide the legal basis for the proposed project interventions, the political and governance risks relate to: (a) activities of insurgents that may periodically infiltrate ADs; and (b) vested interests seeking AD access, e.g., for mining, logging, ranching, etc. The project implementation readiness criteria exclude ADs classified by the government as under active conflict to mitigate these risks. The increased attention to ADs from the DA, NCIP, MAFAR, MIPA and LGUs as a result of the project should also help to buffer political and other governance risks. The project would define a clear procedure in the POM to be followed in cases of active conflict; and for ensuring prompt attention to the resolution of grievances, which builds on the well-established GRM procedures developed under PRDP. Even with these mitigation measures, the overall political and governance risks are Substantial.

79. **Sector Strategies and Policies *(Substantial).*** The IPRA Law provides clear legal basis for the project in the areas outside the BARMM. For BARMM, until the specific IP code is passed, the IPRA Law remains applicable and continues to serve as a legal basis for the project implementation. However, the project interventions for improving access may be viewed as encouraging non-IP migrants to settle in the ADs. Support for increasing production on idle AD lands may also be seen as promoting monocropping, counter to the implementing rules and regulations of the IPRA Law. To mitigate these risks, project implementation arrangements would give close attention to ensuring FPIC through the active participation of ICCs/IPs and the IPS in preparing the ADAIF. Field verification/safeguard processes would also be carried out with close involvement of the DA, NCIP, MAFAR and MIPA. The risk rating is substantial.

80. **Institutional Capacity for Implementation and Sustainability *(Substantial)***. The project builds on a considerable existing capacity and experience of the DA-Central and Field Offices, and LGU staff in implementing similar, *albeit* larger scale subprojects under the ongoing PRDP. Nevertheless, there are some LGUs in BARMM areas which can be expected to have weak implementation capacity. To mitigate implementation risks, capacity constraints of LGUs would be addressed through technical backstopping by the DA and assignment of RFO focal persons for each AD. Additionally, technical support would be enhanced through pre-qualified TSPs acceptable to the ICCs/IPs. Briefing orientations would also be provided for the TSPs to ensure a clear understanding of the project requirements. While there are considerable mitigation measures, the residual risk rating is substantial.

81. **Fiduciary *(Substantial)*.** The major fiduciary risk identified is the difficulty in monitoring compliance with the fiduciary arrangements, as procurement and financial management would involve LGUs and DA Regional Offices and IPOs. As mitigation measures, the project would benefit from the fiduciary systems and operation manuals established under PRDP and the extensive experience in procurement and accounting acquired by both the DA Regional Offices and LGUs. The fiduciary function for the infrastructure grant would be handled by the LGUs and the bulk of the fiduciary functions for enterprise grants would also be handled by the LGUs. Funds to be downloaded to the IPOs would be mainly the portion of the enterprise grant intended for the operating expenses. Fiduciary capacity at the IPO level would be strengthened to ensure that the operational funds would be used for the purpose intended. IPOs would be provided training in financial reporting by the DA with the assistance of service providers. Financial reports submitted by the IPOs would be reviewed by the LGUs and subsequently by DA-PSO. The Implementation Support Plan (Annex 1) provides substantial support for fiduciary matters, especially in the project's early years. The mitigating measures to be implemented to reduce risks include: (a) finalizing and adopting the FM Manual before negotiations; (b)

identifying and assigning FM staff to support the PSO; (c) entering into MOAs and Implementation Management Agreements (IMAs) with LGUs that would be include staffing requirements in the fiduciary and internal audit functions as well as logistical assistance to the Commission on Audit (COA) to enable them to audit field operations; and (d) training and orientation on World Bank FM and disbursement guidelines.

82. For procurement, the major risks include the timeliness of implementation and market attractiveness of the packages. The mitigation measures include: (a) finalization and issuance of Procurement Modules under the POM with strict service standards; (b) capacity building of Procuring Entities; and (c) consolidation of similar items into bigger packages along with early market engagement/promotion to attract wider competition. Focal areas agreed for further strengthening include: (a) ensuring effectiveness of LGU procurement, funds flow, contract management, and M&E; (b) improving RPCO and PSO oversight through enhanced management information tools and systems that build on current IT systems; (c) raising awareness of World Bank Fraud and Corruption Guidelines[47] amongst all personnel, proponents, LGUs, bidders, and entities within the MIADP sphere of operations; (d) ensuring access, scope, coverage, and procedures for complaints-handling and resolution, especially for complaints from the LGU level (to include assurance that the PSO would share complaints information with the Bank during implementation support missions); and (e) reviewing and strengthening of internal audit functions, staffing and resources in LGUs, as well as in the PSO and RPCOs. Overall, even with the mitigating measures, the fiduciary risk rating is assessed to be substantial.

83. **Environment and Social *(Substantial).*** The project is expected to have positive outcomes in terms of social inclusion since it aims to enhance the agricultural productivity of Indigenous groups which are among the most marginalized in the Philippines. It would also promote social cohesion by engaging and strengthening existing IP organizations and integrating Indigenous agricultural practices. However, the project is anticipated to encounter social risks due to the contextual issues that affect Mindanao and the ADs. These risks include unresolved land claims, conflict, and vulnerability to natural disasters. The project acknowledges these risks and would focus on the ADs with secured tenurial instruments like CADT or in the case of BARMM, the ADs possessing a CADT or a tenurial instrument supported by a cadastral survey and certified by MIPA. Another risk is that the consent and participation of ICCs/IPs may not be secured in a transparent and culturally sensitive manner as prescribed by the national law. To address this risk, MIADP would be subject to a validation process following the FPIC guidelines of the NCIP and the MIPA, being a foreign-assisted project undertaken in collaboration with these government agencies. Component 1 of MIADP has been designed to embody project planning and stakeholder engagement activities to support the conduct of the required validation process. The project would also consider the occurrence and intensity of conflict in selecting the target ADs. Some risks might emerge from the project, including the possibility of elite capture or exclusion of some IP households, undue involvement of children, or unequal participation of women. These consequences could negatively impact the social cohesion of IP groups. The project would seek to avoid these risks through data collection on the history of conflict and its impact on the community, political mapping of key stakeholders and by encouraging citizen feedback. A GRM would be established, building on the existing PRDP's GRM. By basing the ADAIF on the ADSDPP, a transparent, participatory process would be established to identify and prioritize investment decisions, which together with measures contained in the project's ESMF, ESCP, SEP, and Labor Management Procedures (LMP) would further mitigate risks. The ESMF also includes a Land Acquisition Framework to mitigate negative impacts of economic activities and compensation for loss or damage of productive assets. Although public consultations have been undertaken and would be continued during project implementation as guided by the ESCP, SEP and ESMF, there remains a level of uncertainty as to the capacity of LGUs and IPOs to implement and comply with the environmental and social safeguard requirements.

[47] Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by the IBRD Loans and IDA Credits and Grants (revised 2016)

84. The project's potential environmental impacts would most likely be generated during the construction and operation of small-scale civil works. The expected site-specific impacts would be temporary and manageable. Impacts may consist of such things as noise, dust, water ponding, erosion of uncompacted soil, uncollected construction debris and solid wastes, soil, and air pollution, occupational health and safety for workers, community health and safety concerns, and COVID-19 health risks. The project expects to generate positive impacts on the overall agricultural production, soil and water conservation due to the improved farming practices, value addition, and organized agribusiness systems geared towards uplifting the socioeconomic conditions of the ICCs/IPs. Given that specific subproject locations are not identified at the outset of the project, a broader assessment covering baseline environmental and social conditions and potential risks and impacts has been undertaken. The ESMF and the ESA guidelines would inform the development of mitigation measures and the grievance redress mechanism to address the risks and impacts, including potential changes to the type of agricultural products and services to be developed or enhanced. Information, education and communication materials would be prepared to inform the project beneficiaries of such risks, and technical support services would be provided by DA, NCIP, Department of Environment and Natural Resources (DENR), MAFAR, MIPA, MENRE, Non-Governmental Organizations (NGOs) and other development partners to enhance their livelihood and income. Nevertheless, considerable uncertainty surrounds the capacity of LGUs and IPOs to implement and comply with the environmental and social safeguard requirements. Therefore, despite the mitigating factors, residual risks to the project remain substantial.

85. **Stakeholders *(Substantial).*** ICCs/IPs would be the main stakeholders, and disputes between the ICC/IP communities are not uncommon. The causes can be many and varied, and any attempt at resolution would be both outside the scope of the project and present a possible reputational risk for the World Bank. Such disputes would for the most part be dealt with through the IPS governance procedures. The World Bank support criteria for ICCs/IPs would be based on a strategic framework for citizen engagement, and the effective GRM of the DA. The mitigation measures would, in the first instance, require close engagement with the IPS as the legitimate authority for the ADs and ICCs/IPs. All project interventions would be agreed based on the ADAIF. The project design requires that this is prepared and approved through a participatory process involving the NCIP, the responsible LGUs, and the DA. These requirements would be made clear to all concerned through a communication campaign to be conducted under Component 1. The procedures for GRM are also detailed in the POM. Other stakeholder issues may arise through the TSPs including NGOs, state universities and colleges (SUCs), private firms and consultants who may be hired under the project. To mitigate the risks, those working directly with the ICCs/IPs would be contracted based on their acceptability to the IPS concerned (largely based on the ICC/IPs prior experience with such TSPs). The DA has extensive experience and detailed procedures for such pre-qualification and contracting procedures. The other main group of stakeholders would be the private traders and buyers outside the AD engaged in purchasing products and providing input supplies. This group would operate in the AD in accordance with IPS approved procedures/arrangements. Collectively, therefore, most stakeholder issues that may arise should be mitigated through the IPS governance procedures and specific project design measures. Nevertheless, given the history of marginalization, cultural issues and concerns, vested interests, as well as the new institutional mechanisms being introduced, stakeholder issues would undoubtedly arise. As such the residual stakeholder risk for the project remain substantial.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY: Philippines
Mindanao Inclusive Agriculture Development Project

Project Development Objectives(s)

To increase agricultural productivity, resiliency, and access to markets and services of organized farmer and fisherfolk groups in selected Ancestral Domains and value chains in Mindanao.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	End Target
Increased agricultural productivity			
Percentage increase in the average yields for selected crops of farmer-beneficiaries (Percentage)		0.00	30.00
Increased resiliency to climate change			
Farmers adopting improved agricultural technology (CRI, Number)		0.00	60,000.00
Farmers adopting improved agricultural technology - Female (CRI, Number)		0.00	27,000.00
Farmers adopting improved agricultural technology - male (CRI, Number)		0.00	33,000.00
Increased access to agricultural services			
Farmers reached with agricultural assets or services (CRI,		0.00	120,000.00

Indicator Name	PBC	Baseline	End Target
Number)			
Farmers reached with agricultural assets or services - Female (CRI, Number)		0.00	54,000.00
Increased access to agricultural markets and increased economic resiliency			
Percentage increase in the average gross value of sales of beneficiary Indigenous People's Organization (IPOs) (Percentage)		0.00	20.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
Component 1: Ancestral Domain Planning and Social Preparation			
Number of key entities strengthened with technical assistance. (Number)		0.00	52.00
Number of enterprise and/or infrastructure subproject Concept Proposals approved by the Indigenous Peoples Structure (IPS) (Number)		0.00	52.00
Number of target ADs which gathered and analyzed sex-disaggregated data as part of the ADAIF and other tools for social preparation (Number)		0.00	26.00
Number of ADAIFs that resulted in project investments financed under Components 2 and 3 (Number)		0.00	26.00
Component 2: Resilient Ancestral Domain Agri-Fisheries Infrastructure			
Kilometers of roads in rural areas rebuilt for all seasons, or upgraded to climate-resilient standards (Kilometers)		0.00	191.00

Indicator Name	PBC	Baseline	End Target
Percentage of rural infrastructure subprojects completed and with functioning O&M arrangements. (Percentage)		0.00	100.00
Percentage reduction in average travel time (Percentage)		0.00	30.00
Percentage reduction in transport costs of roads linking production areas to markets. (Percentage)		0.00	30.00
Component 3: Ancestral Domain Agri-fisheries Production and Enterprise Development			
Percentage of benefitting IPOs with formalized market/supply agreements. (Percentage)		0.00	50.00
Percentage of Business Plans approved for project funding (Percentage)		0.00	80.00
Percentage of Business Plans approved and implemented that are led by women (Percentage)		0.00	10.00
Component 4: Project Management and Support, Monitoring, and Evaluation			
Effective MIS for real time monitoring and preparation of reports mainstreamed with DA M&E system (Yes/No)		No	Yes
Percentage of smallholder farmers and fisherfolk satisfied with services provided by the project (Percentage)		0.00	80.00
Percentage of female farmers and fisherfolk satisfied with services provided by the project (Percentage)		0.00	80.00
Percentage of grievances registered in the project's grievance redress system addressed (Percentage)		0.00	90.00

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Percentage increase in the average yields for selected crops of farmer-beneficiaries	Baseline is zero before the project start as the indicator measures "increment" . Baseline survey will be collected to determine the average baseline value for harvested production per ha. The increase in yield would be attributable to the adoption of “improved technologies” to raise yield despite climate change. Using time series data, this indicator would analyze sustainable, long-term (versus seasonal or temporary) yield/ productivity increases.	Annual data collection; to be validated thrice over the project’s life: Baseline, Mid-Term, and End-of Project to measure and analyze “sustainably increased productivity”	Project M&E database to be developed through surveys, FGDs, and other data collection methods (both in-house and out-sourced); IPO records; GIS-supported Project-wide MIS accessible on-line; WB Missions	Project panel surveys to generate complementary quantitative and qualitative data to support in-depth trendline analysis of productivity profiles; satellite imagery/ drone/ aerial survey data to present visual perspectives on project sites, e.g., sizes and location of farms, condition of watersheds, and spatial patterns (e.g., input-supply-production-processing facilities connectivity)	PSO M&E unit, supported by: (1) Community Facilitators, other on-site project staff, and component-specific staff; and (2) technical assistance and resources (e.g., satellite imagery, drone footage) as needed and detailed in specific Terms of Reference. M&E unit responsible to ensure coverage of all data for use in contribution and attribution analysis linking component level outputs to overall PDO achievement.
Farmers adopting improved agricultural technology	This indicator measures the number of farmers (of agricultural products) who have adopted an improved agricultural technology promoted by operations	Annual data collection to be validated thrice over the project’s life: Baseline,	Baseline data will be collected at the time of baseline survey.	Project panel surveys to generate complementary quantitative and qualitative data supporting in-depth	PSO M&E unit, supported by: (1) Community Facilitators, other on-site project staff, and component-specific staff; and (2)

	supported by the World Bank.	Mid-Term, and End-of Project to measure and analyze farmers' behavioral change towards adopting climate-smart/ good agricultural practices resulting from the assets, services, and other outputs to be delivered by the project.	Project M&E database to be developed through surveys, FGDs, and other data collection methods; GIS-supported Project MIS; WB Missions	analysis of technology adoption accomplishments, and key factors facilitating or constraining technology adoption.	technical assistance and other resources as needed and detailed in specific Terms of Reference. PSO M&E unit to ensure that technology adoption analyses would be linked backwards to project outputs (e.g., capacitated/ stronger IPOs due to technical assistance, assets and services; improved infrastructure); and linked forward to higher-level project objectives, e.g., productivity and market access.
Farmers adopting improved agricultural technology - Female		Annual data collection to be validated thrice over the project's life: Baseline, Mid-Term, and End-of	Project M&E database to be developed through surveys, FGDs, and other data collection	Project panel surveys to generate complementary quantitative and qualitative data supporting in-depth analysis of technology adoption	PSO M&E unit, supported by: (1) Community Facilitators, other on-site project staff, and component-specific staff; and (2) technical assistance and other resources as

		Project to measure and analyze farmers' behavioral change towards adopting climate-smart/ good agricultural practices resulting from the assets, services, and other outputs to be delivered by the project. *Note: the target of 27,000 females adopting improved agricultural technology will be confirmed	methods; GIS-supported Project MIS; WB Missions	accomplishments, and key factors facilitating or constraining technology adoption.	needed and detailed in specific Terms of Reference. PSO M&E unit to ensure that technology adoption analyses will be linked backwards to project outputs (e.g., capacitated/ stronger IPOs due to technical assistance, assets and services; improved infrastructure); and linked forward to higher-level project objectives, e.g., productivity and market access.

		once the AD-level sex-disaggregated data have been gathered under Component 1.			
Farmers adopting improved agricultural technology - male		Annual data collection to be validated thrice over the project's life: Baseline, Mid-Term, and End-of Project to measure and analyze farmers' behavioral change towards adopting climate-smart/ good agricultural practices resulting	Project M&E database to be developed through surveys, FGDs, and other data collection methods; GIS-supported Project MIS; WB Missions	Project panel surveys to generate complementary quantitative and qualitative data supporting in-depth analysis of technology adoption accomplishments, and key factors facilitating or constraining technology adoption.	PSO M&E unit, supported by: (1) Community Facilitators, other on-site project staff, and component-specific staff; and (2) technical assistance and other resources as needed and detailed in specific Terms of Reference. PSO M&E unit to ensure that technology adoption analyses will be linked backwards to project outputs (e.g., capacitated/ stronger IPOs due to technical assistance, assets and services; improved infrastructure); and

		from the assets, services, and other outputs to be delivered by the project.			linked forward to higher-level project objectives, e.g., productivity and market access.
Farmers reached with agricultural assets or services	This indicator measures the number of farmers who were provided with agricultural assets or services as a result of World Bank project support. "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber, and non-timber forest products. Assets include property, biological assets, and farm and processing equipment. Biological assets may include animal agriculture breeds (e.g., livestock, fisheries) and genetic material of livestock, crops, trees, and shrubs (including fiber and fuel crops). Services include research,	Quarterly data collection and progress reporting; More in-depth semi-annual analysis and results reporting	M&E reports (component level and overall); community monitoring reports/ records; service provider reports; GIS-supported Project-wide MIS accessible on-line	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking.	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff

	extension, training, education, ICTs, inputs (e.g., fertilizers, pesticides, labor), production-related services (e.g., soil testing, animal health/veterinary services), phyto-sanitary and food safety services, agricultural marketing support services (e.g., price monitoring, export promotion), access to farm and post-harvest machinery and storage facilities, employment, irrigation and drainage, and finance. Farmers are people engaged in agricultural activities or members of an agriculture-related business (disaggregated by men and women) targeted by the project.				
Farmers reached with agricultural assets or services - Female		Quarterly data collection and progress reporting; More in-depth semi-annual analysis and	M&E reports (component level and overall); community monitoring reports/ records; service	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff

		results reporting *Note: the target of 54,000 females reached will be confirmed once the AD-level sex-disaggregated data have been gathered under Component 1.	provider reports; GIS-supported Project-wide MIS accessible on-line	that will enable robust performance progress and results synthesis, analyses, reporting, and feedbacking.	
Percentage increase in the average gross value of sales of beneficiary Indigenous People's Organization (IPOs)	Buyers of IPO products are expected to be mainly institutional buyers, including larger-scale firms and cooperatives. Percent change would be reported year-on-year; project performance would be reckoned in real terms based on the 20 percent cumulative end-of-project target. As in the case of	Same as for previous indicator; data collection frequency to produce time series data required to measure and analyze "sustainably increased	Same as for previous indicator. In addition and to sharpen focus on sales as a function not only of productivity increases but also of market	Same as for previous indicator – focusing on sales, market destinations, marketing strategies, and barriers to market entry. The methodology for data collection supporting the previous indicator (yields) would be linked to the methodology for data collection for this second indicator (sales)	Same as for previous indicator. PSO M&E unit to ensure that spatial-GIS data would be collected to enable effective visualization of the constraints to and opportunities for continuing enhancements in commodity value chain efficiency and inclusiveness to expand

	yield increase, sales would be tracked using time series data to analyze sustainable, long-term (versus seasonal or temporary) sales increases.	access to markets"	access, data sources will also include the actual and potential buyers of IPOs products.	– in order to generate a wholistic picture of the supply-demand situation and prospects facing the IPOs.	actual and potential IPO sales and the distribution of benefits therefrom.

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Number of key entities strengthened with technical assistance.	Baseline is zero, prior to the intervention. By mid-term it is expected that half of the target would be achieved. This measures the number of entities (IPOs, LGUs, Service Providers) who received training and technical support including the entities' registration and development of alliances with cooperatives, businesses, and NGOs outside the ADs.	Quarterly data collection and progress reporting; More in-depth semi-annual analysis and results reporting	Project M&E reports (component level and overall); IPO records; service provider reports; GIS-supported Project-wide MIS accessible on-line	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking.	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff

Number of enterprise and/or infrastructure subproject Concept Proposals approved by the Indigenous Peoples Structure (IPS)	Baseline value is zero. By mid-term it is expected that half of the target would be achieved This measures the number of Concept Proposals based on the ADAIF approved by the IPS. The Concept Proposals would provide the basis for support under Components 2 (infrastructure) and 3 (enterprises).	Quarterly data collection and progress reporting; More in-depth semi-annual analysis and results reporting	Project M&E reports (component level and overall); IPO records; service provider reports; GIS-supported Project-wide MIS accessible on-line	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking.	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff
Number of target ADs which gathered and analyzed sex-disaggregated data as part of the ADAIF and other tools for social preparation	Baseline data is zero. By mid-term it is expected that half of the target would be achieved This measures the number of ADs, where through the ADAIF or baseline survey, sex-disaggregated data has been obtained. Data would be collected on ICCs and IPOs as critical inputs to the ADAIF, and as part of the baseline study to be done in a participatory manner and	At onset of project implement ation; then Annual updates as needed	Project M&E reports (component level and overall); IPO records; service provider reports; GIS-supported Project-wide MIS accessible on-line, plus updated data	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking. Collection	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff

	in conjunction with M&E in Component 4.		available from LGUs, NCIP, PSA, NGOs, and/ or other data sources.	of data for ADAIF-related purposes would be coordinated and cross-referenced with the Component 1 gender-disaggregated Preliminary Social Investigation (PSI).	
Number of ADAIFs that resulted in project investments financed under Components 2 and 3	By mid-term it is expected that half of the target would be achieved This measures the number of ADAIFs that culminate in approved business plans and infrastructure or enterprise investments funded under Components 2 and 3, respectively.	Semi-annual data collection and progress reporting; More in-depth annual analysis and results reporting	M&E reports (component level and overall); IPO records; service provider reports; GIS-supported Project-wide MIS accessible on-line	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking.	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff
Kilometers of roads in rural areas rebuilt for all seasons, or upgraded to climate-resilient standards	Baseline data is zero. This measures the total kilometers of all-weather roads (including tire tracks) rehabilitated to DPWH standards	Quarterly data collection and progress reporting;	M&E reports (component level and overall); IPO records; service	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff

		More in-depth semi-annual analysis and results reporting	provider reports; GIS-supported Project-wide MIS accessible on-line; plus LGU records	complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking; plus LGU key informant interviews	
Percentage of rural infrastructure subprojects completed and with functioning O&M arrangements.	Baseline value is zero,This measures the number of infrastructure subprojects completed where the LGU has provided O&M in accordance with the IMA	Quarterly data collection and progress reporting; More in-depth semi-annual analysis and results reporting	M&E reports (component level and overall); IPO records; service provider reports; GIS-supported Project-wide MIS accessible on-line; plus LGU records	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking; plus LGU key informant interviews. Supplemented by observation of the condition of	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff

				random completed subprojects, and compilation of signed IMA/ O&M agreements/ other evidence of O&M arrangements.	
Percentage reduction in average travel time	Baseline value- average travel time- will be collected at the time of baseline. Prior to the project, baseline data for this indicator is zero. This measures reduction in average travel time due to access to climate-resilient infrastructure	Quarterly data collection and progress reporting; More in-depth semi-annual analysis and results reporting	M&E reports (component level and overall); IPO records; service provider reports; GIS-supported Project-wide MIS accessible on-line; plus LGU records and random travelers and transport operators.	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking, including interview of travelers and transport operators along project-financed roads.	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff
Percentage reduction in transport costs of roads linking production areas to markets.	Baseline value is zero. Baseline survey will be conducted, which will	Quarterly data collection	M&E reports (component level and	Use of standard project Data Capture Forms (DCF) – both in e-	PSO M&E unit, supported by Community Facilitators, other on-site

	collect information on average transport costs in the project areas. This measures the reduction in travel cost due to improved linkage of production areas to markets	and progress reporting; More in-depth semi-annual analysis and results reporting	overall); IPO records; service provider reports; GIS-supported Project-wide MIS accessible on-line; plus LGU records and random travelers and transport operators	format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking, including interview of travelers and transport operators along project-financed roads	project staff, and component-specific staff
Percentage of benefitting IPOs with formalized market/supply agreements.	Baseline data is zero. This measures the proportion of registered IPOs identified in the ADAIF holding formalized market/supply agreements	Quarterly data collection and progress reporting; More in-depth semi-annual analysis and results reporting	M&E reports (component level and overall); IPO records; service provider reports; IPO business partners	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff

				feedbacking, including compilation of signed market/supply agreements; plus key informant interview of random IPOs and their business partners	
Percentage of Business Plans approved for project funding	This measures the number of enterprise subprojects approved	Quarterly data collection and progress reporting; More in-depth semi-annual analysis and results reporting	M&E reports (component level and overall); IPO records; service provider reports; GIS-supported Project-wide MIS accessible on-line; plus IPS records	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking, including interview of representatives of the approving authority	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and component-specific staff
Percentage of Business Plans approved and implemented that are led by women	This measures the number of enterprise subprojects approved that are led by women	Quarterly data collection and	M&E reports (component level and overall); IPO	Use of standard project Data Capture Forms (DCF) – both in e-format and in paper	PSO M&E unit, supported by Community Facilitators, other on-site project staff, and

	An initial target for increased female participation was set but this would be revisited based on the baseline data collected during the social preparation activities. *Note: the target of 10 percent would be confirmed once the AD-level sex-disaggregated data have been gathered under Component 1.	progress reporting; More in-depth semi-annual analysis and results reporting	records; service provider reports; GIS-supported Project-wide MIS accessible on-line; plus IPS records	format – to collect/ generate complementary quantitative and qualitative on-site data that would enable robust performance progress and results synthesis, analyses, reporting, and feedbacking, including interview of representatives of the approving authority	component-specific staff
Effective MIS for real time monitoring and preparation of reports mainstreamed with DA M&E system	This indicator measures the establishment of an effective MIS system able to produce real-time, effective reports	Once in the lifetime of the project (on Year 1 of implement ation)	PSO and DA ICT Service	Observation of day-to-day MIS operation	PSO M&E unit
Percentage of smallholder farmers and fisherfolk satisfied with services provided by the project	This measures the proportion of beneficiaries reporting satisfaction from the services. Respondents would represent a cross-section of beneficiaries, i.e., by location, occupation, age group, ethnicity	Annual	Stakeholders	Beneficiary satisfaction survey; FGD	PSO M&E unit supported by: (1) Community Facilitators, other on-site project staff, and component-specific staff (while ensuring data integrity); and (2) service

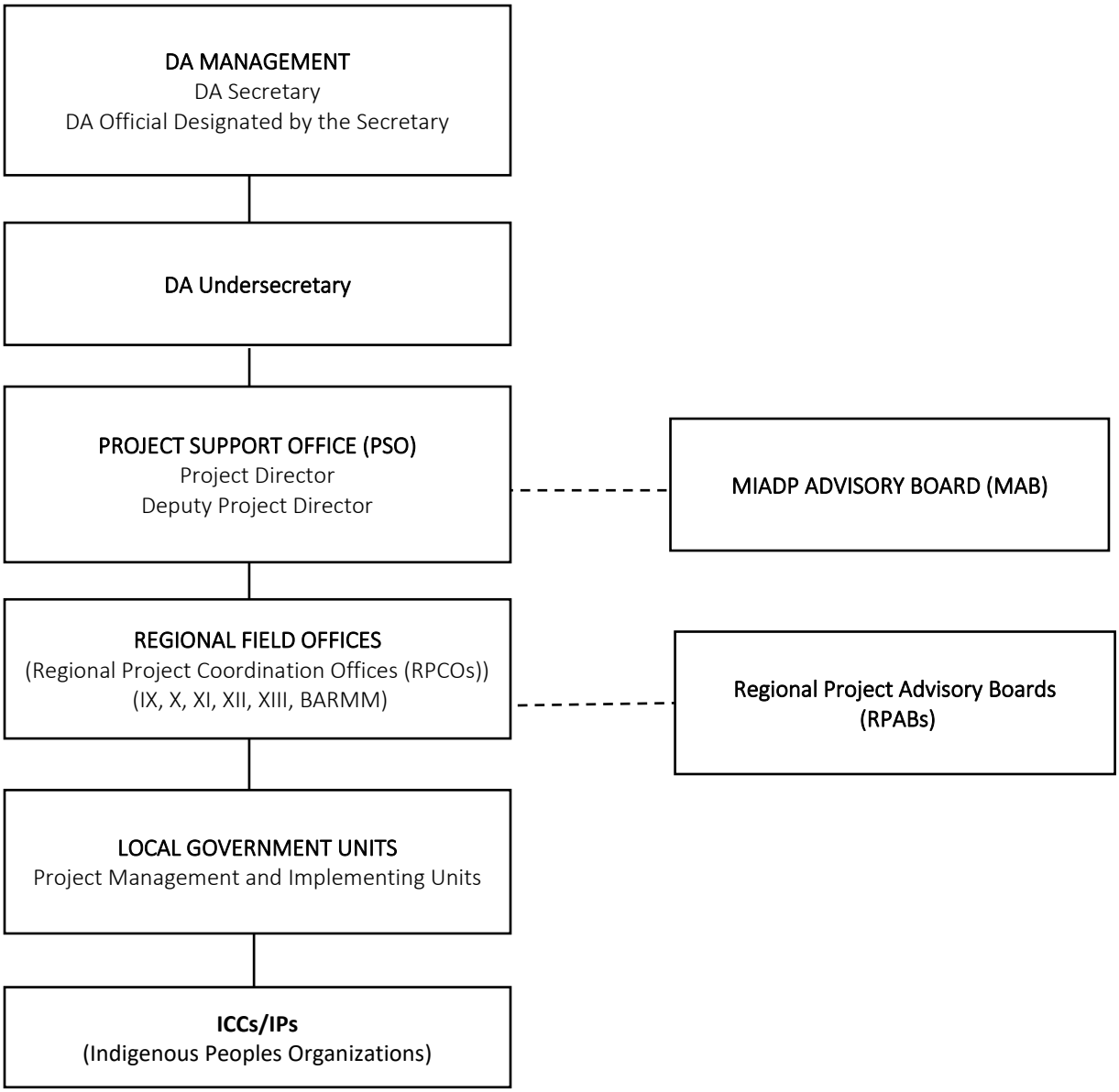
					providers as needed
Percentage of female farmers and fisherfolk satisfied with services provided by the project	This measures the proportion of women beneficiaries reporting satisfaction from the services	Annual	Stakeholders	Beneficiary satisfaction survey; FGD	PSO M&E unit supported by: (1) Community Facilitators, other on-site project staff, and component-specific staff (while ensuring data integrity); and (2) service providers as needed
Percentage of grievances registered in the project's grievance redress system addressed	This measures the project's response rate acquired through GRM reporting	Quarterly data collection and progress reporting; More in-depth semi-annual analysis and results reporting	Grievance redress system records; random interviews	Compilation and review of grievance data	PSO M&E unit and Grievance unit/ staff

ANNEX 1: Implementation Arrangements and Support Plan

Institutional Arrangements

1. **The project would be under the direct supervision of the DA Secretary through his designated Official at the national level.** The DA Special Projects Coordination and Management Assistance Division (SPCMAD) at the DA Central Office would provide technical support, coordination and reporting to the Government's Oversight Agencies and the World Bank.

Figure A1.1: Institutional Arrangements for Implementation of MIADP



2. **Day-to-day project management would be through the existing PRDP Project Support Office (PSO) for Mindanao, under the direction of the Regional Executive Director of Regional Field Office-11, who serves as Project Director.** A Deputy Project Director for MIADP would be designated as required. A MIADP Advisory Board (MAB) would be established with the inclusion of NCIP by no later than three months after loan effectiveness to provide policy guidance and oversight for project implementation. The MAB would be chaired by the Secretary of Agriculture or a person designated by the Secretary of Agriculture. The PSO would provide secretariat support to the MAB.

3. **The RFOs would be responsible for field-level implementation, coordination, and monitoring at the regional level.** Under those now mainstreamed arrangements, responsibility for implementation would be through Regional Project Coordination Offices (RPCOs), which the Regional Executive Directors head. Component/Unit Heads would provide the day-to-day management for each MIADP component. Staffing of the RPCOs would be augmented by externally hired staff under approved Terms of Reference and duration of engagement, as needed for implementing MIADP. Existing Regional Project Advisory Boards (RPABs)[48] of the PRDP, including a regional NCIP representative, would be responsible for approving subprojects and for guiding and facilitating project implementation in each of the five Mindanao regions. RPCOs would provide secretariat support to the RPAB.

4. **At the local government level, a DA-LGU Memorandum of Agreement would be signed to provide, among others, for the establishing the provincial, municipal or city project implementation units (PPMIU, MPMIU and CPMIU) to support the project**. These would be formalized as part of the stakeholder consultation activities under Component 1, before formal engagement with the IPS regarding each supported AD. Specific requirements for each subproject would be defined subsequently through Implementation Management Agreements (IMAs) with LGUs following procedures mainstreamed under PRDP. The IMA requires the participating LGU to: (a) secure approval their Development Council for inclusion of the subproject in the Local Development Investment Program and the Annual Investment Program; (b) facilitate the acquisition of right-of-way as needed; (c) establish PPMIU, MPMIU or CPMIUs; (d) carry out environmental screening and secure the necessary permits and clearances as per the ESMF; (e) carry out the subprojects as per the MIADP-POM; (f) participate in training to increase capacity for O&M; (g) ensure sound and transparent accounting and auditing of fund disbursements; (h) monitor implementation and prepare corresponding progress reports; and (i) undertake periodic O&M of the subproject and related facilities. Provincial Commodity Investment Plans (PCIPs) would also serve as the joint DA-LGU planning instrument for co-financing with the LGUs, and as the convergence platform through which other government agencies and the private sector can provide complementary support. The agreed cost-sharing currently guides co-financing for subprojects under PRDP (80:10:10), i.e., Loan Proceeds, DA counterpart and LGU counterpart. The LGU and the IPO would enter into Enterprise Investment Agreements to specify each enterprise subproject's roles, responsibilities, accountabilities, and procedures.

5. **The DA and NCIP would sign an MOA.** The MOA would set out the agreed arrangements for NCIP to support project implementation under terms and conditions acceptable to the World Bank. It is to be signed within

[48] RPAB-proposed membership: Regional Executive Director (RED) of DA (MAFAR Minister in case of BARMM), NCIP (or MIPA for BARMM) and the Regional Directors of MinDA, DENR (or MENRE for BARMM), DAR, DILG, DTI, DPWH, and RAFC. Other agencies like the NEDA, CDA, DBM and representatives from CSOs, SUCs, and private sector are likewise considered, if deemed necessary, as members.

three months of loan effectiveness.

6. **In BARMM, while DA remains responsible for overall project implementation, the other institutions involved in implementing project activities would be MAFAR together with MIPA and MENRE.** The implementation arrangements would adopt the existing institutional arrangements for implementing PRDP with a view to implementation commencing in the project's second year. Prior to the commencement of any project activity in BARMM, the Borrower, through DA, shall enter into a memorandum of agreement with MAFAR, MIPA and MENRE setting out the implementation arrangements for carrying out of relevant project activities in BARMM, under terms and conditions satisfactory to the Bank.

Implementation Arrangements

7. **Implementation procedures build on those developed through PRDP and are detailed in the MIADP POM.** The main differences relate to implementing activities under Component 1, where Development Facilitators (DFs) and Technical Service Providers (TSPs) would be hired to complement social formation and technical support from the DA ad LGUs. DFs and TSPs may be NGOs, universities, or private entities and would be pre-qualified based on eligibility criteria agreed with NCIP and derived from experiences and results from work with Indigenous communities. The ICCs/IPs would participate in the selection of their service provider. A communication plan would be implemented to familiarize stakeholders with all aspects of the project. It would include training service providers to ensure that they are fully aware of the project's requirements.

8. **Central to project implementation would be the need to ensure that each ADAIF is formulated and validated with the full participation of the IPS as the highest governing body with the IPO as its technical arm.** The ADAIF would be the only new instrument introduced under the project. This would distill each AD's agricultural plans and priorities a as defined in the ADSDPP. The ADAIF is designed to provide additional detail to understand and validate the edaphic and climatic suitability of the agricultural products to be produced, the infrastructure to be installed in each AD, and the IPOs involved and their product market prospects. IPO-proposed subprojects, based on ADAIF, would be approved by IPS before being submitted for MIADP support.

9. **The phasing of project interventions anticipates at least a six-to-nine-month period for the participatory process of ADAIF formulation and investment prioritization**. For project start-up, 10 ADs have been identified as having met the Implementation Readiness Criteria, two in each of Regions 9, 10, 11, 12 and 13. Another eight ADs would be targeted for support in each of the following two years of implementation. Building on the experience from PRDP, ADs from the second year onwards would be supported on a first-come, first-served basis or until a sufficient pipeline exists to warrant the introduction of prioritization criteria. Given the time it would take to formulate the ADAIFs, it is anticipated that one to three ADs would be supported in BARMM, with implementation to be phased in during the second year of implementation. The World Bank would review at least the first ADAIF developed in each region and BARMM, intending to provide feedback to strengthen the process further.

Financial Management Arrangements

10. **The DA's current financial management system would be used for project implementation. It includes acceptable budgeting, funds flow, accounting, reporting, internal controls and staffing**. The DA has a

robust information system enabling it to report project implementation progress regularly.

11. **FM Organization and Staffing.** Adequate staff resources exist at the PSO and RPCO levels to ensure timely completion of the financial reports, monitoring of the Designated Accounts and Modified Disbursement System (MDS) sub-accounts and secondary project accounts, and preparation of Withdrawal Applications. Due to the qualified opinion of the Commission on Audit (COA) on the DA's financial statements during the period 2019-2021, separate books of account for the project would be maintained at the RPCOs, PSO and DA Central Office.

12. **Budgeting Arrangements.** Budget proposals would be prepared annually by the DA and submitted to DBM for review before being incorporated into the National Expenditure Program (NEP), which is then subjected to the evaluation of Congress prior to its consideration in the General Appropriations Act. Accordingly, an annual work and financial plan, together with the project's disbursement projections, would be submitted to the World Bank no later than October 31 of each fiscal year during the implementation of the project or at a later date as decided by the World Bank. This would include a consolidated Annual Work and Financial Plan containing all project activities and expenditures proposed to be included in the project in the following fiscal year, including a specification of the sources of financing for all expenditures, and environmental and social risk and impact management measures taken or planned to be taken.

13. **Accounting.** The accounting records of the project would be maintained by the PSO and RPCOs using the National Government Accounting System (NGAS) chart of account. The electronic NGAS' (eNGAS) financial management system would maintain the accounting records.

14. **Internal Controls.** The project would follow the internal controls and policies in NGAS, Government Audit and Accounting Manual, COA and DBM memoranda and circulars, and other laws and regulations. The respective DA FM staff at all levels would review supporting documents for project disbursements. Specifically, the following requirements shall be implemented for the project:

    (a) Subsidiary records shall be maintained for the Designated Account and the related MDS sub-accounts and secondary project accounts.
    (b) Quarterly bank reconciliation statements shall be required to be prepared one month after the end of each quarter together with the trial balance; and
    (c) Annual physical inventory count of fixed assets shall be conducted, and results reconciled with the accounting and property records.

15. **Financial Reporting Arrangements.** The PSO would prepare and submit unaudited Interim Financial Reports (IFRs) within 45 days after the end of each calendar quarter consisting of the following: (a) Sources and Uses of Funds; (b) Variance Analysis; and (c) Designated Account Activity Statement.

16. **Disbursement Arrangements and Funds Flow**. The loan and subgrants shall be disbursed over a period of six years following the project's financial plan in the following categories:

Table A1.1: Category of Eligible Expenditures

Category	Amount of the Loan Allocated (in US$)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consulting services, Enterprise Subgrants, Infrastructure Subgrants, Operating Costs, and Training for the Project	**100,000,000**	**100% of the amount disbursed for the Enterprise Subgrants and Infrastructure Subgrants** **100% for all other Eligible Expenditures**
(2) Emergency Expenditures	**0**	**100%**
[(3)] Front-end Fee 49		**Amount payable under Section 2.03 of this Agreement following in Section 2.07 (b) of the General Conditions**
[(4)] Interest Rate Cap or Interest Rate Collar premium 50		**Amount due under Section 4.05 (c) of the General Conditions**
TOTAL AMOUNT	**100,000,000**	

17. **Funds Flow.** A loan from the World Bank would finance the project. The national government and the participating LGUs would provide the government counterpart requirements. The funds from the loan proceeds would flow from the World Bank to the Bureau of Treasury account at the Central Bank of the Philippines. After the Notice of Cash Allocation (NCA) issuance by the DBM, the funds would be credited to the Designated Account of the project to be maintained by the PSO. The Designated Account shall be maintained at the Land Bank of the Philippines an authorized government depository bank acceptable to the World Bank (Figure A1.1).

18. The disbursement methods allowed under the project are: (a) advance; (b) direct payments; (c) reimbursements; and (d) special commitments. The proposed minimum value of application for direct payments, reimbursements and special commitments is US$200,000. A Peso Modified Disbursement System sub-account for the Project shall be opened and maintained by PSO at the Land Bank of the Philippines to download funds from the Bureau of Treasury to pay for eligible project expenditures. Secondary project accounts in PhP would be opened at authorized government depository banks and managed by RFOs/RPCOs which can receive advances from the PSO for their incurred operating costs.

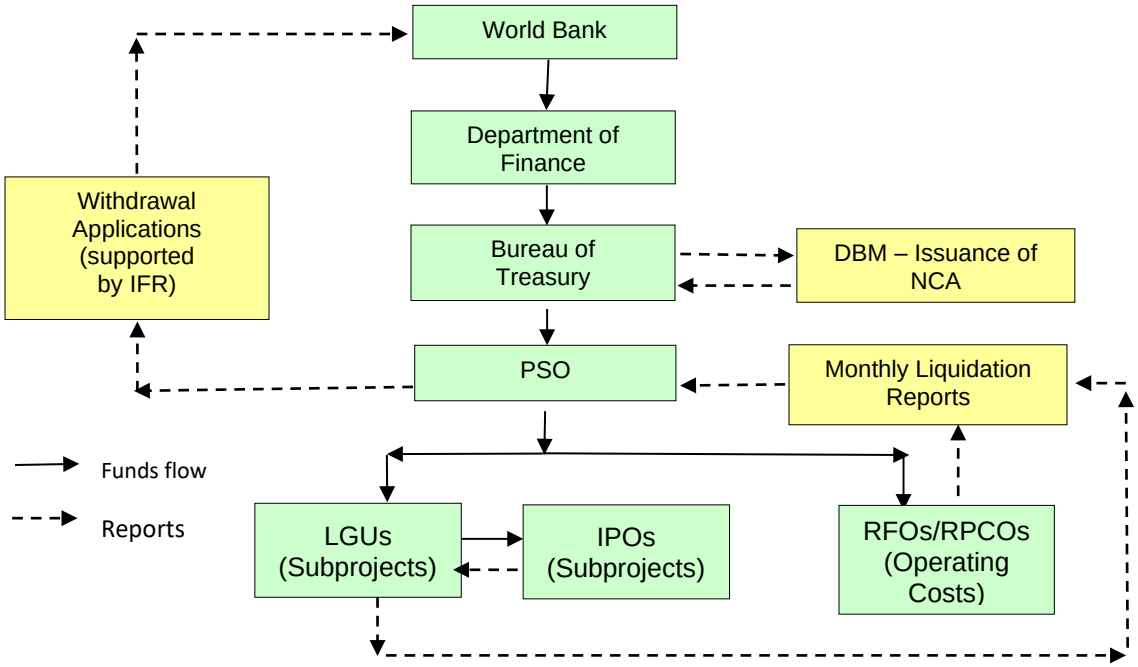
19. The DA shall withdraw funds from the World Bank through the online submission of Withdrawal Applications supported by Quarterly IFRs indicating cash forecast/requirements for six months. Disbursements under the project shall comply with the World Bank policies and procedures on disbursements and financial management as reflected in the World Bank's Disbursements Handbook and Financial Monitoring Report Guidelines. All disbursements from the Designated Account shall only be for eligible expenditures based on the agreed eligibility/financing percentage in the Loan Agreement and shall have adequate supporting documents. Attachments of supporting documents to the Withdrawal

[49] To be confirmed upon the receipt of the Borrower's selected loan choice worksheet
[50] To be confirmed upon the receipt of the Borrower's selected loan choice worksheet

Applications shall be based on threshold limits specified in the Disbursement and Financial Information Letter. The frequency for reporting eligible expenditures paid from the Designated Account would be quarterly through the IFR or as necessary. The project would be granted a four-month grace period to report these eligible expenditures to allow the submission of Withdrawal Applications and supporting documentation for expenditures incurred on or before the loan closing date.

20. Funds downloaded to RPCOs would be based on six months' disbursement forecast/requirements for the project and would be treated as advances and subject to liquidation. Subsequent funds download would be under the detailed procedures in the FM section of the Operations Manual. For Infrastructure subprojects' sub grants, the amounts disbursed to the LGUs are treated as advances and would be recorded as expenditures upon liquidation. For enterprise subgrants, funds are downloaded by the PSO to the LGUs. Funds would then be downloaded to registered IPOs based on the Enterprise Investment Agreements between LGU and IPO. Funds downloaded to IPOs would be treated by the World Bank as expenditures at the time of disbursement/funds transfer. The manner of monitoring the fund utilization and financial reporting by the LGUs are discussed in the FM section of the Operations Manual. Any amounts disbursed for the subgrants and not spent by the respective Participating LGU by the Closing Date should be refunded to the World Bank.

Figure A1.2: Funds Flow



21. **External Audit.** The Commission on Audit (COA) would audit the project Financial Statements, the auditor for all government agencies in the Philippines. COA has extensive experience in the auditing government agencies and World Bank-funded projects and is an auditor acceptable to the World Bank. The audit report would be submitted to the World Bank within six months after the end of the financial year. Early engagement of the COA auditors and agreement on the audit timelines would be obtained to prevent

substantial delays in submitting the audit reports.

Procurement

22. Processes are well defined in the MIADP-POM which largely mirror the Procurement Modules for PRDP. The existing procurement structure in the DA's Mindanao PSO and RFOs as well as in the LGUs, including the Bids and Awards Committee (BAC) and Technical Secretariat/Working Group, would directly implement the procurement at their respective levels. As the project would involve many of the same staff as those involved with PRDP, adequate capacity and procurement experience exists for implementation.

23. All procurement of goods, works, non-consulting and consulting services under the project shall be carried out in accordance with and governed by the World Bank Procurement Regulations for IPF Borrowers (dated November 2020) and the provisions stipulated on the Loan Agreement and in the Procurement Plan. The project would be subject to the World Bank's Anticorruption Guidelines (dated October 15, 2006, revised in January 2011, and as of July 1, 2016). The project would use the Systematic Tracking of Exchanges in Procurement (STEP) to plan, record, and track procurement transactions. The general description of various items under different expenditure categories, as assessed in the Project Procurement Strategy for Development (PPSD), and to be financed by the Bank are described below.

    (a) **Works.** Rural Access Roads, Bridges, Agricultural Tramline System, Small Scale Irrigation System, Potable Water System, Post-Harvest Facility/Infrastructure, Other Infrastructure. Provincial and/or city/municipal LGUs would largely procure the works contracts, consolidated to the extent practicable to attract wider competition using open national competition through RfB or RfQ method.

    (b) **Goods.** Agricultural and Forestry, ICT, Monitoring and Other Equipment, Vehicles. LGUs would procure the goods intended for the IPOs while the DA-RFOs would procure administrative support goods using open national competition, mostly through RfQ with few possible RfB.

    (c) **Consulting Services.** Technical Assistance for operations and implementation activities, and capacity building; conduct of feasibility studies and surveys, detailed engineering designs, construction supervision and quality oversight; and monitoring and evaluation support. Individual consultants would also be hired as technical experts to support the PSO, RPCSOs, LGUs and IPOs. Framework agreements on the required TA's to multiple IPOs would be used. This would be procured through DA-CO.

    (d) **Non-Consulting Services.** Other activities that may be needed to support project implementation.

24. The procurement arrangement including service standard (timelines) and oversight arrangements are detailed in the Procurement Module of the POM.

25. The applicable method of procurement for each specific contract and the Bank's review requirements (prior or post) would depend on the nature, value, and risk of each contract and are specified in the Procurement Plan approved by the Bank. For open national competitive procurement, the Philippines' National

Procurement Procedures were assessed and found to be broadly consistent with the requirement of World Bank Procurement Regulations Section V – Paragraph 5.4 National Procurement Procedures (subject to a few conditions specified in PPSD and in the project text section of the procurement plan, and would be reflected in the bidding documents, as applicable).

26. **Procurement Plan**. A Procurement Plan for the first 18 months of the project has been submitted to the Bank and would be approved by the World Bank at loan negotiations and published through the STEP system. The Procurement Plan would be updated annually, or as required, to reflect project implementation requirements and procurement risk. Contracts eligible for financing would be procured in accordance with the Procurement Plan, which defines the applicable procurement methods, estimated costs, prior review requirements and time frame.

Implementation Support Plan and Skills Mix

27. The project would require intensive support to ensure efficient implementation. The ethnic, cultural, and geographic diversity of the ICCs/IPs served by the project would require the implementation to be closely monitored in each AD. Although the project builds on established institutional mechanisms to support enterprises and infrastructure development, it would also adopt new implementation approaches that entail a considerable element of learning by doing. The social formation involved in ICC/IPs planning, investment prioritization and implementation would require significant support from the World Bank Social and Environmental Safeguards Team. The logistical requirements for these reviews would need to be planned well in advance, given the importance of ensuing ICCs/IPs are adequately informed and of making timely arrangements for transport, security, and administrative clearances for visits to ADs, LGUs, and other project sites and partners. As the project area would encompass ADs in each of the regions in Mindanao, including BARMM, it would probably not be feasible to visit more than three (3) ADs during the implementation support missions (ISMs). The goal, therefore, would be to visit ADs on a rotating basis while ensuring that all regions and BARMM (once operational) are visited at least once each year. RPCOs would be required to prepare six-monthly reports as an input to each ISM. As the project proceeds, and once systems and procedures are assessed to be operating effectively, it may become possible to supplement ISM field visits through a third-party monitoring/service provider.

28. The skills, timing, and resource requirements for the first 12 months of the project and succeeding years are shown in Tables A1.1 and A1.2. Intensive levels of support are anticipated throughout the project period given the considerable element of learning inherent in the project design. The Implementation Support Plan envisions four ISMs in the first year of implementation, i.e., two six-month full-fledged missions plus two shorter missions by a team specializing in social formation, safeguards, and fiduciary management. From the second year, bi-annual World Bank ISMs would be required.

Table A1.2: Implementation Support Plan and Skills Mix (First Year)

Team Composition	No. of Staff Weeks	Number of Missions	Comments
Co-Task Team Leaders (TTLs)	20	Four per year, including field visit travel (as warranted due to COVID)	Two TTLs (one international and one national both based in Manila)

Procurement Specialist	5	Four per year, including field visit travel (as warranted due to COVID)	One national staff
FM Specialist	5	Four per year, including field visit travel (as warranted due to COVID)	One national staff
Social Safeguards Specialists	8	Four per year, including field visit travel (as warranted due to COVID)	Two social safeguards specialists (one national and one international)
Environmental Safeguards Specialist	5	Four per year, including field visit travel (as warranted due to COVID)	One national staff
Agricultural, Rural Infrastructure, Social, MIS/M&E, conflict, and Institutional Specialists	20	Four per year, including field visit travel (as warranted due to COVID)	Four consultants (one CP/FAO, one international and two national)
Program/Team Assistant	6	Participate in mission (as warranted due to COVID)	One national staff

Table A1.3: Implementation Support Plan and Skills Mix (Starting Year 2)

Team Composition	No. of Staff Weeks	Number of Missions	Comments
Co-Task Team Leaders (TTLs)	18	Two per year, including field visit travel	Two TTLs (one international and one national both based in Manila)
Procurement Specialist	5	Two per year, including field visit travel	One national staff
FM Specialist	5	Two per year, including field visit travel	One national staff
Social Safeguards Specialists	8	Two per year, including field visit travel	Two social safeguards specialists (one national and one international staff)
Environmental Safeguards Specialist	5	Two per year, including field visit travel	One national staff
Agricultural, Rural Infrastructure, MIS/M&E, and Institutional Specialists	18	Two per year, including field visit travel	Three consultants (one CP/FAO, one international and one local)
Program/Team Assistant	6	Participate in mission, as appropriate	One national staff

ANNEX 2: Detailed Project Description

Project Areas and Implementation Criteria

1. The project would be implemented Mindanao-wide, a scope that encompasses some 135 ADs (ADs) covering some 4,176,704 hectares (ha), of which some 30 percent is considered agricultural land. In BARMM, ADs occupy some 309,702 ha and encompass 11 municipalities. Region 11 has the highest proportion of IPs located in ADs, relative to the total regional population. The same region also has the highest IP population living in ADs.

2. The eligibility criteria for participation in the project are: (a) an Ancestral Domain Sustainable Development and Protection Plan (ADSDPP); (b) Certificate of Ancestral Domain Title (CADT); and (c) at least one Indigenous Peoples Organization (IPO) recognized by the National Commission on Indigenous Peoples/BARMM Ministry of Indigenous Peoples' Affairs (NCIP/BARMM-MIPA) and registered in any of the government accrediting institutions. At appraisal 52 of the 135 ADs outside BARMM met the project eligibility criteria (Table A2.1). BARMM participation in the project is expected to commence in the second year of the project.

3. For ADs meeting the eligibility criteria, the "Implementation Readiness Criteria" would be applied after initial discussions with ICCs/IPs to ensure implementation could proceed. These include: (a) the AD is not in an area classified as an active conflict area; and (b) the responsible LGU(s) has provided a resolution confirming their support for the project. Given the limited funding and the anticipated micro to small scale of investments (particularly enterprises) under the project, the first round of support would initially be capped at PhP150 million/AD (US$3 million/AD); although this would be subject to review as the project proceeds. With this level of funding the target project coverage would be some 26 ADs.

Table A2.1: Ancestral Domains with ADSDPP and CADT per Region

Region	Number of ADs with ADSDPP and CADT
Region 9 - Zamboanga Peninsula	3
Region 10 - Northern Mindanao	9
Region 11 - Davao Region	21
Region 12 - SOCCSKSARGEN	12
Region 13 - Caraga	7
Total ADs	**52**

4. For the first year of the project, ten (10) IP communities (refer to table A2.2. below) located in the five Mindanao regions have been identified at the time of appraisal and would be prioritized for implementation. The 10 IP communities are relatively peaceful and stable communities which would increase the likelihood of project success and enable it to accumulate and distill lessons and experiences that it can apply to the succeeding IP communities which suffer from varying degrees of conflict and violence.

Table A2.2. Preliminary list of ADs with ADSPP and CADT per Region to Receive Support in First Year of Project

Location	Name of IP Group	CADT Area (ha)[52]	IP Population (2021) [53]	Background
Region 9	1. Subanen (Zamboanga del Sur and Zamboanga del Norte	20,097.9348	8,882	The Subanen (or Subanon) are called the people of the river. They are the indigenous people who are scattered throughout the Zamboanga Peninsula. The encroachment of waves of settlers has pushed the Subanens to retreat inland, particularly in the mountainous areas. This continuous struggle over the full determination over their ancestral domain is one of the biggest challenges faced by the Subanens. The Subanens have traditionally relied on agriculture, producing rice, corn, coconut, hemp, fruits (*e.g.,* bananas, melons, papayas, pineapples, jackfruits, and lanzones) and vegetables (*e.g.,* squash, eggplant). In addition, the Subanons supplement their incomes by fishing and gathering forest product. In their PSIin April 2021, the community reported that 10 percent of the community members did not attend formal schooling, while 8 percent are functionally literate. Likewise, 89 percent of the households also earn monthly incomes below Php10,000. The community also reported that poor infrastructure, such as damaged and unpassable FMRs and missing communal irrigation systems and post-harvest facilities as key challenges that affect community production.
	2. Subanon (Zamboanga City)	12,396.5726	4,196 (2020)	In 2020, around 8 percent of the AD land is declared protected area under the NIPAS and another 40 percent of the land has a slope of more than 30^0 and above. About 37 percent of the AD constitutes bodies of water. The community is engaged in the production of coconuts, rubber, and corn as the main crops, while a significant number is engaged in the livestock, especially chicken and pigs. A considerable number of community members are also into the production of cash crops. According to the community, mining companies had

[51] The data contained in this table were sourced from the initial ADAIFs and the PSI which were generated by the IP communities in 2020 and 2021. The assessment also relied on relevant data found in their respective ADSDPPs.
[52] The exact CADT area is shown. As a writing convention for this project, the rounding-off of the total CADT area is avoided to abide by the exact area surveyed and delineated by the IP group with the help of the NCIP and the MIPA/MENRE in BARMM.
[53] IP population data comes from the April 2021 PSI of each IP group, except for #2 Subanon (Zamboanga City) whose data comes from the 2020 ADAIF. Population data for all 10 IP groups would be updated in the socioeconomic assessment under Component 1.

Location	Name of IP Group	CADT Area (ha)[52]	IP Population (2021) [53]	Background
				expressed interest in exploring the mineral resources in the AD. However, the members indicated that community livelihood has always been limited to agricultural production and there is no interest to be engaged in mining activities. The relative proximity of the AD enabled it to benefit from different programs of both the government and civil society organizations. Through these programs, the community has received complementary training in agricultural and livestock production. Under the project, the community proposes the provision of production inputs and facilities, livestock, training, and infrastructure support such as FMRs, dryers, irrigation systems, and tramlines.
Region 10	3. Higa-onon/ Kalanawan (Misamis Oriental and Bukidnon)	20,083.1755	1,202	The Higaonons/ Kalanawan are known as the "people of the living mountain" or "people of the wilderness" because they were nomadic in the past traveling from one mountain to another. However, due to increasing population and arrivals of Christian migrants, most of them had to settle in specified ADs in various parts of Northern Mindanao. They are a peace-loving people as reflected in their customary/traditional peace settlement rite called "tampunhu Balagun" (or treaty of the green vine) which involves cutting vines to symbolically end disputes. The Higa-onons have also assumed stewardship of the forest over the years. However, the forest has become vulnerable to mining, illegal logging, and poaching of flora and fauna. Mining, illegal logging and the poaching of flora and fauna poses the biggest threat to the continued existence of the sacred forest of the Higaonon. The increasing population of migrant communities also add pressure to clear more forest area.
	4. Bukidnon-Tagakaolo (Bukidnon)	2,952.5138	307	The name of the IP group means 'people or inhabitants of the headwaters.' They can be found at the northern coast of Davao Gulf, the slopes of Mt. Apo, and in Sarangani province. The one located in Bukidnon is but a small community. Surrounded by the dominant Higanonons in the area, the Tagakaolo is a peace-loving community. Just like the Higaonons, their main concern is the encroachment of outsiders to their AD because of presence of lumber, fertile land and mineral resources. Traditionally, the Tagakaolo were hunters and fishers.

Location	Name of IP Group	CADT Area (ha)[52]	IP Population (2021) [53]	Background
Region 11	5. Obu-Manuvu (Davao City and Davao del Sur)	30,309.5862	22,386	The Obo-Manuvu is one of the eight Manobo groups that have been separated geographically from each other. They are generally similar in language and culture. To differentiate, the Manobos are attached to the places where they settled. The rapid development of areas contiguous to the AD makes the community exposed to extractive and intrusive activities, especially those from mining, power generation, and other similar projects. Further, the community members feel wary over attempts of external parties to impose corporate style farming and monocropping, which disregard indigenous knowledge and practices. As indicated in their May 2020 ADAIF, around 42 percent of the AD is declared protected area under the NIPAS. A large part of this is a forested area. Another 51 percent can be found in areas with slopes of 30^0 and above. The IP members are engaged both in the production of coffee, corn, rice, root crops, vegetables and soybeans, as well as in livestock such as chickens and cows. In addition, the community members are also engaged in non-agricultural commodities, mainly bamboo and ipil-ipil, firewood, limestone and quarry products, and guano fertilizers. There is a registered IPO and a robust number of farmer and clan associations overseeing different productive activities. There are also complementary planned and ongoing programs in the AD. These include DA-sponsored distribution of livestock and the establishment of a reservation within the AD. Feeder roads from the main highway to the farms, electrification, consolidation/trading centers, post-harvest facilities, warehouses, and internet connection are among the missing infrastructure identified by the community.
	6. B'laan-Tagacaolo (Davao Occidental)	42,435.9049	41,257	The ethnic group is concentrated in the provinces of Sarangani and Davao Occidental. There is a strong influence of Christians settlers as many of the B'laan can speak Cebuano, which is the dominant language used in Mindanao. They are among the ethnic groups with heavy interaction with the Christian migrants in the provinces of Sarangani and Davao del Sur. The B'laans are engaged in the production of coconut, coffee, corn, abaca, banana, cacao, and rubber. They are

Location	Name of IP Group	CADT Area (ha)[52]	IP Population (2021) [53]	Background
				also engaged in raising chicken and cattle. Both formal and informal associations that operate in the community expressed interest to be part of the project. The community is proposing the construction of FMRs and bridges, communal irrigation, and solar-powered facilities to address improve farmers' incomes. According to the community, poverty is a major concern considering that the average household income, as of 2020, was only Php5,000 per month. COVID worsened the IP condition in the area by making logistics more difficult for them.
Region 12	7. Obo-Manuvu (North Cotabato)	5,153.2092	3,603	The Manobos have been engaged in agriculture. However, the primitive practice of kaingin (swidden or slash and burn) farming method continues to this day. In 2020, the community reported that 65 percent of the households earn below Php10,000 a month. The community attributes this to limited yield, especially of rice. In upland areas, most of the crops are produced only for family consumption. Manobos have traditionally planted rice, but have also expanded to corn, root crops, fruits, and vegetables. The community plans to expand their productive capacity especially through livestock, proposing the dispersal of poultry, horses, goats, and carabaos under the project. They also propose addressing the infrastructure gap in the community. They also request proper waste disposal system including for agricultural waste and training on modern sustainable agriculture know-how. The community also identified encroachment of the coastal buffer zone as a threat to their economic activities.
	8. Manobo-Dulangan (Sultan Kudarat)	26,994.2158	3,904	As earlier noted, the Manobo tribe can be found in various parts of Mindanao, including that of Luzon, as they were the earliest migrants from the Polynesian islands surrounding the Philippines. Despite the history of violent conflict in the province of Sultan Kudarat between the Muslims and Christians, the Manobo community remains peaceful. The community members identify the lack of control and management over their ancestral domain as a major challenge, especially with the unregulated entry of migrants. The AD does not have any protected area under NIPAS, but around 85 percent of the land area in 2020 is located in mountainous area with a slope of 30^0 and above. In the remaining arable land, the IP communities produce coffee, corn, and rice.

Location	Name of IP Group	CADT Area (ha)[52]	IP Population (2021) [53]	Background
				The community reported poverty a s a major issue. In 2021, 66 percent of the households earned monthly incomes below Php10,000. The lack of access to capital to acquire farm inputs and know-how on modern farming techniques are among the challenges faced by the community. Poor infrastructure, like others, is one of the reasons for the low productivity. In addition, the community members complain that the lack of access to cheap capital makes the community members resort to loan sharks who take advantage to the IP farmers. To increase household incomes, the communities propose expanding livelihood activities, especially for women, such as vegetable farming and livestock distribution.
Region 13	9. Manobo Bunawan (Agusan del Sur)	29,899.7044	19,136	This refers to the Manobo ethnic group occupying the fringes of the Bunawan municipality in Agusan del Sur. The community has been "Christianized" with Bunawan categorized as a 1st-class municipality. As of 2020, around 46 percent of the total ancestral land area is classified as protected area under the National Integrated Protected Areas System (NIPAS). This is a significant portion of the ancestral domain that cannot be used for productive purposes, but constitutes a responsibility of the IP to protect. Another 21 percent of the ancestral land has a slope over 30^0 above, making production additionally challenging. The Manobos have long been engaged in agricultural activities. However, poor and/or inadequate infrastructure (*i.e.,* roads, bridges, and communal irrigation systems) and supplies (*i.e.,* seeds and other inputs) undermine the productivity and profitability of agricultural activities. These IPs also do not have access to basic technical knowledge on modern production. A number of farmers' associations, especially those engaged in rice and coconut production, have been organized in the AD. Through them, some level of capacity has been built.
	10. Manobo (Rosario, Agusan del Sur)	22,581.3259	18,121	The province is well-known for its rich mineral deposits (i.e., gold, silver, copper), lumber, palm oil, coconut and other forest products. In 2020, more than 80 percent of the ancestral domain is classified as protected under NIPAS and another 17 percent have a slope of at least 30^0. As such, the efficient use of productive land is critical. Manobos, in this particular AD, are engaged mainly in swine raising, as well as in the production of cacao, abaca, and rubber. Improving the economic conditions of the Manobos in the area require the provision not just of basic

Location	Name of IP Group	CADT Area (ha)[52]	IP Population (2021) [53]	Background
				infrastructure and facilities, but also of the know-how to improve their marketing, value-adding, supply management and sustainability, and value-adding processing.

Sources: ADAIFs 2020-2021; PSI 2021

Project Components

5. The project has four interlinked components designed to address the basic constraints that have led to pervasive poverty, lack of employment opportunities, and food insecurity among many ICCs/IPs in the ADs of Mindanao. A detailed MIADP-Project Operations Manual (MIADP-POM) has been agreed. It comprises separate Operations Manuals covering the five Components, Environment and Social Standards (ESS), Monitoring and Evaluation (M&E), Procurement, and Financial Management. These are living documents and would be revised as mutually agreed between the Bank and the Borrower as implementation experience evolves. The MIADP-POM is based largely on the Operations Manuals developed under PRDP, particularly for the infrastructure (I-BUILD), Enterprise Development (I-REAP), and Project Management (I-SUPPORT). Likewise, the MIADP fiduciary and M&E systems build upon the systems and procedures developed under PRDP and now mainstreamed in the DA. Additional MIADP-POM provisions have been included to guide social formation activities under Component 1 and special ESS requirements ensure full participation of ICCs/IPs in planning and determining subproject interventions.

   Component 1: Ancestral Domain Planning and Social Preparation. (US$12.5 million of which IBRD is US$10 million). This component would lay the groundwork for the project by supporting: (a) a Preparatory phase, expected to take one to three months prior to commencement of work within Ancestral Domains (ADs); and (b) a subsequent Social Preparation phase; a process expected to take at least six months upon formal entry into each AD. Social preparation would encompass a wide range of activities; from initial consultation with the Indigenous Peoples Structure (IPS), through data collection and science-based planning, to formulation of the key planning instrument; the Ancestral Domain Agriculture Implementation Framework (ADAIF). Based on priorities identified in the ADAIF, subproject Concept Proposals would be prepared for further consideration/support under Components 2 and 3. These two major outputs of Component 1 are described below:

   a) The Ancestral Domain Agriculture Implementation Framework (ADAIF). This would be derived from the ADSDPPs of the participating ICCs/IPs. The participatory planning process under MIADP would update and validate relevant sections of the ADSDPPs and use the results to inform the ADAIF. This is to ensure that the ADAIF is aligned with the development vision articulated in the ADSDPP and operationally responsive to the emerging challenges faced by the communities. The ADAIF would be approved through a resolution of the IPS and endorsed to NCIP for concurrence. In formulating the ADAIF, particular attention should be given to supporting those agri-fishery related interventions that would strengthen the sustainability of livelihoods and use of resources through promotion of climate-

resilient practices and through building upon indigenous knowledge and practices. Commodities and associated value chains to be supported through subprojects identified in the ADAIF would be based on the commodities prioritized by the DA. The ADAIF would serve as a tool for the ICCs/IPs to build partnership and mobilize resources for the implementation of the identified infrastructure and enterprise subprojects supported under Components 2 and 3. The ADAIF, therefore, serves as a platform for converging priorities and assistance to the ICCs/IPs by functioning as an input to both DA and LGU planning and investment processes. This would be facilitated through the Indigenous People Mandatory Representative to the Sangguniang Pambayan/Panglungsod/Panlalawigan, who is in a position to seek inclusion of ADAIF identified investments in LGU investment plans.

b) Subproject Concept Proposals. These would be two-page proposals of the priority infrastructure and enterprises subprojects identified through the formulation of the ADAIF that would provide the basis for further evaluation and support under Components 2 and 3. Value chain analyses (VCAs) would serve as bases for identifying crop and/or commodities and the niche for ICC/IP participation. The resulting analysis would be further enhanced by a combination of other investment planning tools used by the DA including the Rapid Market Appraisal (RMA), expanded Vulnerability-Suitability Analysis (eVSA)[54], Climate Resiliency Vulnerability Assessment (CRVA), Fisheries Vulnerability Assessment Tool, as well as safeguards and biodiversity screening (as elaborated in the PRDP-OM). A guiding principle for subproject prioritization would be that infrastructure investments should go hand -in-hand with investments designed to raise crop, livestock and/or fishery productivity, recognizing also that this should be a demand driven process. The criteria for prioritizing subprojects would inter alia include: (a) would the subproject investment contribute significantly to enhancing the sustainability of agricultural productivity, resiliency, and access to markets and services; (b) does the subproject support commodities identified through VCAs and eVSAs; (c) would the subproject benefit a significant number of the ICC/IPs; (d) can the subproject be implemented within a reasonable time frame; and (e) does the proposed subproject fall within the MIADP-financing "cap" and not unduly crowd-out other investment priorities.

Preparatory Phase

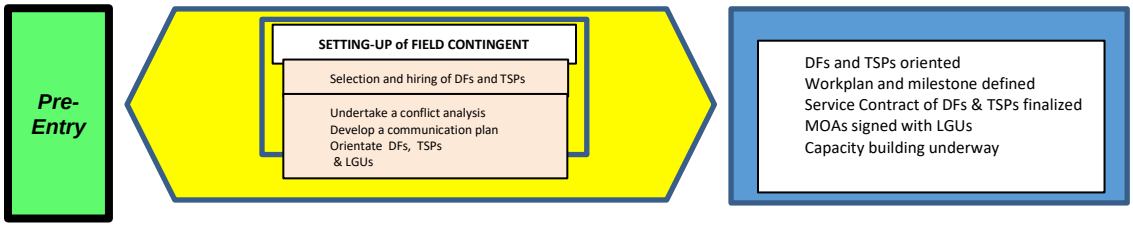
6. **This would include a range of activities to orientate, prepare and formalize agreements with key stakeholders before commencing activities in ADs.** It would involve the hiring of Development Facilitators, Technical Service Providers (TSPs), and the conduct of workshops, and training to: (a) undertake the initial contact with the Indigenous Peoples Structure (IPS) in each AD to confirm their interest and eligibility to participate in the project; (b) conduct of a brief analysis of the conflict and how it affected the selected communities, identified mitigation strategies and peace enablers and a political mapping of the political economy situation in the community; (c) develop and implement a communication plan including conduct of project orientation and awareness raising events to inform all

[54] Value Chain Analysis (VCA) is a tool now widely used by the Department of Agriculture to analyses the linkages and gaps from production through marketing, logistics, processing and ultimate sale to the consumer. The expanded Vulnerability and Suitability Analysis (eVSA) is a GIS-based tool that takes into account the combined analysis of vulnerability and suitability as well as socio-economic conditions of a particular area. The information is used to enhance targeting of interventions and strategies that enhance climate resilience of production and investments.

stakeholders[55] of the project's goals, sequencing of activities, roles and responsibilities; (d) sign MOAs between the DA and the concerned LGU(s) confirming their roles and support for the project; and (e) capacity building and training on climate-smart value chain development for Development Facilitators, TSPs, DA and LGU staff and other stakeholders (Figure A2.1).

7. **Building on the accumulated experiences of the on-going PRDP, the project would adopt a conflict sensitive approach**. By design, the project would exclude any ADs which have ongoing or active violent conflicts. Nevertheless, the project would conduct due diligence to follow the principle of doing no-harm in the FCV context by following a phased approach to allow adequate time for assessment of conflict sensitivity and dynamics, and for confirmation with LGUs of "no active" conflicts. Thus, under component 1, at the Preparatory Phase, a brief historical analysis would be prepared of conflict in communities and how they have been affected, mitigation strategies, peace enablers and a mapping of the political economy.

Figure A2.1 Key Activities to be Undertaken
Prior to Commencing the Social Formation Engagement with ICCs/IPs



Social Preparation Phase

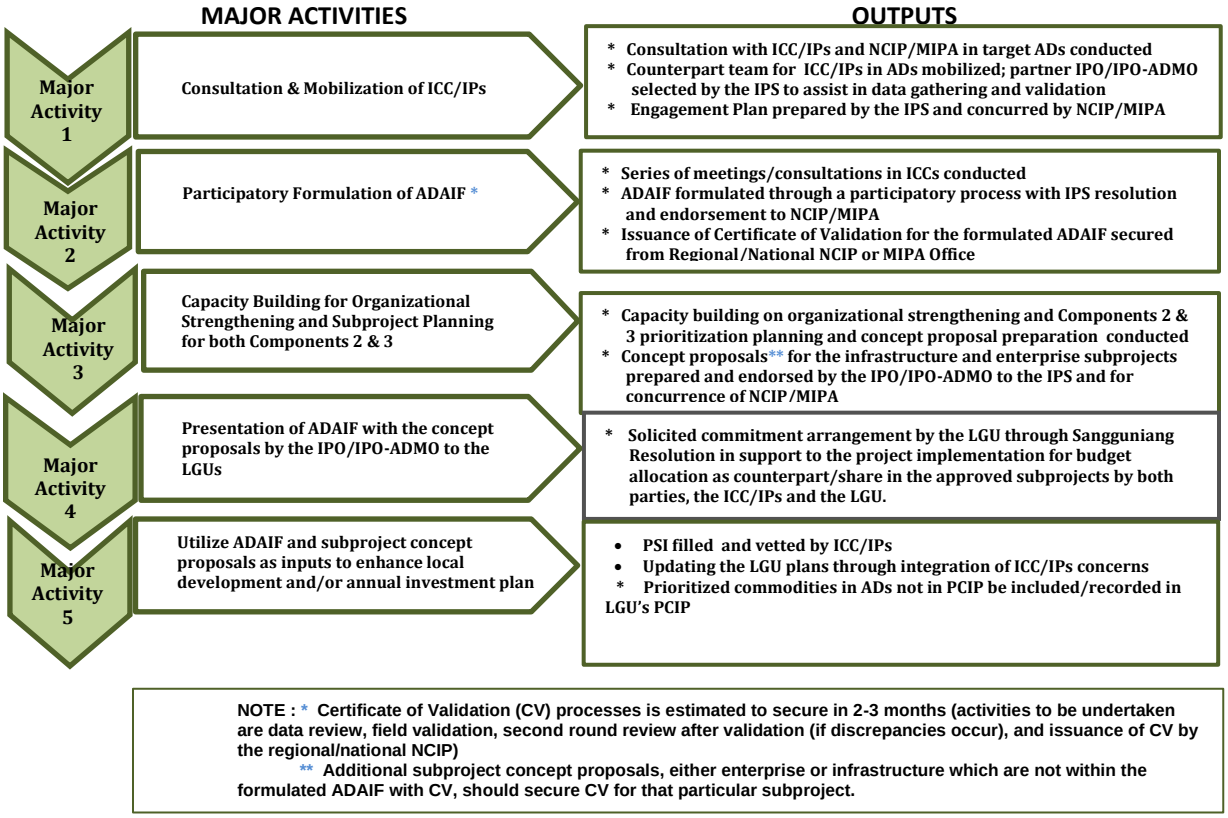
8. **This is expected to take at least six months for each AD. It would encompass a range of activities that collectively would lead to the formulation of the ADAIF and subproject Concept Proposals**. This would involve communication and awareness-raising events, organizational and capacity-building workshops, and technical training, e.g., land management; modern, climate-smart approaches to farming and fishery development; marketing skills incorporating digital technologies; and mechanisms for building and facilitating alliances with cooperatives, businesses, and NGOs outside the ADs. It would be designed to strengthen the knowledge base and capacities of ICCs/IPs and IPOs to develop or expand climate-resilient agri-fishery production, handling, processing, and/or marketing enterprises.

9. **The major Social Preparation steps are illustrated in Figure A2.2, while sub-activities are detailed in the POM**. They would be supported through Development Facilitators, Technical Service Providers, DA and LGU staff, as well as through workshops, training and studies. Activities include: (a) workshops, and training to build organizational and planning skills and market orientation for ICCs/IPs and Indigenous People's Organizations (IPOs) for potential enterprise support under Component 3; (b) preliminary social investigation and collection of baseline data including gender-disaggregated data collection on the ICCs

[55] Stakeholders, apart from the ICCs/IPs, would include DA agencies/bureaus, local government units, state universities and colleges, other national government agencies, NGOs and private sector interests.

and existing IPOs as critical inputs to the ADAIF (to be done in a participatory manner and in conjunction with the M&E team-Component 4); (c) studies to prepare Value Chain Analyses (VCAs) and eVSAs[56], and associated technical studies to establish the suitability of commodities and infrastructure being proposed in the ADAIF; (d) preparation of subproject Concept Proposals based on the ADAIF, which with IPS approval, would provide the basis for support under components 2 (infrastructure) and 3 (enterprises); (e) training on climate information systems, climate risks, and climate smart options, along with training on mitigation measures enabling more climate-resilient agricultural development; (f) technical assistance to strengthen IPO entities including their registration and development of alliances with cooperatives, businesses, and NGOs outside the ADs; and (g) transport and related logistical support given the remoteness of many ADs. Building on PRDP experiences, to the extent possible, the commodities to be introduced in the ADs would be aligned with the existing PCIPs. However, due to the nature of the livelihoods of the IPs in the ADs, new commodities might be added which are not in the existing PCIPs, which would be updated accordingly (Figure A2.2).

Figure A2.2 Major Activities and Outputs under Component 1



[56] Value Chain Analysis (VCA) is a tool now widely used by the Department of Agriculture to analyse the linkages and gaps from production through marketing, logistics, processing and ultimate sale to the consumer. The expanded Vulnerability and Suitability Analysis (eVSA) is a GIS-based tool that takes into account the combined analysis of vulnerability and suitability as well as socio-economic conditions of a particular area. The information is used to enhance targeting of interventions and strategies that enhance climate resilience of production and investments.

10. **Given the diversity of cultural, socio-economic, geographic and capacity conditions and circumstances across the ADs, the sub-activity implementation requirements would necessarily not be over prescriptive.** Key elements of the social preparation would also include:

    a) Establishment of basic data on each participating AD for informed decision making. This would be done through participatory processes designed to empower ICC/IPs through a collective understanding of their situation, and as the basis for consensus building for their proposed subprojects. The methodology and nature of the data to be collected would be determined in conjunction with the M&E (Component 4) activities to ensure consistency with data collection and analyses to be undertaken at mid-term and project completion.

    b) Balance preservation of indigenous best practices while introducing adaptive technologies for improved productivity. From social preparation to community and IPO implementation, a focus would be maintained on sustaining those indigenous agricultural practices that could be revived or preserved as well as on introducing improved technologies that are culturally acceptable.

    c) Learning -by- doing. The project, building on the M&E system under PRDP, would give particular attention to monitoring the need for adjustments in processes/protocols during implementation, as well as the capture of strategic lessons surrounding the special risks/challenges that confront projects in ADs.

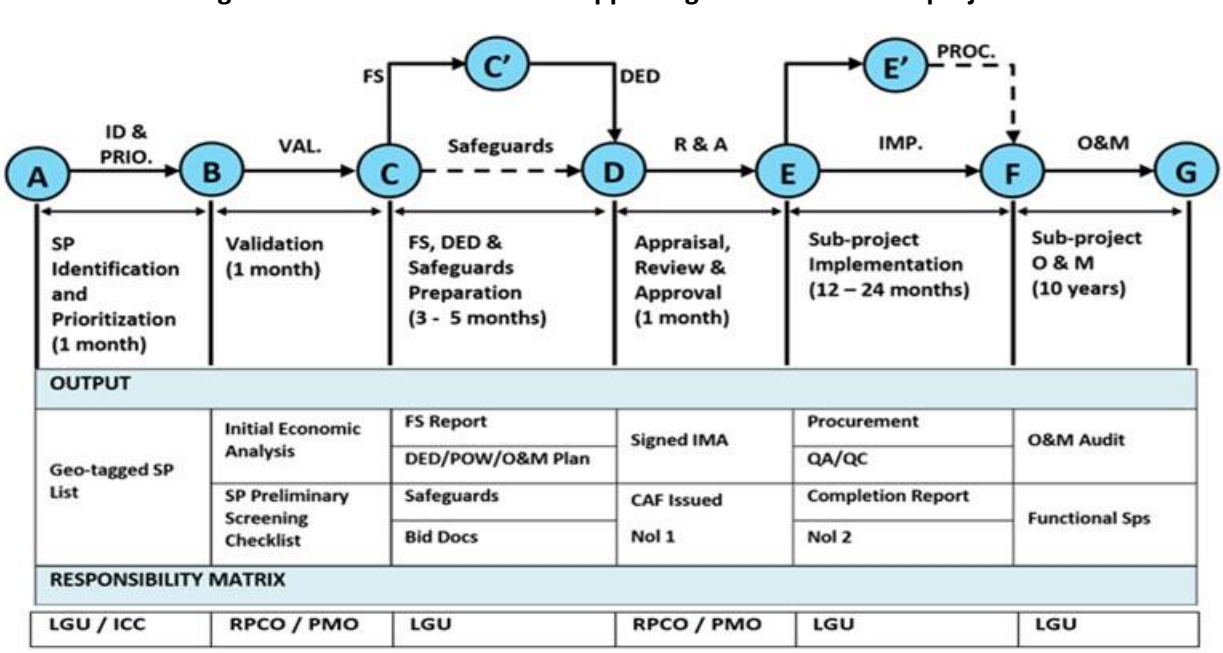
11. **Component 2: Resilient Ancestral Domain Agri-Fisheries Infrastructure. (US$80.19 million of which IBRD is US$64.16 million).** This component would increase the resilience of ADs by providing climate-proofed infrastructure identified through ADAIF-based Subproject Concept Proposals to strengthen food supply and value chains, including infrastructure that improves physical access to markets. This component would finance: (a) subgrants to LGUs for the implementation of infrastructure subprojects to strengthen supply and value chains, including: (i) rehabilitation and repair of roads (one and two-lane) and bridges (single lane bridge and suspension foot bridges connecting ADs to market centers[57]; (ii) rehabilitation and repair of access roads (one and two-lane) between agricultural areas and sitios[58] in ADs; (iii) supporting new and the rehabilitation of agricultural tramline system; (iv) small-scale irrigation systems (spring water development, hydraulic ram pumps, and solar-powered irrigation systems); (v) construction or rehabilitation of potable water systems (Levels 1 and 2)[59] with piped network that uses energy more efficiently and are resilient and can cope with the climate variability; and (vi) post-harvest infrastructure for agriculture and fisheries (e.g., storage facilities, trading posts and use of solar panels for renewable energy generation in post-harvest facilities to power small equipment and light fixtures); and (b) technical assistance to the LGUs for the implementation of the subprojects. All infrastructure subprojects would

[57] Infrastructure would consist mostly of small-scale civil works constructed within the AD, except in the case of access roads where extension beyond the AD would be required to link with a connecting road.
[58] A barangay is the smallest political unit in the country. A sitio in the Philippines is a territorial enclave that forms part of a barangay.
[59] Potable water includes Level 1 and 2 systems with a communal water point (such as a borewell or spring system) serving an average of 4–6 households within a 25-meter distance.

be within the ADs, except in the case of access roads where extension beyond the AD would be required to link with a connecting road.

12. The criteria and procedures for preparing, reviewing, approving and financing of the infrastructure subprojects would adopt those defined in the well-established PRDP I-BUILD Manual, except as specifically modified to meet the unique requirements for ICCs/IPs. These are elaborated in the MIADP-POM which is aligned with Department of Public Works and Highway (DPWH) Design Guidelines, Criteria and Standards and the DA's Bureau of Agricultural and Fisheries Engineering (BAFE)[60]. This *inter alia*, provides climate-proofed technical planning parameters for rural infrastructure. LGUs, through the Implementation Management Agreements (IMAs) for each subproject, would be required to provide Operation and Maintenance (O&M) for the completed infrastructure. This would be supplemented through the web-based system also developed under PRDP (including the web-based ROMAT and other digital tools) for monitoring compliance with O&M of completed infrastructure facilities and for setting limits on additional financing under the project for those LGUs with unsatisfactory O&M compliance. Key steps from subproject identification through implementation are illustrated in Figure A3.2. Cost-sharing arrangement would be of 80:10:10 (loan proceeds, government counterpart, LGU).

Figure A2.3: Flow of Activities Supporting Infrastructure Subprojects



13. **Component 3: Ancestral Domain Agri-Fisheries Production and Enterprise Development. (US$20.52 million of which IBRD is US$16.41 million).** This component would support registered IPOs identified in the ADAIF to develop enterprises that increase their agricultural productivity, resiliency, and access to markets and services. It would integrate natural resource management, climate-smart agricultural

[60] These standards include DPWH Department Order (DO) No. 112 (s. 2019), DPWH Department Administrative Order No. 16 (s. 2020), and Philippine National Standard for Agricultural Infrastructures – Farm-to -Market Roads – Concrete Roads (PNS/BAFS PABES 2892019), among others.

practices, and indigenous knowledge systems and practices into enterprise subprojects to ensure investment sustainability and build climate resiliency. This component would finance: (a) subgrants to the LGUs and their registered IPOs identified in the ADAIF for the implementation of climate-resilient Enterprise Subproject Concept Proposals, to strengthen their capacity across the value chains, including input supply, production, postharvest operations, consolidation/assembly, and processing; and (b) technical assistance to such registered IPOs in the areas of: (i) financial literacy, accounting, procurement, and preparation and implementation of climate-informed business plans; (ii) climate-smart agricultural practices (i.e., stress-tolerant varieties such as drought-resistant seeds, greenhouses, crop diversification, integrated pest management, drip irrigation, construction of rain shelters, use of energy-efficient machineries), post-harvest handling, storage, marketing, and processing (i.e., solar dryers, climate-resilient warehouses, trading posts, and use of small refrigeration equipment and proper packaging to reduce food loss and waste); (iii) field demonstrations for climate-smart agricultural and fisheries practices and technologies and facilitating access to weather-related information; and (iv) facilitating access to finance/credit, markets, and services, and the formation of public-private partnerships.

14. Technical Service Providers (TSPs) would be contracted to complement the technical support from DA-RFOs, MAFAR and LGU staff in such areas as: (a) training in enterprise financial literacy, accounting, procurement, preparation and implementation of Business Plans; (b) post-harvest handling, storage, marketing, and processing; (c) weather-related information and field demonstrations of climate-smart agricultural and fisheries practices and technologies (crop diversification, integrated pest management, drip irrigation, construction of rain shelters, etc.); and (d) facilitating access to finance, markets and services, and the formation of public-private partnerships. The DA and LGU technical staff would also facilitate support through other food security programs, e.g., DA's Commodity Programs.

15. The enterprise subprojects would follow a cost-sharing arrangement of 80:10:10 (loan proceeds, DA counterpart, and LGU counterpart). In addition, a differentiated approach would be used for the IPO counterpart contribution in line with the Commission on Audit (COA) Circulars 2007-001 and 2012-001 and would depend on the size of the subproject grant, which would be divided into micro, small and medium-sized enterprises. IPO contribution would be required mostly in-kind. Table A2.2 describes the proposed differentiated approach, which would be further elaborated in the POM. LGUs, NGOs and other stakeholders/support groups would be encouraged to also provide funds to finance the IPO business plans.

16. Procurement would be undertaken by the LGUs and IPOs with support from the project. For each enterprise supported, the roles and responsibilities of the IPO, DA, TSP and LGU would be spelled out in an IMA, based on procedures established under PRDP.

Table A2.2: Differentiated Approach for Funding of IPO Enterprise Subprojects

	Micro-Enterprise Subproject	Small-Enterprise Subproject	Medium-Enterprise Subproject
Subgrant Amount	Less than PhP3 million (<US$57,000)	PhP3-15 million (US$57,000-285,000)	Above PhP15 million (Above US$285,000)

Cost Sharing Arrangement for the subgrant	80% loan proceeds 10% DA counterpart 10% LGU counterpart	80% loan proceeds 10% DA counterpart 10% LGU counterpart	80% loan proceeds 10% DA counterpart 10% LGU counterpart
Grant Recipient	LGU (with IPO as sub-grantee)	LGU (with IPO as sub-grantee)	LGU (with IPO as sub-grantee)
Grant Financing Funds Flow to IPO	All funds would be released to the LGU. However, portion of the grant to support operational expenses of the IPO would be transferred by the LGU to the IPO.	All funds would be released to the LGU. However, portion of the grant to support operational expenses of the IPO and for payment of all goods and works procured through Community Participation/Community Forced Account would be transferred by the LGU to the IPO.	All funds would be released to the LGU. However, portion of the grant to support operational expenses of the IPO and for payment of all goods and works procured through Community Participation/Community Forced Account would be transferred by the LGU to the IPO.
IPO Counterpart[61]	20% of the actual cash received by the IPO for operational expenses.	20% of subproject grant fund received by the IPO.	20% of subproject grant fund received by the IPO.
a. Cash Counterpart	Not mandatory	Not mandatory	2.5% of subproject grant
b. In-Kind Counterpart	20% of operational funds released to the IPO. (Operational cost would only be financed by the project for the first two years. For the third year, the IPO would have to finance its operational costs itself.)	20% of subproject grant	17.5% of subproject grant
Subproject Procurement	Procurement would be undertaken by both the LGU and IPO.	Procurement would be undertaken by both the LGU and IPO.	Procurement would be undertaken by both the LGU and IPO.

17. **Component 4: Project Management and Support, Monitoring, and Evaluation. (US$11.79 million of which IBRD is US$9.43 million).** This component would finance technical and operational support for project oversight and management, including complementary staffing, office, logistical and administrative requirements (e.g., financial management, procurement, environmental and social impact management, grievance redress, conflict sensitivity, Management Information (MIS) and Monitoring and Evaluation (M&E)).

18. The project would build upon the existing organizational, staffing and administrative protocols and procedures under the DA, which have been mainstreamed through PRDP. As such, significant staffing, administrative and MIS/M&E synergies with PRDP would be achieved in undertaking the project

[61] This is contribution from IPO on top of the sub-grant amount to be received.

management, administrative and technical functions of MIADP. In addition, given an importance of the conflict sensitivity, FCV expert would be hired on part time basis. (There is no conflict sensitivity specialist in the PRDP staff).

19. **Component 5. Contingent Emergency Response (CERC) (zero allocation)**. A Contingent Emergency Response Component (CERC) is an ex-ante mechanism available to the Government to gain rapid access to financing to respond to an eligible crisis or emergency. This component would allow for rapid reallocation of uncommitted project funds towards urgent needs in the event of a disaster (geophysical, climate-related, or man-made), or public health emergency. Such events may include typhoons, floods, earthquakes, volcanic eruptions, droughts, and disease outbreaks. There is flexibility in establishing the level of evidence needed to activate this component including, but not limited to, issuances such as the declaration of a State of Calamity by the mandated national or subnational authority, or a State of Public Health Emergency. The agreed trigger would enable reallocation of uncommitted project funds to support immediate response and recovery needs from other project components. Disbursements would be made against a positive list of critical goods, civil works, and consulting services required to support the immediate response and recovery needs. The potential CERC-financed activities would: (a) be aligned with the main project activities; (b) follow the project's implementation arrangements; and (c) be based on DA's mandate under the various emergency response and contingency plans. Detailed descriptions and procedure are determined in the POM.

20. Building on the on-going PRDP set-up, there are robust procedures in place for supervision should one of the targeted ADs turn into an active conflict. Specific responsibility for monitoring and initiating action in the event of armed conflict would through the Social & Environmental Safeguards (SES) Unit, in consultation with the PSOs. Risks associated with operating in conflict areas would be assessed on an ongoing basis by the DA's safeguard unit and included in the screening and assessment process included in the ESMF and mitigation measures in the ESMP. LGUs are responsible for developing safety and security protocols as part of the MOA with the DA in case a conflict erupts in the course of implementation. This would be anchored in indigenous peace building and conflict mediation mechanisms that build on considerable experience within the DA from prior incidents. In case of the activity suspension due to intensified conflicts, the project would continue to use remote monitoring mechanism through existing remote monitoring mechanism developed by PRDP through using GIS-enabled camera, and by using satellite maps, as well as keeping in touch with the concerned LGUs. These security procedures, including provisions for suspending works/contracts are detailed in the POM-Component 4.

ANNEX 3: Managing Environmental and Social Risks for Agricultural Development in Indigenous Communities

1. **MIADP focuses on ADs where poverty, lack of livelihood opportunities and education are pervasive and basic social services, infrastructure and facilities are inadequate.** The ADs are typically, isolated due to poor roads, telecommunications, and limited electrical power. They are vulnerable to harsh weather conditions as well as to influence of armed groups. This has discouraged government and private programs from encompassing ADs/ICCs in other programs. Cognizant of these baseline conditions, MIADP has set criteria for selecting its target ADs to address fundamental risks such as unstable land ownership, absence of formally recognized IP organizations, security issues; and limited IP engagement with government programs and agencies (Box A3.1).

Box A3.1. Summary of Operational Issues Considered in Designing the Project

a) **Inadequate baseline data.** There are multi-dimensional reasons for the dearth of baseline data and information about ADs/ICCs. National or household surveys largely miss ICC/IPs because: (i) they are geographically isolated and sometimes deliberately passed-over since they are small in numbers; (ii) enumerators do not speak the indigenous language/dialect; (iii) IPs do not have required documentary evidences (e.g., birth certificate or government-issued IDs); and (iv) survey questions often do not fully take account of indigenous culture (e.g., communal land ownership; governance structure; traditional basic services). IPs may also be reluctant to participate in surveys fearing they may be used for eviction/displacement, land grabbing, militarization etc. COVID-19 travel restrictions prevented field data collection during preparation and reviews of ADSDPPs, NCIP/MIPA and other reports yielded little additional information. ADSDPPs do, however, provide a profile of ICC/IP aspirational development goals and existing IP organizations (IPOs) that provide an operational basis for implementing MIADP.

b) **Striking the balance between preservation of indigenous practices and advancing access to modern technologies to improve quality of life.** While ICC/IPs are actively pursuing Certificates of Ancestral Domain Title (CADT) to have legal control of their ancestral lands and maintain traditional ways of life, many are also seeking to have access to aspects of modern life as a way out of poverty. The challenge in providing assistance to ICCs/IPs in ADS is therefore to avoid undermining indigenous practices and systems while recognizing that some IPs aspire for mainstreamed standards/norms that gradually dissipates their cultural heritage. Achieving this balance through MIADP would be through ensuring full participation of ICCs/IPs in planning and investment decisions, and through ensuring the detailed Environmental and Social Safeguards defined in the MIADP-POM are strictly followed.

c) **Developing partnership arrangement between indigenous governance structures and LGUs.** As defined in their respective ADSDPP, each AD has its own Indigenous Political Structure (IPS) that is not necessarily aligned with a single local government unit. ADs often have geographic boundaries that straddle two or more municipalities or even provinces. ICCs/IPs rely on LGUs and national government agencies to support their plans, but most go unfunded as priorities for investments are mostly focused on lowland areas. Overcoming this reality is a goal of MIADP and would require a new approach to strengthening partnership arrangement. The challenge would be to build the capacities of IPS to be engage with multiple LGUs within operational protocols/procedures (upward accountabilities) as well as build the capacities of LGUs to provide an enabling environment for IPS (downward accountabilities). One of the potential opportunities is through a Government requirement for inclusion of a mandatory IP Representative as LGU Council Member. This linkage would be further developed under the project.

d) **Addressing gender gaps.** Indigenous women typically have limited access and control over productive resources, and they typically have little participation or representation in decision-making within the IPS. In compliance with the Magna Carta of Women (Republic Act No. 9710, DA has integrated gender dimensions in its plans and budgets, including in its programs and projects such as MIADP. A gender gap study prepared for the project indicated that many women would rather leave farm work to the men in the household. MIADP intends to increase IP-women's access to economic opportunities but would have to define an approach that would be culturally sensitive to IP communities while broadening their development perspective, rather than cause divisiveness among the IPs.

Environmental Conditions and Sustainable Approaches

2. **The ADs comprise sprawling lands of different types, landscapes and watercourses that include plains, valleys, hills, mountains, rivers, lakes, and coastal zones**. The IPRA law recognizes ADs as private lands that are collectively owned by the ICCs/IPs. Meanwhile, there are also portions within the ADs that are considered as public domain by the Philippine Constitution. The official land classification of public lands are as follows: (a) forests; (b) agricultural; (c) minerals; and (d) natural parks. Under the Local Government Code, private and public lands are locally managed by the LGUs under their Comprehensive Land Use Plans. Given the different policies and agencies mandated to govern ADs, the project would have to carefully delineate these lands. MIADP subprojects, therefore, would need to consider the physical, geological, and biological characteristics of the target location to ensure that there would be no conversion of natural habitats and threat to biodiversity or disruption of ecosystem services in the project sites. The relevant Environmental and Social Standards in the project's Environmental and Social Management Framework (ESMF) would be fully applied during the preparation and implementation of the subprojects.

3. **Access to the environment and natural resources is vital to the sustainability of the cultures and livelihood systems of the IPs.** The IPs' environment and natural resources management practices and the long-term sustainability of such practices have helped protect and conserve many of the remote places. On the other hand, the lack of interaction and support from the public and private sectors for basic services, knowledge and skills upgrading for agricultural production, have limited the IP households' capacity to provide food, shelter and opportunities for livelihood and income generation. Mostly relying on nature to meet their daily and long-term needs, a number of IPs have resorted to overharvesting and trial-and-error agricultural methods that have resulted in low productivity and creeping environmental degradation. A strategic approach that the project is following is to apply restorative agriculture that would produce optimal yield yet rehabilitate degraded ecosystems. For each agricultural or consumer product that would be developed and produced, a sustainable value chain analysis would be conducted to ensure environmentally sound, green and resilient infrastructure and sustainable livelihoods are put in place.

4. **There are also cases where the IPs do not occupy a cohesive space or territory**. Many share their areas with non-indigenous families or even development corporations. Private agribusiness, logging or mineral companies may also have concessions within the ADs. These result to limited IP access to these lands and have caused environmental damage over the years. Through the project, therefore, it would be important to strengthen governance to prevent further illegal intrusion or encroachment. Under the project, a thorough review of the project locations would be conducted, with a site assessment and compliance to rules and regulations as a first step in the environmental and social screening. This would be critical to avoid intrusion into environmentally sensitive ecosystems such as protected and conservation areas, primary forests and natural parks. It is also necessary to provide the technical assistance to strengthen IP knowledge, skills and capacities to adopt simple, climate-resilient, smart agricultural practices and technologies that are practical, cost-effective and easy to implement.

Key Design Features

5. While the assessed risks are substantial, and not-withstanding the COVID-19 travel restrictions, the DA and **Bank** team were able to conduct several face-to-face field consultations (before the pandemic) in ADs. There have also been several virtual meetings and workshops and consultations with a broad range of stakeholders, including provincial, municipal and barangay LGUs as well as academic, private and other civil society organizations that have worked with ICCs/IPs. Key lessons drawn from the Philippines and international experiences that have shaped the project design are summarized below (Box A3.2).

Box A3.2. Key Lessons and Actions to Mitigate Social and Environmental Risks under the Project

a) **Agricultural development as an output objective.** This would be through participatory process which would be a major task during social preparation stage (Component 1). The participatory data collection and analysis would ensure that the data base would not only serve as a management tool and ensure data validity but, also as a tool to empower the IPs as basis for consensus building for their subprojects and for developing the agenda to enhance their capacity to implement their subprojects. Data collection and assessment would be undertaken with the support of Development Facilitators (Annex 2). Eligible IPOs would participate in data gathering and analysis which would include their agricultural situation, conflict mapping, environmental conditions, gender gaps and other social dimensions that could impact on their agricultural development goals and enhance social cohesion in the long run.

b) **Providing sufficient time for social preparation.** Based on experiences from similar community-based initiatives, social preparation can be expected to take an average of 3-6 months, depending on the specific AD locations and accessibility. In recognition of the isolation and other challenges in the context of ADs, the project is designed to allow a full year of social preparation. This would provide sufficient time for process of broad participation that would involve considerable mentoring/coaching, given the collective challenges of physical access, limited capacities in ADs, limited AD engagement with government projects, communication barriers, cultural dimensions, and unpredictable weather conditions.

c) **Balanced approach between preservation of indigenous best practices and introducing adaptive technologies for improved productivity.** From social preparation to community implementation, the MIADP would systematically support the participating IPOs in analyzing and documenting the indigenous agricultural practices that could be revived or preserved as well as in identifying adaptive technologies that would are culturally acceptable. This would involve the mobilization of Technical Service Providers (TSP) who are sufficiently familiar with the culture of the target ADs and have demonstrated competence in engaging them to adapt innovations for purposes of their identified subprojects (Annex 2). A mapping of the local service providers has been initiated by the DA which would be followed by vetting their eligibilities as well as possible accreditation to ensure preparedness for project effectiveness. Service providers or community of experts on indigenous agricultural initiatives would also be invited as external advisers and/or members of the project structures at national and local levels. The mobilization of TSP and/or local partners would avoid and overly prescriptive approach that would provide some flexibility in approach, while also adhering to the key project design requirements.

d) **Representation of IPs in project organizational structures at all levels of project planning and decision-making process.** The National Commission on Indigenous Peoples (NCIP) and BARMM (MAFAR, MIPA and MENRE) are major partners in the implementation of MIADP at national and sub-national levels. NCIP representatives would play an important role in formulating and reviewing the operational policies, including the MIADP-POM and capacity building plans. The NCIP and BARMM would likewise participate in reviewing subprojects and providing technical assistance in implementing AD subprojects in relation to promotion of indigenous culture and compliance to the relevant provisions of IPRA Law. NCIP and BARMM would facilitate the dissemination of the lessons learned from MIADP implementation. At the provincial level, the mandatory IP representative would be a regular member of the local project structures to ensure that the proposed AD community subprojects would support by the concerned LGU and facilitate the sustainability of the subprojects beyond the life of the project.

e) **Building capacities and knowledge products.** The DA and the World Bank would also undertake process documentation of the implementation. Implementation of MIADP would require a significant element of “learning-by-doing”. This would be necessary both to allow real-time adjustments in processes/protocols during implementation milestones, as well as to build and share best practices. The project would also ensure thematic and special studies to fully capture the strategic lessons learned, particularly those lessons that address the considerable risks and challenges that confront projects in ADs.

ANNEX 4: Economic and Financial Analysis

Rationale for Selecting Interventions for the Analysis

1. This economic and financial analysis (EFA) is based on desktop research and field interviews conducted during a preparatory mission in February 2020, and supplemented by information consolidated from existing ADSDPPs, early drafts of inputs to the ten ADAIFs and data from the Department of Agriculture's experiences in implementing PRDP. The results should be considered strictly as ex-ante outcomes. Each AD participating in the project is likely to have somewhat different circumstances, business possibilities, and preferences regarding the interventions to be implemented using MIADP funding. The selected interventions (table A4.1) are considered as representative of potential activities.

2. The analysis focuses on the infrastructure and enterprise development investments of the MIADP. The infrastructure investments include: (a) rehabilitation of farm-to-market roads (FMR); (b) construction/rehabilitation of bridges; (c) construction of small-scale irrigation projects (SSIP); (d) installation of potable water systems (PWS); and (e) construction of agriculture tramline systems. It is assumed that the selected ADs lack proper access to the main road and central markets, which significantly impedes their marketing activities. The project would fund the rehabilitation and construction of access roads and transportation facilities (i.e., tramlines) connecting the ADs to the main road to correct this market failure. It is also assumed that ADs would require funding to establish SSIPs to improve agricultural production and productivity through better water management and improved water availability. Potable Water Systems would also be provided in communities lacking access to clean water to improve the health of the general population. The infrastructure subprojects would supplement and spur the adoption of innovative agricultural practices and enterprise activities of farmers and fishers in the ADs. Fourteen enterprise subprojects, varying in scale and scope, were modelled to represent potential enterprise activities based on the prevalent commodities produced in the ADs (table A4.1). These were further classified into enterprise subproject categories, namely, micro-enterprises with less than PhP3 million budget, small-enterprises ranging from PhP3 million to PhP15 million, and medium-enterprises with an investment requirement over PhP15 million.

Table A4.1: Matrix of Proposed MIADP Interventions for the EFA

Type of Subproject	Brief Description	Expected Impact
I. Infrastructure		
1. FMR	This infrastructure subproject focuses on the rehabilitation of two-lane, one-lane and other access roads connecting the ADs to market centers to facilitate the access to the greater AD community and encourages marketing activities.	Improved access to markets and improved accessibility to the greater AD community - Reduced travel time - Reduced hauling (input/output) costs - Increased marketable outputs (reduced transportation losses)
2. Bridge	This infrastructure subproject involves the construction of single lane RC bridge and steel hanging bridge connecting the ADs to market centers to facilitate the access to the ADs and encourages marketing activities.	Improved access to markets and improved accessibility to the greater AD community - Reduced travel time

Type of Subproject	Brief Description	Expected Impact
		- Reduced hauling (input/output) costs - Increased marketable outputs (reduced transportation losses)
3. Small-Scale Irrigation Project (SSIP)	The irrigation subprojects of MIADP focuses on the construction of small-scale irrigation projects such as spring development, solar power pump irrigation system (SPIS), ram pump, and small water impounding project (SWIP) to improve agricultural production and productivity through better water management and water availability.	Improved productivity - Increase in cropping intensity - Increase in yield
4. Potable Water Supply (PWS)	This type of infrastructure subproject focuses on the construction or rehabilitation of Level 2 potable water systems. This aims to promote better community health by reducing incidence of water-borne diseases.	Reduced incidence of water-borne diseases. Improved capacities to undertake additional economic activities - Reduction in medical expenses - Reduction in morbidity and mortality incidence - Time savings from water fetching
5. Agriculture Tramline System	This subproject is intended for the mountainous areas of the ADs to facilitate the hauling of agricultural products. This would help address the high cost of hauling and transportation losses. This involves the construction of new or rehabilitation of existing agriculture tramline systems.	Improved accessibility to greater community and access to market - Reduced hauling (input/output) costs - Increased marketable outputs (reduced transportation losses)
II. Enterprises		
A. Micro- Enterprises		
1. Rice Production	This enterprise would support the production segment of the value chain of rice through the provision of production inputs such as improved seeds and fertilizers. The aim of this enterprise is to help the farmer-beneficiaries attain higher yields resulting to increase in income.	Increased rice yield, increased volume of marketable output, increased income of rice farmers.
2. Rice Farm Mechanization	This enterprise would support the production segment of the value chain of rice through the provision of farm machineries, such as mini-tractor and hand tractor. This intervention would help reduce the production cost of the farmers by lessening the labor requirement of land preparation as well as increasing the efficiency of operation.	Increased efficiency of operation and reduction in production cost in rice farming.
3. Corn Production	This enterprise would support the production segment of the value chain of corn through the provision of production inputs such as improved seeds and fertilizers. The aim of this enterprise is to help the farmer-beneficiaries attain higher yields resulting to increase in income.	Increased corn yield, increased volume of marketable output and increased income of corn farmers.
4. Poultry Production and Marketing (Native Chicken)	The proposed enterprise would involve breeding, production, and marketing of fresh eggs and fattened chicken. This enterprise aims to support the gap in the production segment of the value chain of Native Chicken specifically on the insufficiency of stocks available for fattening as source of meat. The enterprise aims to help increase the	Increased volume of poultry production and increased income of farmer-beneficiaries.

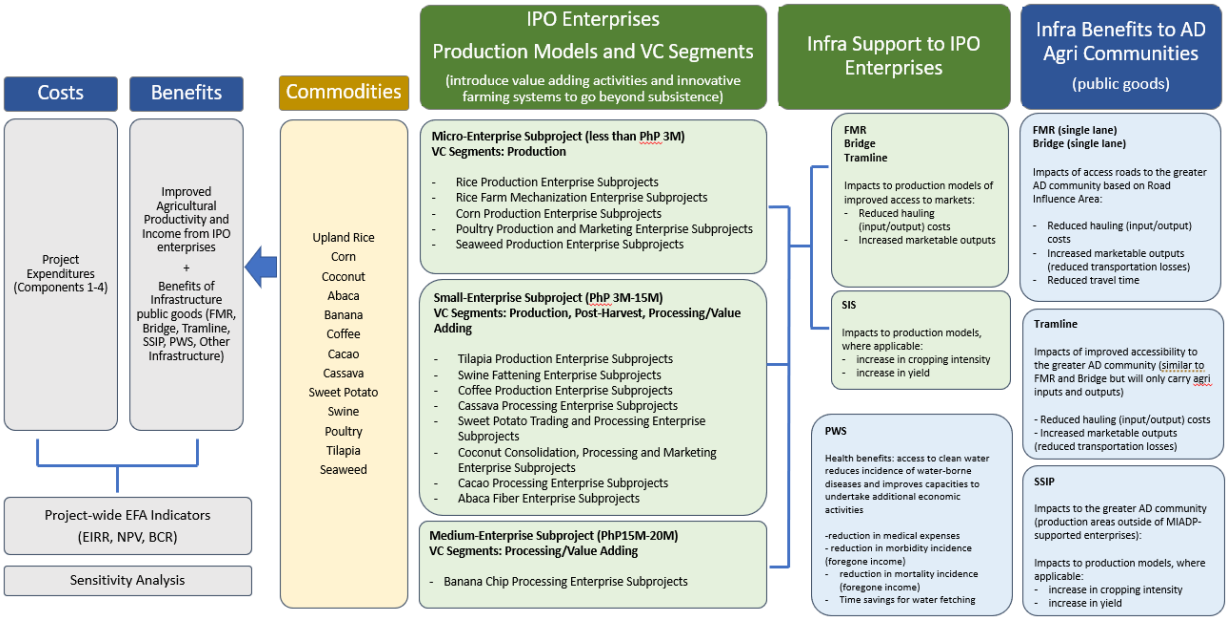
Type of Subproject	Brief Description	Expected Impact
	income of the farmer-beneficiaries and would help create employment as additional source of income of the locals.	
5. Seaweed Production	This enterprise would help address the constraints on input provision and lack of post-harvest facilities. Seaweed farm produces good quality seedlings and seaweed dryers would be provided and made available to seaweed-beneficiaries. The enterprise aims to increase seaweed production and increase average annual income of the seaweed-beneficiaries. Additionally, the enterprise would help create employment as additional source of income of the locals.	Increased seaweed production, increased volume of marketable output and increased income of seaweed-beneficiaries.
B. Small Enterprise Subprojects		
6. Tilapia Production	The proposed enterprise would help address the constraint in the production segment of the value chain of tilapia specifically access of resources. Production support would be provided to establish tilapia ponds and purchase tilapia production inputs. The additional revenue to be obtained from the sales of tilapia including the jobs to be generated would help improve the income of the beneficiaries.	Increased volume of tilapia production, increased volume of marketable output and increased income of beneficiaries.
7. Swine Fattening	The enterprise aims to provide a sustainable income generating subproject to the farmer-beneficiaries by providing the necessary interventions on hog fattening. It aims to ensure quality and marketability of hogs with the provision of feeds, medicines, and biologics. Additionally, the enterprise would help create employment as additional source of income of the locals.	Increased volume of hog production, increased volume of marketable output and increased income of beneficiaries
8. Coffee Production	This enterprise aims to promote modernized production of coffee to help farmers attain higher yield that would result to higher income. It would support the value chain by providing production inputs such as seedlings and fertilizer, and warehouse with dryer for post-harvest activity.	Increased yield of coffee and increased income of coffee farmers.
9. Cassava Processing	This enterprise would support the processing segment of the value chain of cassava by providing intervention to help address the constraint on low value addition because of lack of access to post harvest facilities. Likewise, it would support the production and marketing aspects by providing a sure market to the farmers since the raw materials to be used for the processing would be directly sourced from them. Moreover, this would help the farmers earn reasonable return vis-a-vis production cost due to reduction in transport cost for fresh tubers and reasonable price of fresh cassava tubers. The enterprise aims to increase farmers income through reduction in transport cost, increase in farmgate price, and dividend/patronage refund from the income of the enterprise. Additionally, the enterprise would help create employment as additional source of income of the locals.	Increased value of marketable output and increased income of cassava farmers.
10. Sweet Potato Trading and Processing	The enterprise aims to increase the income of the farmer-beneficiaries by providing a price premium and sure market for their produce. Additionally, the enterprise would help create employment as additional source of income of the locals.	Increased value of marketable output and increased income of sweet potato farmers.
11. Coconut Consolidation, Processing and Marketing	This enterprise aims to assist farmers in marketing their produce. It would serve as the link of the farmers to the market in order to assure premium prices for the farmers.	Increased value of marketable output and increased income of coconut farmers.

Type of Subproject	Brief Description	Expected Impact
12. Cacao Processing	This enterprise would help address the constraint in the processing segment of cacao's value chain specifically in improving the physical linkages to input and support markets. The enterprise is designed to add value to cacao farmers' products by processing wet cacao beans into tablea. The enterprise aims to increase the income of the cacao farmers by directly selling their produce to the enterprise at a reasonable price. Additionally, the enterprise would help create employment as additional source of income of the locals.	Increased value of marketable output and increased income of cacao farmers.
13. Abaca Fiber Processing	This enterprise would provide market availability to abaca farmers. It would purchase their produce, whether it be in raw (tuxy) or processed (fiber) form. Farmers usually sell their fibers unsorted, which results to low price. The enterprise aims to help increase the farmers' income by providing price difference given the type of fiber sold. The enterprise would also have warehouse and processing facility for value-adding of abaca purchased in raw form. This would help ensure the quality of the fiber to be able to get a price premium.	Increased value of marketable output and increased income of abaca farmers.
C. Medium Enterprise Subprojects		
14. Banana Chips Processing	This enterprise aims to support value-adding to the banana production by processing it into Banana Chips. It would allow the product to have longer shelf life and higher market opportunity. This would also help banana farmers to have market availability for their produce, resulting to sustainable income-generation. Additionally, the enterprise would help create employment.	Increased value of marketable output and increased income of banana farmers.

EFA Methodology and Methods

1. This EFA uses a classic cost-benefit analysis (CBA) framework.
2. The first step of the analysis was the construction of financial cash flows for enterprise interventions. These cash flows include all potential costs and revenues that would accrue to establish and sustain the enterprise interventions as specified in Table A4.1. Based on these cash flows, standard measures of the project's financial profitability and sustainability were estimated for each of the enterprises and the overall project: financial net present value (FNPV), financial internal rate of return (FIRR), and benefit-cost ratio (BCR).
3. In the second step of the analysis, all financial cash flows were adjusted to their economic values using a set of self-calculated Conversion Factors (CFs). The economic flows of resources—economic net present value (ENPV), economic internal rate of return (EIRR), and benefit-cost ratio (BCR)—were estimated to reveal the economic profitability of the proposed enterprises.
4. The third step was the construction of financial and economic cash flows for the infrastructure interventions listed in Table A4.1. These streams reflect the required investments from the national and local governments to construct the infrastructure public goods that would create societal benefits that improve quality of life and facilitate agricultural development in the AD communities.
5. The fourth step was to do an ex-ante quantification of GHG emissions to estimate the impact of agricultural investment on GHG emissions and carbon sequestration using the Ex-Ante Carbon-balance tool (EX-ACT), developed by the FAO.
6. The fifth step was to combine the economic benefit and cost flows to come up with standard measures of the project's economic viability: economic net present value (ENPV), economic internal rate of return (EIRR), and benefit-cost ratio (BCR). The economic flows include the costing of greenhouse gas (GHG) emissions to account for environmental impacts.
7. The final step of the analysis was a sensitivity analysis. Several "what-if" scenarios were analyzed to see how the ENPV, EIRR, and BCR might be influenced if some of the important variables change.

Figure A4.1. Analytical Framework of the MIADP EFA



Assumptions Used to Estimate the Standard Measures of the Proposed Project's Profitability and Sustainability (FNPV, ENPV, FIRR, EIRR, BCR)

a) A timeframe of 20 years was assumed and used to calculate the project's viability and sustainability measures. The analysis assumed a project duration of six years (2023-28), as per the expected loan disbursement. The 20-year timeframe for the analysis seems appropriate, given the duration of the project, nature of the beneficiaries (IPs/IPOs, perhaps needing a longer time to experience benefits arising from the project), and the nature of the infrastructure subprojects with long construction time.

b) The rehabilitation of a total of 191km farm-to-market road connecting selected ADs with other roads is assumed to cover an estimated agricultural area of 95,500 ha, benefitting around 75,000 farmers and fishers. The potential benefits include savings in hauling of input and output given the better road condition. This includes farm inputs and yield of crops, livestock, and fisheries. It is also assumed to reduce travel time of commuters, resulting in the increase of other economic activity. Savings in travel time is estimated using the average labor cost of commuters who are economically active. Another perceived benefit is the reduction of transport losses. The total cost of constructing 1 km of a one-lane and a two-lane cement road was estimated at PhP10 million and PhP15 million, respectively, plus the costs of annual maintenance and resealing the road twice over 20 years.

c) It is assumed that a total of 3,320 ln m of stand-alone bridges would also be constructed, covering 33,200 ha, with an estimated 26,000 farmer and fisher beneficiaries. The bridge would also create savings in output and input hauling of crops, livestock, poultry and fisheries. The construction of the bridge is assumed to reduce travel time for commuters. This would give them another access road option that is shorter. The same way, the bridge is assumed to reduce transport losses. RC bridge is estimated to cost PhP600,000, while steel hanging bridge is estimated at PhP110,000.

d) It is assumed that selected ADs would establish small-scale irrigation projects (SSIP) to support 1,002 ha agricultural production. This is assumed to increase the productive agricultural area and increase cropping capacity of rice and corn. A total of 790 farmers are estimated to benefit from this project. The average cost of this type of system was estimated at PhP370,000 per ha.

e) To support the needs of the beneficiaries for accessible potable water, Community PWS estimated to benefit 3,683 households is assumed to be constructed. Benefits include time savings for water fetching. This is also assumed to reduce morbidity and premature death. Savings in medical expense was also computed as benefit. The PWS is estimated to cost PhP48,000 per

household.

f) The construction of 96,418 ln m Agriculture Tramline Systems (ATS) is assumed to provide easier access to about 15,000 farmer beneficiaries in the uplands. This is assumed to cover 19,284 ha of agricultural land. With the ATS, it is assumed that farmers would have savings in hauling cost and reduction in transport losses. The ATS is estimated to cost PhP4,500 per ln. m.

g) The intervention on improved seeds and fertilizer is estimated to benefit around 2,000 rice and corn farmers. The estimated area to be covered is 878 hectares for rice and 1,767 hectares for corn. The produce of the farmers would be sold in dried form (both rice and corn).

h) About 1,600 farmers are estimated to benefit from the 16 sets of rice farm mechanization intervention of MIADP. The enterprise would generate income from the payment of rent in exchange for the land preparation services rendered through the mini-tractor and hand tractor that would be provided by the project.

i) Provision of production support to poultry farmers. The project would support the poultry production of the ADs by providing the needed production facility, stock (ready to lay and rooster), incubator, feeds, and other production tools/materials (brooder cages, feeder, waterer, egg tray). The enterprise would focus on breeding, fattening activities and would generate income from the sales of fresh eggs and fattened chicken. The projected six poultry enterprises is assumed to benefit 920 farmers.

j) Provision of production support to seaweed farmers. Seaweed farm implements and tools (fixed-off bottom, floating bamboo raft, moisture analyzer, refractometer, thermometer, other production supplies/tools), good quality seedlings and seaweed dryers would be provided and made available to seaweed-beneficiaries. The harvested fresh seaweeds would be dried sold as raw-dried seaweeds (RDS). Four subprojects is estimated to benefit around 130 seaweed-farmers.

k) Provision of production support to tilapia industry. This intervention provides funding to establish a tilapia enterprise through the construction of 32 ponds per subproject. Sufficient funds would be provided to obtain tools for tilapia production (fish nets, solar water pumps) as well as fingerlings, feeds and fertilizer for one tilapia production cycle. The harvested tilapia would be sold as fresh with an average weight of 0.50 kg per piece. Additionally, the estimated 12 tilapia production enterprises is assumed to benefit around 1,800 farmers.

l) Provision of production support to swine farmers. This intervention provides funding to establish a piggery for fattening including the construction of 500 m2 pig shelter and resources to finance one fattening cycle (3-4 months, 250 pigs), including the purchase of piglets, commercial feed, and medicines. Furthermore, it is assumed that 50 percent of the feed requirement would be met by commercial feed (funded directly by the project), and 50 percent would be met through local production of corn and rice in the AD (funded indirectly by the project through the intervention for improved rice and corn production). The product to be marketed by the proposed enterprise is fattened hog and each enterprise is assumed to benefit 150 farmers, while the projected 16 enterprises would cater to about 2,400 beneficiaries.

m) Provision of production support to coffee farmers. Each coffee enterprise is assumed to cover 40 ha (this area is based on field interviews in February 2020, when IPs mentioned an area of that size being available for coffee production) planted to Robusta coffee (data on costs and revenues of Robusta coffee production are used in the model). The proposed MIADP grant would fund the purchase of seedlings, equipment for coffee production and harvesting (pruning shears, plastic containers, jute bags, and so on), bio-fertilizer, and bio-control pest repellent. The intervention also provides resources to build a warehouse (650 m2) for coffee drying and coffee storage. The income of the enterprise would come from the sales of green coffee beans. The projected 23 coffee production enterprises is estimated to benefit over 700 coffee farmers.

n) Provision of processing and marketing support to cassava farmers. This intervention provides processing facilities and equipment including drying and transportation facilities. It would also fund the purchase of fresh cassava tubers for one cycle. The fresh cassava tubers would be processed into granules which would be sold to the target markets. The projected four cassava processing enterprises would cover 933 hectares and would benefit about 700 cassava farmers.

o) Provision of processing and marketing support to sweet potato farmers. The proposed enterprise would focus on the trading and processing of sweet potato. The enterprise would buy fresh sweet potato produced by its farmer-members. The consolidated volume would be cleaned, classified/sorted of which the large and medium sizes would be sold as raw while the small sizes would be processed into chips. Each enterprise is assumed to cover 16 hectares in the initial year and would increase by 10 percent

annually. The nine projected enterprises is estimated to benefit over 250 farmers.

p) Provision of processing and marketing support to coconut farmers. This intervention provides funding for the necessary infrastructure (warehouse), transportation facility, equipment, tools and supplies for the production of copra. It would also fund the purchase of raw materials for one cycle. The projected nine coconut enterprises is assumed to cover 1,525 hectares (162 hectares each) and benefit around 1,200 farmers. The income of the enterprise would come from the sales of copra.

q) Provision of processing and marketing support to cacao farmers. The intervention provides the necessary infrastructure, equipment, machineries and tools for the processing of cacao beans including vehicle that would be used to haul and deliver the produce as well as the fund to purchase the raw materials for one cycle. The enterprise would procure wet cacao beans from the farmers. This would undergo various processing activities such as fermentation, drying, roasting, grinding, molding and so on to produce the final product of the enterprise which is tablea that would be sold to the target markets. Each enterprise is assumed to cover 143 hectares and the 13 projected cacao processing enterprises would cater to 1,847 hectares, benefitting around 1,500 farmers.

r) Provision of processing and marketing support to abaca farmers. Abaca farmers sell their produce either as tuxy or as fiber processed through stripping knife. The intervention provides the construction of warehouse and processing facility, using abaca stripping machine, to the enterprise to process tuxy procured from the farmers. Included in the processing facility are the different tools and equipment. The intervention includes different vehicle type: truck for hauling and delivery, and motorcycle to haul products from the farmers. Each enterprise is assumed to cover 278 ha, of which 80 percent of the harvest would be absorbed by the enterprise. Fiber would be sorted to get premium price for high quality (S2) product. The projected five subprojects would benefit roughly 1,100 farmers.

s) Provision of processing and marketing support to banana farmers. The intervention provides the necessary machineries and facility for Banana Chips processing. Motorcycle would be provided for banana sourcing. It would also provide equipment for banana washing, inspection, sorting, peeling, slicing, quality assurance, bagging/crating, storage, quality and process control, health and safety, as well as maintenance. Necessary equipment would also be provided to ensure proper waste management. Working capital, including rental expense for hauling and delivery truck would be provided. Each enterprise is designed to cater the estimated average area of 245ha banana production per subproject. Five projected enterprises would cover 1,250 hectares managed by close to 1,000 farmers.

t) Several macroeconomic variables were also assumed for the purpose of this analysis. The domestic inflation rate was assumed to be 3.76 percent, which was the 5-year inflation rate average as of Aug 2022 based on the Philippine Statistics Authority (PSA). The real exchange rate of the Philippine peso (PhP) to the US dollar (US$) was kept at PhP53 = US$1. The financial discount rate used the computed Weighted Average Cost of Capital (WACC) of 6.83 percent, while the economic discount rates used the social discount rate of 10 percent. The Foreign Exchange Premium (FEP) was calculated and established at 20 percent. The Value Added Tax (VAT) was assumed to remain at its current level of 12percent. Transportation costs (port–market and market–port) were assumed at 5 percent, as were port handling costs.

3. **The results of the EFA show that MIADP is expected to deliver positive financial and economic benefits to IPs in the participating ADs.** Calculated over 20 years, the results indicate that all proposed intervention scenarios would have positive incremental economic benefits (Table A4.2). The project EIRR is 22.27 percent , which is above the economic discount rate, set at 10 percent (equal to the Philippine economic opportunity cost of capital). The Benefit-Cost Ratio is 1.32 and the ENPV is estimated at PhP4,656,751,143 (US$87,863,229). At the enterprise level, the financial measures of profitability are positive for all the enterprise interventions, indicating that undertaking improved agricultural practices and enterprise activities are worthwhile investments. The financial analysis suggests that sustainability is likely, as financial profitability measures (FNPV, FIRR, and BCR) are positive.

4. **The economic analysis incorporates the impact of GHG emissions using a low and a high shadow price of carbon, following the World Bank's 2017 guidelines.** With the infrastructure and enterprise interventions of the project, the

total Net Carbon Balance would reach an estimated average of +7,564 tons of CO2eq emissions per year, corresponding to an estimated total of +151,280 ton CO2eq emitted over the entire project life. Using estimates for low and high carbon price equal to USD 43 and 86, respectively, the project remains feasible with the analysis yielding a 21.83 percent EIRR, an USD 84.73 million NPV and a 1.31 BCR for the low estimate and a 21.38 percent EIRR, an US$81.59 million NPV and a 1.29 BCR for the high estimate.

5. **The sensitivity analyses for both lower bound and upper bound carbon prices show that the EFA results are robust under more challenging conditions: (a) increased costs; (b) reduced benefits; and (c) delayed benefits.** Several "what-if scenarios" were created to consider changes in each variable of up to +/-30 percent. The analysis shows the project's robust viability with the EIRR remaining above the social discount rate of 10 percent. The incremental ENPV remained positive, and the incremental ERR and EMIRR remained above the economic discount rate of 10 percent when costs increase by 20 percent, or benefits decrease by 20 percent, or benefits are delayed by one year (tables A4.2 and A4.3). These results further suggest that economic profitability measures (ENPV, EIRR, BCR) are solid.

Table A4.2. Sensitivity Analysis at Lower Bound Carbon Price of US$43/t CO_2 (at 10% SDR)

	IRR	NPV at 10% (PhP)	BCR
Base Scenario	**21.83%**	**4,490,508,892**	**1.31**
Sensitivity Scenarios			
5% Cost Increase	19.65%	3,756,492,965	1.24
10% Cost Increase	17.60%	3,022,477,039	1.19
15% Cost Increase	15.65%	2,288,461,112	1.14
20% Cost Increase	13.77%	1,554,445,185	1.09
30% Cost Increase	10.20%	86,413,332	1.00
5% Benefits Decrease	19.54%	3,531,967,521	1.24
10% Benefits Decrease	17.16%	2,573,426,149	1.18
15% Benefits Decrease	14.65%	1,614,884,778	1.11
20% Benefits Decrease	11.97%	656,343,407	1.04
30% Benefits Decrease	5.79%	-1,260,739,336	0.91
1-Year Delay of Benefits	14.62%	2,077,780,172	1.14
2-Year Delay of Benefits	9.81%	-92,129,372	0.99
Cost Increase + Benefits Decrease + 1 Year Delay of Benefits			
5%	11.15%	505,859,310	1.03
10%	7.50%	-1,066,061,552	0.93
15%	3.50%	-2,637,982,414	0.84
20%	-1.20%	-4,209,903,276	0.76
Cost Increase + Benefits Decrease + 2 Years Delay of Benefits			
5%	6.75%	-1,555,554,757	0.90
10%	3.41%	-3,018,980,142	0.81
15%	-0.40%	-4,482,405,526	0.73
20%	-5.15%	-5,945,830,911	0.66

Table A4.3. Sensitivity Analysis at Upper Bound Carbon Price of US$86/t CO_2 (at 10% SDR)

	IRR	NPV at 10% (PhP)	BCR
Base Scenario	**21.38%**	**4,324,434,125**	**1.29**
Sensitivity Scenarios			
5% Cost Increase	19.20%	3,582,114,460	1.23
10% Cost Increase	17.14%	2,839,794,795	1.17
15% Cost Increase	15.18%	2,097,475,130	1.12
20% Cost Increase	13.30%	1,355,155,465	1.08
30% Cost Increase	9.69%	-129,483,865	0.99
5% Benefits Decrease	19.09%	3,365,892,754	1.23
10% Benefits Decrease	16.70%	2,407,351,383	1.16
15% Benefits Decrease	14.17%	1,448,810,012	1.10
20% Benefits Decrease	11.47%	490,268,640	1.03
30% Benefits Decrease	5.21%	-1,426,814,102	0.90
1-Year Delay of Benefits	14.25%	1,911,705,405	1.13
2-Year Delay of Benefits	9.47%	-258,204,139	0.98
Cost Increase + Benefits Decrease + 1 Year Delay of Benefits			
5%	10.75%	331,480,805	1.02
10%	7.06%	-1,248,743,795	0.92
15%	2.99%	-2,828,968,395	0.83
20%	-1.85%	-4,409,192,996	0.75
Cost Increase + Benefits Decrease + 2 Years Delay of Benefits			
5%	6.37%	-1,729,933,262	0.89
10%	2.98%	-3,201,662,385	0.80
15%	-0.92%	-4,673,391,508	0.73
20%	-5.86%	-6,145,120,631	0.66

6. **Overall, the EFA results confirm that the IPs/IPOs in selected ADs are likely to benefit financially and economically from the proposed infrastructure and enterprise interventions of the project.** In the short run, the main gains would manifest in the form of higher incomes for IPs/IPOs, obtained through higher yields and production, and improved value of marketable outputs, combined with a reduction in losses and transportation costs. With the combined support for relatively simple investments, capacity-building advice, and commodity-specific production and marketing training, MIADP can be a powerful catalyst for development in the selected ADs. Over the medium to long term, it appears likely that the prospective agri-fisheries enterprises modeled in the analysis would develop further and possibly realize economies of scale, further increasing the benefits to IPs, IPOs, and the Philippine economy.

7. **By building an enabling environment for IPs/IPOs in selected ADs to achieve higher and more sustainable incomes and become more resilient to economic shocks, the project would realize its development impact.** The development impact of the proposed project would result from the organization, training, and strengthening of IPs/IPOs in the selected ADs and from the provision of grant funding for commodity-specific enterprises. The implementation of the proposed MIADP interventions is expected to sustainably increase agri-fisheries production by IPs/IPOs in the selected ADs.

Limitations of the EFA

a) Potential issues with the results are related to the changing climate and its influence on commodity yields and planting patterns. In the coming years, farmers are expected to adapt as climate variability influences planting patterns and possibly requires them to change the commodities they produce. Also, the Philippines is exposed to natural disasters (typhoons, volcanic eruptions) and the risks associated with these events. Agricultural production persists despite the relatively frequent occurrence of such hazards, proving that farmers are smart as well as able to adapt and incorporate risk factors into their on-farm investment decisions.

b) The socio-political situation in Mindanao might impact the results of the EFA. The analysis was pursued under the assumption that the proposed interventions are feasible and that no socio-political obstacles would affect project implementation. It is acknowledged that this assumption may not hold, and that delays in implementation may influence the projected cashflows and results of the EFA.

c) The COVID-19 pandemic, its effects on the global economy, and its effect on the Philippine economy are all equally hard to predict. At the time of this analysis, it is unclear how the global and Philippine economies would cope with the expected economic downturn associated with the pandemic. As the pandemic is ongoing, it is close to impossible to provide any well-supported prognosis. Even so, the pandemic is expected to have a significant impact on several macroeconomic variables (for example, inflation and interest rates). There is also a risk that similar pandemics would occur in the future, possibly with greater frequency. None of these prospects have been included or assessed in the EFA for the proposed project.

ANNEX 5: Climate Co-Benefits and GHG Accounting

1. **Project scenarios and assumptions.** The project would be implemented over six years. The analysis is run over a total 20 years (2021-40), hence with a capitalization phase of 14 years. A tropical wet climate and high activity clay soils were assumed to be representative of Mindanao. The interventions developed for the economic and financial analysis (EFA) were used for the GHG accounting. Several of the assumptions and figures from the EFA were also inputs to this GHG analysis and come from updated data from the Department of Agriculture's experiences in implementing PRDP. The results from this analysis should be considered strictly as ex-ante outcomes. The without-project scenario corresponds to the current baseline situation. The assumptions for the individual interventions are shown in Box A5.1.

Box A5.1. Assumptions used for the GHG Accounting[62]

INFRASTRUCTURE SUBPROJECTS

a) ***Construction of Farm to Market Roads (FMR).*** It is assumed that the project would rehabilitate the pavement of 191km of farm-to-market roads, with 151km being one-lane roads and 40 km of two-lane roads. Based on actual data gathered from previous PRDP project, it is estimated that, after its construction, the new road would increase its total daily traffic (vehicles per day) by 50 percent. Under a road roughness equal to 6 m/km (using IRI, International Roughness Index) and using the HDM-4 road model, the yearly traffic would result in an incremental consumption of 1.105 m3 of fuel per year and per km. All this means a total of 6,154 tCO2eq emitted for the construction itself and 9,716 tCO2eq/year emitted during its operation.

b) ***Bridges.*** It is assumed that a total of 3,320 meters of stand-alone bridges would be constructed, out of which 720 m. would be reinforced concrete bridges and 2,600 m. steel hanging bridges. An emission factor of 86 tCO2eq/m2 was used for RC bridges similar to that of roads, and 86*1/3=29 tCO2eq/m2 for metal or steel bridges. The conversion factor of 1/3 is based on the ratio of metal vs concrete constructions used in EX-ACT[63], assuming it would be the same case for concrete vs metal bridges, where only the materials change. Hence, a total of 409 tCO2eq are expected to be emitted during their construction.

c) ***Agriculture Tramline System.*** A total of 96,148 ln m of ATS would be built. From PRDP experience, each tramline is about 500 ln m, hence this implies around 193 subprojects. Previous studies[64] cite an average consumption of 610 L of diesel per year and subproject, which means a total consumption of 118 m3 per year. The emissions from construction are assumed to be negligible. This translates into total emissions of 5,369 tCO2eq emitted per year. We assume that the introduction of ATS would not significantly change fertilizer use in the surrounding production areas - even though it would likely decrease hauling costs.

d) ***Community small scale irrigation systems.*** A total of 1,002 ha would be equipped with small scale irrigation systems. It would allow to irrigate rice and corn fields through the use of a pipe system. Assuming it would be mainly surface irrigation, it would result in 35 tCO2eq emitted for its construction. We assume no emissions coming from its operation since it would be either ram pumps or solar powered pumps which don't rely on fossil fuel.

e) ***Community potable water systems.*** A total of 12 subprojects are expected, each one providing potable water to at least 300 households. We only assume emissions from the construction of the ground water tanks, done in concrete with an average 42 m3 capacity (15 m2 area) and one for each subproject. This means a total of 118 tCO2eq emitted for all subprojects.

[62] To estimate the potential impact of agricultural investments on GHG emissions and carbon sequestration, the World Bank has adopted the Ex-Ante Carbon-balance tool (EX-ACT), developed by the Food and Agriculture Organization of the United Nations (FAO) since 2014. EX-ACT assesses a project's net carbon balance, defined as the net balance of CO_2 equivalent GHG emitted or sequestered as a result of project implementation compared to a without-project scenario, which is assumed to be the adoption of conventional technologies. EX-ACT estimates the carbon stock changes (emissions or sinks), expressed in equivalent tons of CO_2 (tCO_2eq) per hectare and year. Three gases are considered in the calculations: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The latest available global warming potential from the Intergovernmental Panel on Climate Change (2014) is used to convert all emissions into CO_2 equivalent (165 for N_2O and 28 for CH_4).

[63] https://www.fao.org/documents/card/en/c/cc0142en

[64] http://issaasphil.org/wp-content/uploads/2021/12/7.-Idago-et-al-2021-Agricultural-tramline-system-FINAL.pdf

f) ***Post- Harvest Infrastructure.*** This includes a total of 4,000 m2 of consolidation and distribution centers, 5,200 m2 of warehouses and 3,850 m2 of other facilities. We assume they would be built in concrete in order to maximize their climate resiliency. In total, this public infrastructure means 13,050 m2 and translates into 8,561 tCO2eq emitted for its construction.

ENTERPRISE SUBPROJECTS

a) ***Rice production.*** It is assumed that 878 ha of rainfed rice would enhance its production and increase yields due to irrigation, improved seeds and fertilizers. Current yields are 1,200 kg/ha for rainfed flooded rice during the wet season. Under the current conditions, no fertilizers and no pesticides are used, and the straw is burned after the harvest. In the with-project scenario, we assume that the use of improved seeds, improved agronomic practices, irrigation and the use of fertilizers would allow to have 2 seasons of irrigated rice per year and increase the yields to 5,000 kg/ha, year. We assume that 80 percet of the new production would be continuously flooded while the other 20 percent would be alternate wetting and drying. The latter is a climate smart technique that would be promoted by the project. The fertilization would consist of 95 kg/ha of urea and 95 kg/ha of 15-15-15 complex fertilizer. The total net Carbon balance -as compared to the without-project scenario- over the 20-year project lifetime equals 32.9 tCO2eq/ha of emitted Carbon. Emissions are noticeably high due to the longer flooded periods -which significantly increase CH4 emissions- and the high Nitrogen fertilization rates applied. Yet, it should be noted that the higher emissions in the with-project scenario also imply higher yields; in fact, the gross emission intensity per ton of rice produced is actually reduced by 50 percent.

b) ***Rice farm mechanization.*** This intervention would provide a total of 16 sets of rice farm mechanization, which would foster the transition from manual and animal-driven ploughing to tractor ploughing. Their impacts on rice production areas and GHG emissions have already been included in the previous enterprise on rice production.

c) ***Corn production.*** It is assumed that 1,767 ha of corn would enhance its production and increase yields due to improved seeds and fertilizers. Current yields are 1,300 kg/ha for white corn. Under the current conditions, corn is cultivated with tillage, no manure and no pesticides are used, and the straw is burned after the harvest. In the with-project scenario, improved seeds, improved agronomic practices, irrigation and the use of fertilizers would allow to increase the yields to 3,100 kg/ha for white corn. The fertilization for corn would consist of 40 kg/ha of urea and 50 kg/ha of 15-15-15 complex fertilizer. This would result in 9,870 tCO2 annual emissions.

d) ***Poultry production and marketing (native chicken).*** Six (6) enterprises would be supported, each one assumed to build a 90-m2 sheltered concrete platform for the fattening of 10,000 birds/cycle, 5 cycles/year and a final weight of 1.5 kg/bird. Over the concrete platform, a breeding house, a grower house and a hatchery house would be built, all of them with local wood materials so no emissions are considered from it. Feeding was not considered for the GHG calculations since we assumed that it would be locally sourced. GHG emissions from poultry fattening are almost negligible, adding a total of 9 tCO2eq over the project lifetime. This is a result of the low Carbon footprint of its manure and enteric fermentation. Additionally, there are a total of 354 tCO2eq from the construction of the concrete platforms.

e) ***Seaweed production.*** This intervention would take place in floating bamboo rafts located in open waters. Since rafts are built with local wood materials, there are no emissions from their construction and we only consider the use of fossil fuel during its operational phase. Based on previous data from the PRDP project, it is estimated that 4.5 L of fuel are needed per batch and per cycle. Assuming 4 enterprises, each one with 35 batches and 6 cycles per year, this yields a total of 3.78 m3 of fuel per year, which translates into 174 tCO2eq emitted for the whole project lifetime.

f) ***Tilapia production.*** A total of 12 tilapia enterprises would be supported, each one constructing 32 new concrete ponds for tilapia fish production. Each pond covers an area of 200 m2. In full production, they would yield around 62 metric tons of tilapia fish per year and enterprise, hence a total of 744 metric tons per year. The total estimated emissions over the project lifetime are 15,506 tCO2eq, out of which 6,605 tCO2eq come from the construction of ponds and 8,901 tCO2eq from the feed and the production process over the 20-year project lifetime. It is assumed that emission from fertilizer application is negligible as it will be mainly locally sourced[65].

g) ***Swine fattening.*** About 16 enterprises would be supported, each one assumed to build a 500-m2 sheltered concrete platform for the fattening of 250 pigs per year, with 3 fattening cycles per year and a final weight of 85 kg per fattened pig. The shelter would be built with local wood material so no emissions are considered from it. Feeding was not considered for the GHG calculations since we assumed that it would be locally sourced. GHG emissions from swine fattening production come from: (a) CH4 emissions from enteric fermentation; (b) CH4 emissions from manure management; and (c) N2O emissions from manure

[65] http://www.pcaf.da.gov.ph/wp-content/uploads/2022/06/Philippine-Tilapia-Industry-Roadmap-2022-2025.pdf

management. The total estimated emissions are 8,568 tCO2eq over the project lifetime from the pig operations and an additional 5,248 tCO2eq from the construction of the concrete platforms.

h) ***Coffee production.*** A projected total of 23 coffee production enterprises would benefit from this intervention, each one assumed to cover 40 ha. This intervention would modernize the production of coffee to help farmers attain higher yields as well as support the value chain by investing in post-harvest activities. Specifically, it would provide seedlings, equipment and fertilizers to improve production as well as the resources to build a warehouse (650 m2 per entrpise) for coffee drying and coffee storage. We assume the fertilization program would consist of the following yearly applications: 76 Kg/ha of diammonium phosphate (18-46-0), 100 Kg/ha of urea (46-0-0) and 100 Kg/ha of muriate of potash (0-0-60). The emissions come from the use of fertilizers and the construction of the building, adding up to 21,747 tCO2eq during the project implementation.

i) ***Cassava processing.*** This intervention would provide processing facilities and equipment to 4 cassava processing enterprises. Based on updated PRDP estimates that can be found in the EFA, it is assumed that each processing facility would process around 4.5 million Kg of fresh cassava tuber. This requires a consumption of 561 KWh/year of electricity and 10,170 L/year of fuel for each processing facility. Fuel consumption includes transport of raw materials to the plant, the chipping machine and the flatbed dryer. Additionally, we assume the construction of a 650-m2 concrete building for each enterprise. All this means a total of 1,706 tCO2eq from the construction and 1,883 tCO2eq from the operation over the project lifetime for all the four enterprises. We assumed there would be neither land use changes nor improvements in management practices in the production areas that supply the projected facilities. It was also assumed that currently the produce is being sold raw with no processing involved.

j) ***Sweet potato trading and processing.*** There are 9 projected enterprises focused on processing sweet potato. Each one is assumed to build a 650-m2 processing and storage facility made of concrete material and would consume 1,200 KWh/year of electricity based on the EFA data. All this implies a total of 3,838 tCO2eq emitted from the construction and 136 tCO2eq emitted from the operation over the project lifetime for all the nine enterprises. We assumed there would be neither land use changes nor improvements in management practices in the production areas that supply the projected facilities. It was also assumed that currently the produce is being sold raw with no processing involved.

k) ***Coconut consolidation, processing and marketing.*** This intervention would fund the construction of processing facilities for the production of copra for a total of 9 projected coconut enterprises. Following the EFA cost tables, an average consumption of 1,000 KWh/year of electricity is envisaged for each enterprise. Additionally, we consider the emissions from the construction of one 650-m2 concrete warehouse per enterprise. This results in a total of 3,838 tCO2eq emitted from the construction and 113 tCO2eq emitted from the operation over the project lifetime for all the nine enterprises. We assumed there would be neither land use changes nor improvements in management practices in the production areas that supply the projected facilities. It was also assumed that currently the produce is being sold raw with no processing involved.

l) ***Cacao processing.*** A total of 13 projected cacao processing enterprises would be supported through this intervention. Based on previous data from PRDP, the EFA assumes an average consumption of 1,750 KWh/year of electricity per processing plant (includes roasting, cracking, grinding and vacuum machines) as well as 12 LPG tanks per year for the fuel equipment (being the volume of each tank equal to 21.56 L). Additionally, we consider the emissions from the construction of one 650-m2 concrete storage and processing building per enterprise. All this adds up to 5,920 tCO2eq emitted over the project lifetime for all subprojects. We assumed there would be neither land use changes nor improvements in management practices in the production areas that supply the projected facilities. It was also assumed that currently the produce is being sold raw with no processing involved.

m) ***Abaca fiber processing.*** This intervention would fund 5 subprojects. Each enterprise would construct a warehouse and processing facility (650-m2 concrete building) and would allow abaca farmers to sell their produce either as tuxy or as fiber processed through stripping knife. The electricity consumption of each enterprise is envisaged at 860 KWh/year and 3,400 L of fuel per year. All this yields a total of 2,961 tCO2eq emitted over the project lifetime for all subprojects. We assumed there would be neither land use changes nor improvements in management practices in the production areas that supply the projected facilities. It was also assumed that currently the produce is being sold raw with no processing involved.

n) ***Banana chips processing.*** This intervention would provide the necessary machineries and facility for 5 projected enterprises of banana chips. Each processing facility would build a 650-m2 concrete building and would consume 688 tons of fuelwood[66] and 27,500 KWh per year. This means a total emission of 9,900 tCO2eq emitted over the project lifetime. We assumed there would

[66] Assuming 30% moisture content per FAO Forestry Paper 41 (https://www.fao.org/3/X5328E/x5328e04.htm)

be neither land use changes nor improvements in management practices in the production areas that supply the projected facilities. It was also assumed that currently the produce is being sold raw with no processing involved.

2. **Results for the intervention packages.** As can be seen, all interventions emit CO_2eq instead of sequestering, compared to the without-project scenario. This is a direct consequence of the MIADP's goal to increase productivity through agricultural intensification, promoting the construction and operation of processing facilities as well as the construction of new roads and infrastructure.

3. **Carbon pricing.** Following World Bank guidance[67], two carbon prices are considered in the analysis as low and high estimates. The low and high estimates equal USD 43 and US$86, respectively, in 2023, and thereafter the values increase at a rate of 2.25 percent per year. The annual shadow price of carbon (US$/$tCO_2$e) is then multiplied by the yearly GHG emissions (tCO_2e) to get the economic value for every year of the project.

4. **Total GHG emissions and economic costs.** If the project invests in the interventions described in the EFA, the total Net Carbon Balance would reach an estimated average of +7,564 tons of CO_2eq emissions per year of the project, corresponding to an estimated total of +151,280 tCO_2eq emitted over the entire project life. In economic terms, the project would generate a negative Net Present Value (NPV) of US$2.68 million or US$5.10 million (for a 12 percent discount rate) during the whole project life for the low and high Carbon price scenarios, respectively.

Table A5.1: Net Carbon Balance for each of the Ex-Act Components

Components		Net Carbon Balance	
		tCO_2eq over the whole period analysis	tCO_2eq/year annual average
Land use changes	Deforestation	0	0
	Afforestation	0	0
	Other land-use	0	0
Cropland	Annual	-865	-43
	Perennial	0	0
	Flooded rice	+23,301	+1,165
Grasslands & Livestock	Grasslands	0	0
	Livestock	+8,575	+429
	Forest mngt.	0	0
	Inland wetlands	0	0
	Coastal wetlands	0	0
	Fisheries and aquaculture	+8,901	+445
	Inputs & Invest.	+111,369	+5,568
Total emissions, tCO_2eq		**+151,280**	**+7,564**

+ = Source / - = Sink

5. **Substantiality**. Although the project is generally a net emitter relative to the without project scenario, there are many investments related to the reduction of food loss and waste which are not accounted for due to the limitations of the FAO EX-ACT tool. The EX-ACT version used does not provide a detailed analysis of post-farm gate GHGs emitted

[67] World Bank (2017), "Guidance note on shadow price of carbon in economic analysis." Washington, DC. Available at *http://documents.worldbank.org/curated/en/621721519940107694/Guidance-note-on-shadow-price-of-carbon-in-economic-analysis*.

or avoided along the agro-value chain through investments in: (a) post-harvest handling and storage; (b) processing; and (c) distribution. Therefore, the effects of the investments on food loss and waste (see joint methodology of Multilateral Development Banks), would be accounted for using the qualitative approach (see Interim guidance note on demonstrating substantiality). The value chain activities that have implications for GHG and their link to emissions are summarized in table A5.2 below.

Table A5.2 Detailed Description of Value Chain Investments for Demonstrating Qualitative Substantiality

General: One-third of all produced food globally doesn't reach the consumer. Globally, food loss and waste generate annually 4.4 GtCO2 eq, or about 8 percent of total anthropogenic GHG emissions.[68] Almost equivalent to global transport emissions together. Cereals (33%), vegetables and meat (20 percent despite low losses) have the highest carbon footprint respectively.[69] Food losses in both industrialized and developing countries are almost the same, but in developing countries more than 40 percent of the food losses occur at post-harvest and processing levels.

Philippines: Substantial post-harvest losses of up to 50 percent have been recorded through harvesting, grading, packaging and transportation from field to storage and distribution to the consumers.[70] Rice experiences loses of about 16 percent in food due to processing inefficiencies alone.[71] The leading cause of food loss and waste in the country is the lack of modern agricultural technologies, resources and skills, infrastructure, and support for research innovation. This project aims to address this food losses and waste challenge through investments in critical public goods and innovative equipment and infrastructure that promotes value-addition and market access as summarized in table below.

Value Chain Stage	Activity	Component	Link to GHG Emissions
Production	Integrated pest management to introduce sustainable pest control measures. Construction of rain shelters to protect crops from precipitation.	Components 2 and 3: Investment in enterprise development and infrastructure	On-farm investments for reducing pests and rain shelters for reducing physical crops damage from extreme climate all work to reduce the food loss through crops damage, thereby reducing the total food losses originating from production.
Storage	Development of climate resilient storage facilities Installation of solar powered storage facilities Small scale clean energy powered refrigeration equipment.	Component 2: Subgrants to implement subprojects for value chain strengthening.	These investments would replace traditional storage facilities, which farmers typically use, and would contribute to reduced food losses from post-production through investments in facilities that create suitable climates for preservation and reduced spoilage.
Processing	Solar dryers would be introduced	Component 2 and 3	Solar drying is considered one of the most energy efficient approaches to prevent food losses and waste.

[68] *Call to global action on food loss and waste*
[69] *Food wastage footprint and climate change*.
[70] *Mopera, L. E. (2016). Food loss in the food value chain: the Philippine agriculture scenario. Journal of Developments in Sustainable Agriculture, 11(1), 8-16.*
[71] *Food Supply Chain Optimization Modelling in the Rice Crop Post Harvesting in the Philippines: An Agroecological Approach in Food Sustainability*

Value Chain Stage	Activity	Component	Link to GHG Emissions
	The project would introduce new methods and equipment for proper packaging of produce.		Improving new and efficient processing and packaging methods and equipment, the project would contribute to reduced food loss through avoiding spoilage.
Distribution	The project would develop Trading post for quick movement and sell of goods. The project would construct agricultural tramline systems to facilitate the hauling of agricultural products in mountainous areas. The project would also introduce short roads and bridges specifically to link farmland to nearest urbanized areas. Roads would be constructed with wider drains and culverts to deal with heavier precipitation.	Components 2 and 3	Developing trading post would ensure that markets are closer to farmers, therefore reducing the staying time of produce and spoilage. Constructing agricultural tramline systems would allow for faster and less costly movement of agricultural inputs and outputs. It would help lessen and transportation losses such as spoilage. The increased access to markets via dedicated farm-markets roads and bridges would ensure that produce is delivered to the markets faster, thereby reducing loss due to spoilage. Despite such infrastructure leading to GHG emissions, they are built to be climate resilience, and would directly reduce emissions from food spoilage.

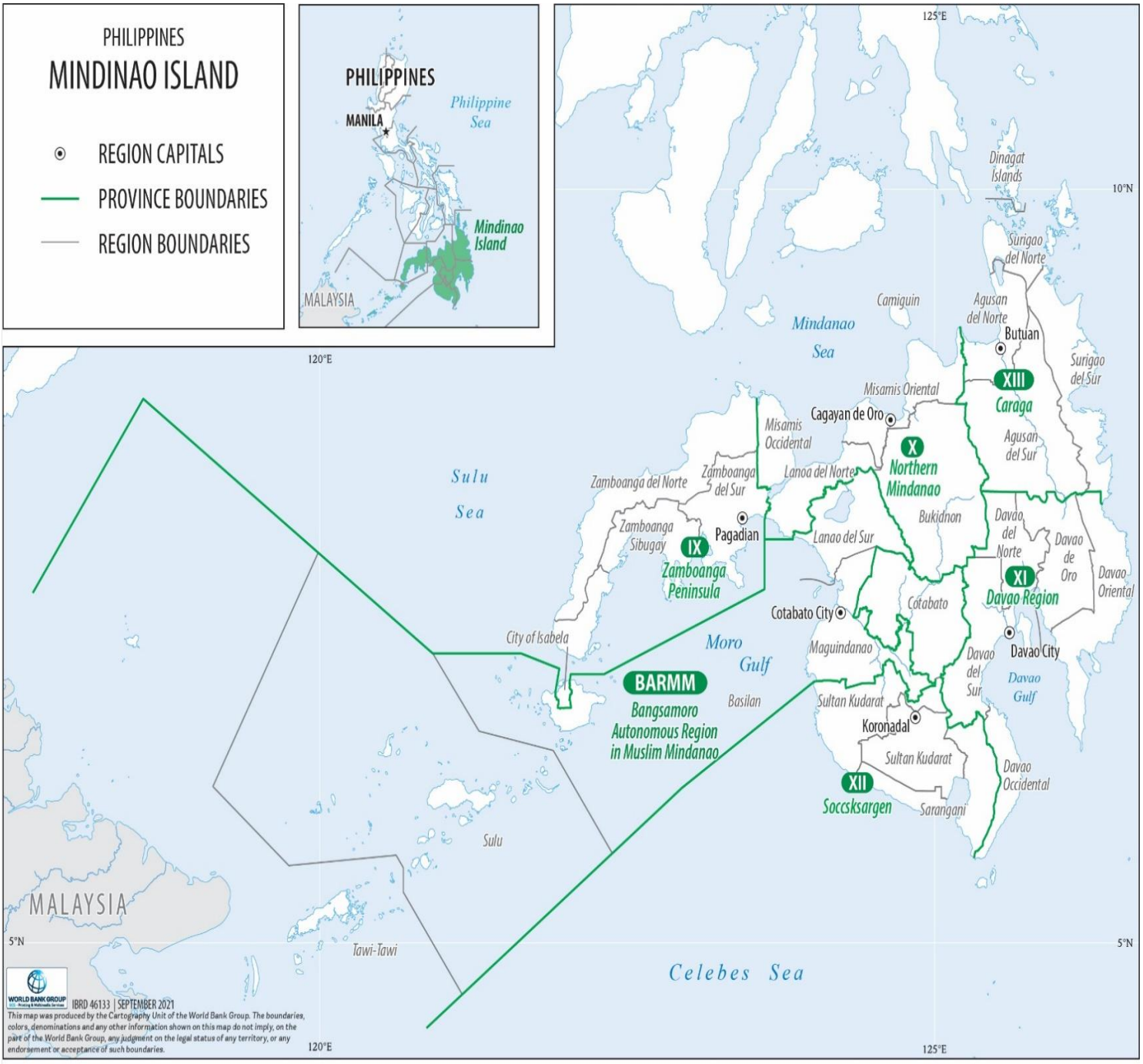
Table A5.3: Climate Co-Benefits: Project Activities to Support Climate Adaptation and/or Mitigation

Component 1: Ancestral Domain Planning and Social Preparation (IBRD US$10 million)			
Sub-Components/ Activity	**Financing Allocation (US$ million)**	**Adaptation Measures**	**Mitigation Measures**
(i) Preparation and implementation of communication plan, awareness raising events, workshops, and market orientation training	*1*	• Communication plan and awareness raising events, would include information on climate vulnerability, feasible CSA options, and existing climate information systems.	
(ii) Capacity-building	*1*	• Improve the capacity of ICCs/IPs, LGUs and service providers, including on climate-smart value chain development.	
(iii) Development of ADAIF for each participating AD	*5*	• Finance the development of an ADAIF that identifies appropriate adaptation and mitigation measures such as climate-resilient rural infrastructure, and CSA practices (i.e., use of stress-tolerant varieties, greenhouses, crop diversification, integrated pest management, drip irrigation, construction of rain shelters, use of energy-efficient equipment).	
(iv) Value chain analyses	*1*	• Consider climate vulnerabilities when analyzing value chains of target commodities. It would adopt the Department of Agriculture's framework for Climate-Risk Vulnerability Assessment (CRVA).	
(v) Technical support	*2*	• Finance research, capacity building, and coordination activities with modules on climate-resilient agriculture and/or climate-smart agriculture to better understand climate risks and design appropriate adaptation and mitigation measures for stronger science-based and market-led inputs to the ADAIFs and Business Plans of IPO enterprises.	
Component 2: Resilient Ancestral Domain Agri-Fisheries Infrastructure (IBRD US$65 million)			
Sub-components / Activity	**Financing allocation (US$ million)**	**Adaptation Measure**	**Mitigation Measures**
(i) Improved roads and bridges connecting ADs to market centers	30	• Finance the construction of roads and bridges that would include climate-resilient design. The project would adopt a framework for climate-resilient infrastructure mainstreaming that is aligned with the 2015 Department of Public Works and Highways (DPWH) Design Guidelines Criteria and Standards and the DA's Bureau of Agricultural and Fisheries Engineering (BAFE). These standards align	

		with the Philippine National Standard for Agricultural Infrastructures – Farm-to -Market Roads – Concrete Roads. • Improving market accessibility through infrastructure connectivity support to help reduce food loss and waste along the value chain	
(ii) Improved access between agricultural areas and sitios	*20*	• Finance small bridges, farm-to-market roads, including tire tracks and access roads that would include climate-resilient measures. Including weather resistant material to withstand extreme weather events, wider drains and culverts to accommodate heavy precipitation. • Improving market accessibility through infrastructure connectivity support such as agricultural tramline systems to help reduce food loss and waste along the value chain	
(iii) Small-scale and/or communal irrigation systems	*7*	• Finance small-scale and/or communal irrigation systems as an effective adaptation measure to climate change.	• Invest in ram pumps and solar-powered irrigation pumps. These type of irrigation systems would reduce energy use.
(iv) Community potable water supply systems	*3*	• Finance community potable water supply systems with piped network that uses energy more efficiently and are resilient and can cope with the climate variability in Mindanao	• Invest to the extent possible in energy efficient technologies available locally for pumping (groundwater or surface water extraction or pumping for distribution).
(v) Post-harvest infrastructure	*5*	• Finance the design and construction of a post-harvest infrastructure. The project would adopt a framework for climate-resilient infrastructure mainstreaming that is aligned with the 2015 Department of Public Works and Highway (DPWH) Design Guidelines, Criteria and Standards, which provide climate-proofed technical planning parameters for rural infrastructure.	• Use of solar panels for renewable energy generation in post-harvest facilities to power small equipment and light fixtures
Component 3: Ancestral Domain Agri-Fisheries Production and Enterprise Development (IBRD US$20 million)			
(viii) Input supply	*3*	• Include stress-tolerant varieties such as drought-resistant seeds in enterprise investments.	
(ix) Production	*4*	• Invest in climate-resilient technologies to protect crops from extreme weather events, to adapt to heat and water stresses and to promote improved water management practices. Technologies would include greenhouses, crop diversification, integrated pest management, drip irrigation, construction of rain shelters, and the like.	• Finance to the extent possible energy-efficient equipment (i.e., proper selection of tractor engine speed) and practices such as reducing the number of field operations by switching to reduced-till or no-till farming.
(x) Post-harvest operations	*3*	• Use of small refrigeration equipment and proper packaging to reduce food loss and waste	• Invest in solar dryers. • Use of solar panels for renewable energy

			generation in post-harvest facilities to power small equipment and light fixtures
(xi) Aggregation/ Assembly	*5*	• Finance the construction of warehouses and trading posts to reduce post-harvest losses especially during extreme weather events. The project would adopt a framework for climate-resilient infrastructure mainstreaming that is aligned with the 2015 Department of Public Works and Highway (DPWH) Design Guidelines, Criteria and Standards, which provide climate-proofed technical planning parameters for rural infrastructure.	• Use of solar panels for renewable energy generation to power small equipment and light fixtures
(xii) Training and support for the implementation of business plans	*1*	• Provide training and support in implementing of climate-informed Business Plans.	
(xiii) TA to IPOs	*3*	• Provide technical assistance to IPOs to strengthen their knowledge base and operational skills on climate-smart agricultural practices (stress-tolerant varieties, greenhouses, crop diversification, integrated pest management, drip irrigation, construction of rain shelters), post-harvest handling, storage, marketing, and processing	
(xiv) Provision of weather-related information and field demonstrations for CSA and fisheries practices	*1*	• Finance the provision of timely weather-related information to help beneficiaries plan agricultural activities and prepare for weather events. • Support crop diversification to buffer crop production from the impacts of extreme weather events. • Invest in drip irrigation which would help address water scarcity issues in the project's location and avoid risk of large-scale crop failures. • Finance the construction of rain shelters which would help protect crops from precipitation and other extreme weather events.	

ANNEX 6: Map


PHILIPPINES
MINDINAO ISLAND
REGION CAPITALS
PROVINCE BOUNDARIES
REGION BOUNDARIES
PHILIPPINES
MANILA
Philippine Sea
Mindanao Island
MALAYSIA
125°E
120°E
10°N
5°N
Dinagat Islands
Surigao del Norte
Surigao del Sur
Agusan del Norte
Agusan del Sur
Butuan
Camiguin
Mindanao Sea
Misamis Oriental
Misamis Occidental
Cagayan de Oro
XIII Caraga
X Northern Mindanao
Lanao del Norte
Bukidnon
Zamboanga del Norte
Zamboanga del Sur
Zamboanga Sibugay
Pagadian
IX Zamboanga Peninsula
Lanao del Sur
Sulu Sea
Davao del Norte
Davao de Oro
Davao Oriental
XI Davao Region
Cotabato City
Cotabato
Maguindanao
Davao City
Davao del Sur
Davao Gulf
City of Isabela
Moro Gulf
BARMM
Bangsamoro Autonomous Region in Muslim Mindanao
Basilan
Sultan Kudarat
Koronadal
Sarangani
Davao Occidental
XII Soccsksargen
Sulu
Tawi-Tawi
MALAYSIA
Celebes Sea
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