ADAPTATION FUND

AFB/PPRC.36/22
15 September 2025

Adaptation Fund Board
Project and Programme Review Committee
Thirty sixth Meeting
Bonn, Germany, 7-8 October 2025

Agenda Item 4(t)

PROPOSAL FOR PHILIPPINES

Background

1. The Operational Policies and Guidelines (OPG) for Parties to Access Resources from the Adaptation Fund (the Fund), adopted by the Adaptation Fund Board (the Board), state in paragraph 45 that regular adaptation project and programme proposals, i.e. those that request funding exceeding US$ 1 million, would undergo either a one-step, or a two-step approval process. In case of the one-step process, the proponent would directly submit a fully-developed project proposal. In the two-step process, the proponent would first submit a brief project concept, which would be reviewed by the Project and Programme Review Committee (PPRC) and would have to receive the endorsement of the Board. In the second step, the fully-developed project/programme document would be reviewed by the PPRC, and would ultimately require the Board's approval.

2. The Templates approved by the Board (Annex 5 of the OPG, as amended in March 2016) do not include a separate template for project and programme concepts but provide that these are to be submitted using the project and programme proposal template. The section on Adaptation Fund Project Review Criteria states:

> *For regular projects using the two-step approval process, only the first four criteria will be applied when reviewing the 1st step for regular project concept. In addition, the information provided in the 1st step approval process with respect to the review criteria for the regular project concept could be less detailed than the information in the request for approval template submitted at the 2nd step approval process. Furthermore, a final project document is required for regular projects for the 2nd step approval, in addition to the approval template.*

3. The first four criteria mentioned above are:
   (i) Country Eligibility,
   (ii) Project Eligibility,
   (iii) Resource Availability, and
   (iv) Eligibility of NIE/MIE.

4. The fifth criterion, applied when reviewing a fully-developed project document, is:
   (v) Implementation Arrangements.

5. It is worth noting that at the twenty-second Board meeting, the Environmental and Social Policy (ESP) of the Fund was approved and at the twenty-seventh Board meeting, the Gender Policy (GP) of the Fund was also approved. Consequently, compliance with both the ESP and the GP has been included in the review criteria both for concept documents and fully-developed project documents. The proposal template was revised as well, to include sections requesting demonstration of compliance of the project/programme with the ESP and the GP.

6. At its seventeenth meeting, the Board decided (Decision B.17/7) to approve "Instructions for preparing a request for project or programme funding from the Adaptation Fund", contained in the Annex to document AFB/PPRC.8/4, which further outlines applicable review criteria for both

concepts and fully-developed proposals. The latest version of this document was launched in conjunction with the revision of the Operational Policies and Guidelines in November 2013.

7. Based on the Board Decision B.9/2, the first call for project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Fund was sent out on April 8, 2010.

8. The following project concept document titled “Agricultural Interventions for Development: Harnessing and Enhancing Adaptation and Resilience Tools and Strategies for the Philippine Fruit and Vegetable Industry” was submitted for Philippines by United Nations Industrial Development Organization (UNIDO), which is a Multilateral Implementing Entity of the Adaptation Fund.

9. This is the third submission of the project concept using the two-step submission process.

10. The current submission was received by the secretariat in time to be considered in the forty-fifth Board meeting. The secretariat carried out a technical review of the project proposal, assigned it the diary number AF00000437, and completed a review sheet.

11. In accordance with a request to the secretariat made by the Board in its 10th meeting, the secretariat shared this review sheet with UNIDO, and offered it the opportunity of providing responses before the review sheet was sent to the PPRC.

12. The secretariat is submitting to the PPRC the summary and, pursuant to decision B.17/15, the final technical review of the project, both prepared by the secretariat, along with the final submission of the proposal in the following section. In accordance with decision B.25.15, the proposal is submitted with changes between the initial submission and the revised version highlighted.

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project Concept

Country/Region: The Philippines
Project Title: Agricultural interventions for development: Harnessing and Enhancing Adaptation and Resilience Tools and Strategies for the Philippine Fruit and Vegetable Industry
Thematic Focal Area: Food Security
Implementing Entity: United Nations Industrial Development Organization (UNIDO)
Executing Entities: UNIDO and Mindanao Development Authority (MinDA)
AF Project ID: AF00000437
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): 10,000,000
Reviewer and contact person: Una May Gordon
Co-reviewer(s):
IE Contact Person:

Technical Summary	The project "Harnessing and Enhancing Adaptation and Resilience Tools and Strategies for the Philippine Fruit and Vegetable Industry" aims to enhance the adaptive capacity and resilience of local farmer communities producing fruits and vegetables in Mindanao Island, to vulnerabilities caused by climate change, extreme weather events and disasters, leading to improved food security and environmental protection at the local level. This will be done through the three components below: Component 1: Establishment of integrated community-based shared service facilities to enhance adaptive capacity and climate-change resilience of farmers at the local level (USD 4,300,000); Component 2: Strengthening the farmers' access to mobilized finance mechanisms in support of their transition to sustainable agriculture practices (USD 3,000,000); Component 3: Institutional and community strengthening through policy advocacy and knowledge management (USD 1,450,000). Requested financing overview: Project/Programme Execution Cost: USD 466,590 Total Project/Programme Cost: USD 9,216,590

	Implementing Fee: USD 783,410 Financing Requested: USD 10,000,000 The proposal includes a request for a project formulation grant and/or project formulation assistance grant of USD 150,000. The initial technical review raises some issues, such as the need for more detail about the resources required for the project's benefits sustainability, as well as for identifying overlapping areas with other related projects (already implemented or in progress), as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second review notes most issues have been clarified while others remain, such as project benefits and risks as discussed in a number of CRs and CARs. The third (final) technical review finds that all remaining CRs and CARs have been addressed.
Date:	September 10, 2025

Review Criteria	**Questions**	**First Technical Review Comments July 21, 2025**	**Second Technical Review Comments - August, 22 2025**	**Third Technical Review Comments- September 10 2025**
Country Eligibility	1. Is the country party to the Kyoto Protocol, and/or the Paris Agreement?	**Yes.** The country has signed and ratified the Kyoto Protocol and the Paris Agreement.	-	-
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** The Philippines is ranked first with the highest disaster risk among 193 countries assessed in 2024. Climate change-induced and extreme events are now often observed and	-	-

		experienced across the country, particularly in the Mindanao regions more recently.		
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.** As per the Endorsement letter dated June 26th, 2025.	-	-
	2. Does the length of the proposal amount to no more than Fifty pages for the project/programme concept, including its annexes?	**Yes.** The concept note is 50 pages including its annexes (from the 51 total pages, page 42 is blank).	-	-
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	**Yes, but further information is required.** The narrative of the project is well-explained and clearly link to climate change impacts in Philippines. The concept note describes well-aligned and concrete adaptation actions to address the effects of climate change, with an outcome focus. However, more details are required. **CR1:** Kindly add a Theory of Change diagram of the project under Part II: Project Justification. **CAR1:** Please, kindly add explicitly the alignment with the Adaptation Fund Strategic Objectives in Part I, page 19.	**CR1: Cleared** **CAR1: Cleared.** **As per insertion on page 19 para 52.**	-

	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes, but further information is required.** The concept note outlines the project's economic, social, and environmental benefits; and the relationship between activities and outcomes is well explained. The concept note does include an Initial Gender Assessment, outlining women's socioeconomic situation in Philippines. However, more information about the beneficiaries from specific vulnerable groups, as well as data disaggregated by gender is required. **CR2:** Please also explain any peculiarities regarding how men and women are impacted by climate change. Please refer to any studies undertaken. The project should provide benefits that address these issues. **CR3:** Kindly provide, when possible, an estimation of the benefits to be quantified.	**CR2: Cleared** as per paragraph 46-48 which highlight gender-related challenges and activities which respond to them. **CR3: Not cleared.** Acknowledging reference is made to benefits, these should be captured in the appropriate section. Please update paragraphs 62-64	**-** **CR 3: Cleared.** As per amendments to paragraph 62.64.

		CR4: Kindly provide information on the expected beneficiaries disaggregated by gender and age, when possible. Please explain how the project will ensure the equitable distribution of benefits.	accordingly and note it should be finalised under the PFG. **CR4: Not Cleared.** Please reflect the estimated number of beneficiaries at paragraph 61.	**CR4: Cleared.** As per amendment to polarograph 61.
		CR5: Please provide population statistics disaggregated by gender and age, if possible, under the "Preliminary Gender Assessment", page 18.	**CR5: Cleared** as per Table 1- Factsheet on Women and Men as per "Preliminary Gender Assessment", page 18.	
		CAR2: Please outline the benefits the program will provide specifically to marginalized and vulnerable groups and indigenous communities.	**CAR2: Cleared.** It is understood that this will be well-described and well-quantified during full project preparation phase.	
	5. Is the project / programme cost effective?	**Yes, but further information is required.** The concept note outlines broadly the scenarios with and		**-**

		without the proposed intervention, under each component, with an estimation of beneficiaries. However, the information provided does not demonstrate the cost-effectiveness of the selected measures. **CR6:** Please provide a sound justification for the cost-effectiveness of the project and selected measures, from a sustainability point of view. For this, the proposal should explain alternative options to the proposed measures and include some quantitative estimates when possible.	**CR6 – Cleared** as per Table 4, page(s).	
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	**Yes, but further information is required.** The concept note outlines all relevant plans and strategies for this project; however, more detail is required. **CR7:** Kindly add the specific contribution of the project's activities to the plans and strategies identified. Also, please include how the project is consistent with relevant sectoral policies (e.g., water, agriculture).	**CR7: Cleared** as per paragraph 74	**-**

	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**Yes, but further information is required.** While the concept note provides information about relevant laws and policies related to the project, information on relevant national technical standards in relation to the project's activities is important to include in the Concept note. **CR8:** Kindly include all technical standards (e.g., building codes, regulations) link to the proposed project's activities and state their compliance, for each regulation/law identified.	**CR8: Cleared** as per information in the table detailing the regulations. However, more information will be required during the PFG phase.	-
	8. Is there duplication of project / programme with other funding sources?	**Not clear.** Although relevant projects are outlined in Part II.F, more specific details are required to clearly identify all potential overlapping areas with the proposed project. **CR9:** Kindly include a more comprehensive list of projects that are or have been implemented in The Philippines and are related to the proposed	**CR9 –Not Cleared** as per Table 5 and we acknowledge that there will be further elaboration in the full proposal.	**CR9: Cleared.** As per amendments to column 2 at table 5.

		project. For all projects, please include details such as main project interventions, timeline, target population, and specific location within the country, and complementarity and synergies with proposed project. **CR10:** The lack of overlap should be clearly justified (e.g. by indicating the distinct geographic locations and/or types of interventions).	Please be clear on the use of language in the proposal stage as this project will be complementing existing projects and not the other way around. Remember to include start dates of the projects. Please include the source of funding/name of donor for the projects in Table 5. **CR10:** This is cleared as per the proponent's response "So far, the identified projects differ in location, focus areas and approach, and are therefore seen as complementary rather than overlapping with the proposed intervention" on the expectation that the PFG will elaborate complementarity.	
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** **As per information provided in Part II. G, Learning and Knowledge Management, page 30.** Under component 3	-	-

		(Outcome 3.2: The knowledge management and sharing platform is developed and accessible), activities for dissemination and knowledge management are included and well-explained.		
	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes, but further information is required.** Information provided in Annex 2, pages 43-51 describes, for each session, the following: date and place, organization, participants and their role within the organization, evidence of the meetings, and a summary of the topics discussed. **CR11:** Please highlight the challenges specific to women. If challenges are the same as men, please also specify. Please also refer to CR2.	**CR11: Cleared** as per Annex 2 which references a meeting on Dec 12, 2024. However, it is expected that meetings will occur under the PFG to inform project design	-
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Not clear.** The concept note provides arguments for different aspects of the project's funding and the impact on The Philippines community. The demonstration of how the project will address its adaptation objective is not fully clear. The proposal does		-

		not provide information about additional funding. **CR12:** Please provide information about whether this project will meet its outcomes and outputs solely with the resources of the Adaptation Fund, and how the proposed project's objective will be achieved in regards adaptation.	**CR12: Cleared** as per paragraph 90	
	12. Is the project / program aligned with AF's results framework?	**Yes.** **As per information provided in Table 7, pages 36-38.** The concept note delivers information at the outcome and output level, between the proposed project and the AF's results framework.	**-**	**CAR1 (NEW):Cleared.** As per amended results framework alignment table.
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes, but further information is required.** The project aims for the sustainability of the project's benefits through a triple-bottom line approach that includes social, economic and environmental sustainability. The concept note provides well-formulated correlation between components, activities and results. However, it would be		**-**

		beneficial to mention the regulations and resources needed for sustainability, including a clear statement about how replication and scaling up will be achieved. **CR13:** Kindly briefly explain the arrangements required for the project's benefits sustainability, including regulatory and financial resources. Please explain how the governance structures will sustain the collaborative partnership between LGUs, academia and private sector. **CR14:** Please explain how replication and scaling up of the project's activities and benefits will be achieved.	**CR13- Cleared** as per updates to paragraph 97 "Approaches to the robustness of governance mechanism". **CR14: Cleared** as per paragraph 99 through the integrated community-based shared service facilities.	
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Not clear.** The concept note assesses all 15 principles from the ESSP against the proposed project activities. For each one, the proposed project provides a risk statement (no risk, low, and medium) and a description. However, the project classification (A, B or C) from the screening is not included.		

		The Initial Gender Assessment is included in Part I. I, Preliminary Gender Assessment. **CAR3:** Kindly state the project classification from the screening (Category A, B or C) in Part II. K. **CR15:** Please review Table 6 and state and expand, when corresponds, all potential impacts (direct, indirect, transboundary and cumulative), including how it is planned to mitigate and manage each risk. For more information, please visit: AF's ESP guidance: https://www.adaptation-fund.org/wp-content/uploads/2016/07/ESP-Guidance_Revised-in-June-2016_Guidance-document-for-Implementing-Entities-on-compliance-with-the-Adaptation-Fund-Environmental-and-Social-Policy.pdf	**CAR3: Cleared** as per paragraph 101 in Section L, classifies it as Category B. **CR15: Not cleared.** Some sections of Table 7 highlight risk though implicit. Please ensure risks/impacts are clearly stated especially for Indigenous People which is Low to Medium risk. It is acknowledged this will be more in-depth under the PFG.	**CR15: Cleared.** As per amendments to Table 7.
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	-	-
	2. Is the Implementing Entity Management Fee at or below	**Yes, however, further information is needed.**		-

	8.5 per cent of the total project/programme budget before the fee?	**CR16:** Please clarify which entity is responsible for executing the requested PFG (150,000 USD), as the current PFG form lists 'Mindanao Development Authority (MinDA), The Philippines, UNIDO'.	**CR16: Cleared.**	
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes.**	**-**	**-**
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.** UNIDO is an accredited MIE. Accreditation Expiration Date: November 30th, 2025.	**-**	**-**
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	n/a at concept stage		
	2. Are there measures for financial and project/programme risk management?	n/a at concept stage		
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social	n/a at concept stage		

	Policy and Gender Policy of the Fund?			
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage		
	5. Is an explanation and a breakdown of the execution costs included?	n/a at concept stage		
	6. Is a detailed budget including budget notes included?	n/a at concept stage		
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	n/a at concept stage		
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage		
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage		
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage		

ADAPTATION FUND

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

Title of Project:	**Agricultural interventions for development: harnessing and enhancing adaptation and resilience tools and strategies for the Philippine fruit and vegetable industry**
Country:	**The Philippines**
Thematic Focal Area:	Food Security
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	**United Nations Industrial Development Organization (UNIDO)**
Executing Entities:	UNIDO and Mindanao Development Authority (MinDA)
Amount of Financing Requested:	10,000,000 (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes ☒ No ☒

Amount of Requested financing for PFG: 150,000 (in U.S Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes ☒ No ☐

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

Stage of Submission:

☐ This concept has been submitted before.

☒ This is the first submission ever of the concept proposal.

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

Please note that concept note documents should not exceed 50 pages, including annexes.

Official Use Only

Table of Contents

List of Figures

List of Tables

Abbreviations and Acronyms

ABCG Network	The network used in stakeholder engagements involving representation of groups from **A**cademe and research institutions, **B**usiness and industry, **C**ommunities including cooperatives, associations, civil society, and non-government organizations, and **G**overnment sectors.
AF	Adaptation Fund
ARB	Agrarian Reform Beneficiaries
BPI	Bureau of Plant Industry of the Department of Agriculture
CE	Circular Economy
CSW	Cold Storage Warehouses
DA/DA-AMIA	Department of Agriculture/-Adaptation and Mitigation Initiative in Agriculture
DENR	Department of Environment and Natural Resources
ENSO	El Niño Southern Oscillation
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESP	Environmental and Social Policies
ESSP	Environmental and Social Safeguards and Principles
FPIC	Free and Prior Informed Consent
GAD	Gender and Development
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GE	Green Economy
GEDSI	Gender Equality, Disability, and Social Inclusion
GEWE	Gender Equality and Women Empowerment
GHG	Greenhouse gas emissions
GIS	Geographic Information System
GRM	Grievance and Redress Mechanism
HVCC	High Value Commercial Crops
ICBSSFs	Integrated Community-based Shared Service Facilities
IP/IPCC/ICC	Indigenous Peoples/Indigenous Peoples and Cultural Communities/Indigenous Cultural Communities
MinDA	Mindanao Development Authority
NAP	National Adaptation Plan
NbS	Nature-based Solutions
NDC	Nationally Determined Contribution
NGO	Non-Government Organizations
PAR	Philippine Area of Responsibility
PDP	Philippine Development Plan
PIC	Prior Informed Consent
PMU	Project Management Unit
PRDP	Philippine Rural Development Programme
PSA	Philippine Statistics Authority
PSC	Project Steering Committee
OSH	Occupational Safety and Health
SDG	Sustainable Development Goals
SOCCSKSARGEN	Referred to as Region 12, formerly known as Central Mindanao, located in south-central Mindanao, its name is an acronym that stands for the region's four provinces and one highly urbanized city (**So**uth Cotabato, **C**otabato or North Cotabato, **S**ultan **K**udarat, **Sar**angani, and **Gen**eral Santos City). The regional center is in Koronadal, located in the province of South Cotabato. The center of commerce and industry is General Santos City, which is the most populous city in the region.
TCs	Tropical cyclone/s
UNIDO	United Nations Industrial Development Organization
VC/VCA	Value Chain/Value Chain Analysis

PART I: PROJECT INFORMATION

Project Background and Context

A. Geography and Population

1. The Republic of the Philippines is an archipelagic country in Southeast Asia composed of 7,641 islands with three (3) major island groups, namely: Luzon, Visayas, and Mindanao. Figure 1~~Figure 1~~ below shows the map of the country with 18 regions, 82 provinces, 146 cities, 1,488 municipalities and 42,036 barangays and a total land area of about 300,000 sq km with coastlines reaching 36,289 km (the world's 5th longest). It is a unitary state that is bounded by the West Philippine Sea (also known as South China Sea) to the west, the Philippine Sea to the east which directly connects to the Pacific Ocean, and the Celebes Sea to the south. It shares maritime borders with Taiwan to the north, Japan to the northeast, Palau to the east and southeast, Indonesia to the south, Malaysia to the southwest, Vietnam to the west, and China to the northwest. Its geographic location has many advantages and disadvantages, which are discussed in the following appropriate sections below.

2. The Philippines is currently the world's twelfth-most-populous country, with diverse ethnicities and cultures. Based on 2020 Population Census,[1] the country is home to a population of over 109 million; with an annual growth rate of 1.63%, its 2024 estimate is already over 114 million, which is predicted to reach 142 million by 2045. In terms of population per major island group, Luzon is the most populated with over 62 million or 57.04% of the total population of the country in 2020, followed by Mindanao with over 26 million (24.08%) and Visayas with over 20 million (18.88%). The most populated cities in these major island groups are Quezon City in Luzon with over 2.96 million, Davao City in Mindanao with over 1.77 million, and Cebu City with slightly less than a million (964,169) in the Visayas. As such, these cities tend to have major hubs for products and services including the supply of agricultural crops transported from various producers of neighboring islands.

Figure 1. Map of the Philippines showing the 18 regions and the respective provinces.

B. Political and Economic Background

3. The country has a democratic government which is a constitutional republic with a presidential system. The Philippine economy is largely attributed to three (3) key sectors: **agriculture** (including forestry, fishing, and hunting), **industry**, and **service** sectors. In 2023, the service sector contributed the highest at 62.3% of the total GDP, followed by the industry sector at 29.1%, with **agriculture sector having the lowest contribution at only 8.6%**.[2] While agriculture is one key industry for the Philippines to expand economically, as it is abundant with agricultural crops considering its natural resources, biodiversity, and tropical climate, it has remained the most challenging industry to develop further for various reasons, and nowadays the challenge is becoming more complex as climate change, natural calamities, and disasters are impacting the country severely.

4. The country's nominal gross national product (GDP) is estimated at US$ 507.67 billion in 2025, equivalent to a GDP of US$1.476 trillion based on PPP (purchasing power parity). Since 2010, it continues to enjoy one of the highest GDP growth rates, at 5.6% in 2023-2024 and currently at 6.1% (2025 estimates) inspite of the Covid-19 pandemic.

[1] Extracted from the Philippine Statistics Authority Openstat: https://openstat.psa.gov.ph
[2] Bangko Sentral ng Pilipinas, 2024. *Philippine Selected Economic and Financial Indicators*. Archived from the original on Mar 28, 2024.

Formatted: Font: Aptos, 10.5 pt

The country's primary exports include semiconductors and electronic products, transport equipment, garments, chemical products, copper, nickel, abaca, coconut oil and fruits. Its major trading partners include Japan, China, the United States of America, Singapore, South Korea, the European Union (Netherlands, Germany), Hong Kong, Taiwan, and Thailand.

5. The country's economy has been growing steadily over the decades and is on its way to becoming one of the largest economies in Asia. It is grouped in a second tier for emerging markets or newly industrialized countries. However, Filipinos are still not truly experiencing the benefits of this economic growth. Major problems remain deeply rooted and unresolved as indicated by the wide income and growth disparities and socio-economic status among the people in different regions, the high rates of poverty incidence, changing priorities in government investments for education, health, and infrastructure development (which are necessary to ensure future growth), and the persistent corruption and bureaucracy in government.

6. The country is reported to have 19.99 million (18.1%) living below the poverty threshold and 3.5 million families (13.2%) were considered poor. In 2023, the highest poverty incidence was recorded in Zamboanga Peninsula at 24.2%, followed by the Bangsamoro Autonomous Region of Muslim Mindanao (BARMM) at 23.5%, both regions are located in Mindanao Island - which recorded the highest overall poverty incidence by population. Four more additional regions in Mindanao also recorded high poverty incidence such as Region 13 Caraga at 14.9%, Region 12 SOCCSKSARGEN at 17%, Region 11 Davao at 11.3%, and Region 10 Northern Mindanao at 18.4%.[3] The high poverty incidence, which is exacerbated by the impact of climate change, is one of the major motivations in selecting the appropriate demonstration sites for this project in Mindanao.

C. Socio-cultural Background

7. The Philippines has a unique socio-cultural background, which is a good blend of Asian traditions, marked distinctly with Malay and Chinese cultures, heavily influenced by centuries of Spanish and American colonial rule, and mixed with Eastern and Western customs. All these cultures resulted in a distinctive blend of customs that emphasizes values on strong family ties, respect for elders, community harmony (manifested by strong community organizations such as associations, cooperatives, and society-based organizations), which prioritizes the needs and objectives of the group over that of the individual. Decision-making is often influenced and conducted based on consensus by the family or community/group over individual wishes.

8. In this project, it is important to observe this unique socio-cultural nature of the Filipino communities, involving a mixture of indigenous peoples and local communities, which form the strong and colorful fabric of society. More specifically, in identifying stakeholders and beneficiaries for the project, there is a great need to consider individual insights and desires of farmers and balance these with the organization's needs and aspirations.

D. Climate Change Vulnerability and Risks

9. The Philippines is ranked first with the highest disaster risk among 193 countries assessed in 2024.[4] It is one of the most vulnerable countries to climate change and extreme events, which specifically experiences the four climatic impact-drivers (CIDs) deemed critical to the country's vulnerability, namely: **(1) increased temperature and drought, (2) sea level rise and extreme sea levels, (3) extreme precipitation,** and **(4) extreme winds and tropical cyclones.** These climate change-induced and extreme events severely affect the agricultural sector, impacting farmers most especially, which exacerbates poverty incidence, hunger, and pose disaster risks among the communities in the countryside. Based on stakeholder consultations with farmers-cooperatives (see Annex 2 for details), these climate change-induced and extreme events are now often observed and experienced across the country, particularly in the Mindanao regions more recently. It is known that many years ago, Mindanao had always been safe from extreme events such as typhoons, flooding, drought, high temperatures, and the like; however, this is not the case anymore at the present times.

10. The country has been experiencing higher-than-normal temperatures since the 1980s, and its annual mean temperature has risen by 0.75°C (Figure 2~~Figure 2~~).[5] Its inter-annual variability also has an increasing trend of 0.1°C per decade.[6] On the other hand, sea level changes in the Philippines from 1993-2015 indicate largest rates

Formatted: Font: Aptos, 10.5 pt

[3] *Ibid*.
[4] Bündnis Entwicklung Hilft / IFHV (2024). *World Risk Report 2024*. Berlin: Bündnis Entwicklung Hilft.
[5] Lopez OM, 2023. Center for Climate Change Adaptation and Disaster Risk Management Foundation Inc., and DOST-PAGASA's *State of the 2020 Philippine Climate*, January 2023.
[6] *Ibid*.

of 4.5-5 mm per year as observed in the east of the islands of Leyte and Samar, and Mindanao, south of Zamboanga and along the south west coasts of the Central and Western Visayas (Figure 3~~Figure 3~~)[7] and further verified by recent modeling works.[8]

Formatted: Font: Aptos, 10.5 pt

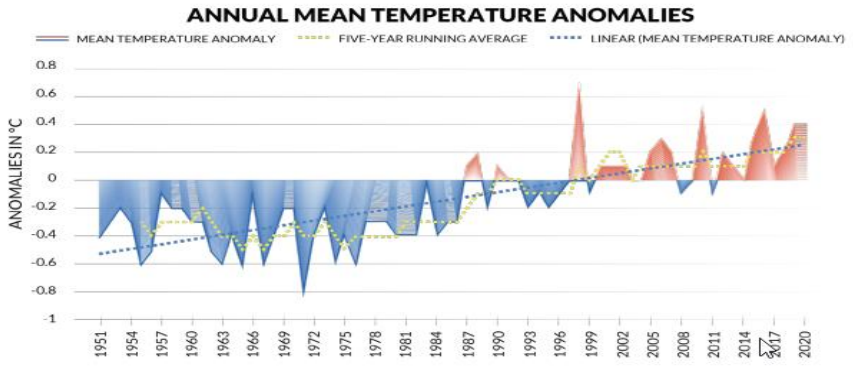

Figure 2. National annual average mean temperature anomalies from 1951 to 2020 (relative to 1991-2020 normal).

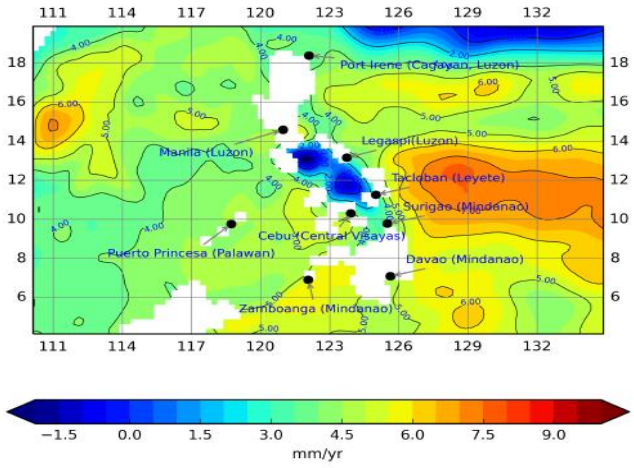

Figure 3. Sea level changes in the Philippine region from 1993-2015 produced from the AVISO Satellite observations. Largest rates of 4.5-5mm per year are observed in the east of the islands of Leyte and Samar, and Mindanao, south of Zamboanga and along the south west coasts of the Central and Western Visayas (ref: Kahana et al., 2016).

11. On the other hand, an increasing trend in precipitation was observed in the northeastern section of Mindanao and eastern portions of Visayas during the months of December (D) to February (F), which coincides with the northeast

[7] Kahana R, Abdon R, Daron J, Scannell C, 2016. *Projections of mean sea level change for the Philippines*. Met Office Report, p 32.
[8] Villarin JRT, Perez RT, Cruz FAT, Olaguera, LMP, Villafuerte II, MQ, Agustin WA, Avila FB, Basconcillo JQ, Calde DM, Dado JMB, Duran GAM, Jamero MLP, Lambrento JCA, Magnaye AMT, Manalo JA, Tibig LV, 2024. 2024 Philippine Climate Change Assessment: The Physical Science Basis. The Oscar M. Lopez Center for Climate Change Adaptation and Disaster Risk Management Foundation, Inc.

monsoon season from 1951-2010.[9] These areas are at an increased risk of flooding during this time. Similar precipitation trends were observed in the central portions of Luzon and northeastern sections of Mindanao on March (M) to May (M). In the following seasons of June (J) to August (A) and September (S) to November (N), increasing precipitation trends were observed in Ilocos Region as well as the northeastern and southern parts of Mindanao, although, most parts of the country experienced a decreasing trend in the precipitation (Figure 5~~Figure 5~~).[10]

Formatted: Font: Aptos, 10.5 pt

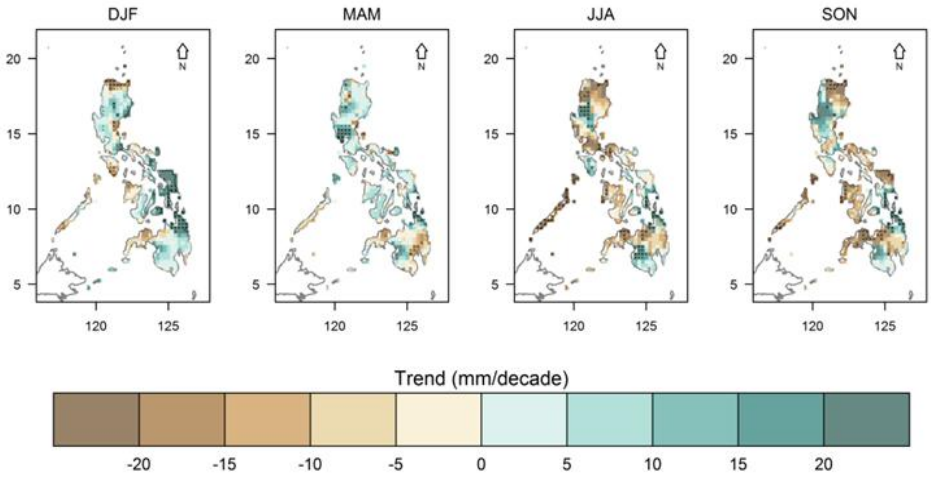

Figure ~~4~~5. Observed trends in seasonal total precipitation in the Philippines from 1951-2010. Areas marked with dots denote statistical significance at 5% based on Mann-Kendall test.

12. In addition, the country is highly exposed to tropical cyclones (TCs) generated in the western North pacific (WNP) region with an average of 20.2 TCs entering the Philippine Area of Responsibility (PAR) each year and an annual average of 8.4 TCs to make landfall (LF) in the country (Figure 5).[11] Data shows a decreasing trend in terms of frequency of TCs but very strong TCs are becoming more frequent, characterized by maximum sustained wind speeds greater than 170 km/h. In addition, the number of typhoons and super typhoons in the last 30 years have accounted for about half of the total TCs in the country. These trends show the evolving nature of tropical cyclones in the country that necessitates a pro-active and adaptive approach to climate-change resilience, including robust strategies for risk reduction, preparedness, and response to effectively address the intensifying threats posed by these extreme weather events.[12] Further, these trends can vary from season to season and year to year, influenced by factors such as the El Niño and La Niña events. During El Niño years from July to September, TC activity tends to increase, and the reverse trend is observed during La Niña years, due to higher (during El Niño) or lower (during La Niña) atmospheric moisture, but this reverses during October to December. These events actually confused people in the local communities, which made them very anxious during these now-commonly-occurring instances. In almost all these extreme events, significant human and economic losses are experienced, emphasizing the need and urgency to address the impact of climate change and enhance the country's resilience. The increasing cost of damage for so many years never fails to remind the country of its growing vulnerability to these disasters.

[9] IPCC, 2021. *Summary for Policymakers*. In: Climate Change 2021: The Physical Science Bases. Contribution of Working group I to the 6th Assessment Report of the Intergovernmental Panel on Climate Change (Figure SPM.3).
[10] *Ibid*.
[11] DOST-PAGASA's Annual Report on the Philippine Tropical Cyclones, 2021.
[12] Excerpts from the Philippine National Adaptation Plan 2023-2050.

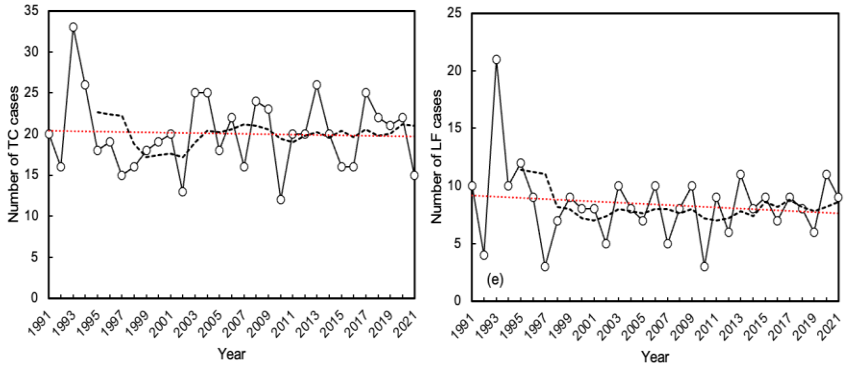

Figure 5. Total number of TCs that occurred from 1991-2021 (Left) and crossed or made landfall in the Philippines (Right).

13. These climatic impact drivers (CIDs) are summarized and considered to be of extreme importance to be addressed in the Philippine National Adaptation Plan.[13] As indicated in Figure 5~~Figure 6~~, storms composed 56% among the top climate-related events in the Philippines, followed by flooding at 24%, which are directly caused by these CIDs.

Formatted: Font: Aptos, 10.5 pt

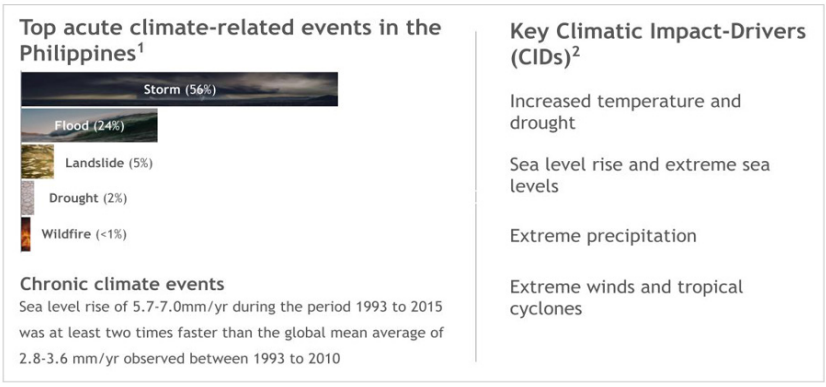

Figure ~~5~~6. Climatic impact drivers relevant to the Philippines (Source: Philippine National Adaptation Plan 2023-2050).

1: Size of bar corresponds to % of total annual natural hazards occurrence during 1990 to 2018;

2. Aligned with NPTE's identified top climate risks for the Philippines; 3. Based on satellite observations (AVISO altimetry data) taken from 1993 to 2015, the sea level has risen by as much as 5.7-7.0 mm/yr over the Philippine Sea. Such rate is approximately double the highest global average rate of 2.8-3.6 mm/yr, which was observed between 1993 to 2010.

E. Climate Change and Its Impact on Agriculture and Food Security

14. These climate impact drivers have severely impacted the most vulnerable sector - the agriculture sector - of the country and consequently its food security. Considering the vast agricultural farms in Mindanao, which are located in areas which are over 400m above sea level, the sector is heavily affected by **increased climatic temperature, extreme precipitation, and extreme winds and tropical cyclones**. Figure 6~~Figure 7~~ below shows the schematic diagram of the climate change adaptation challenges that are intended to be addressed in this project.

Formatted: Font: Aptos, 10.5 pt

[13] Climate Change Commission and Department of Environment and Natural Resources, 2023. National Adaptation Plan of the Philippines 2023-2050. Climate Change Commission, Philippines.

15. Climate change as manifested by these climate-impact drivers (CIDs) is observed to significantly threaten agricultural productivity and food security. Increased temperature and changes in rainfall patterns cause heat stress in crops, potentially affecting its growth and damaging the crop itself, resulting in lower yields. Water scarcity due to drought or changes in precipitation patterns and extreme winds and tropical cyclones cause altered wet and dry periods, or worst result in flooding, which can severely affect crop growth and productivity, to the extent of destroying farmlands and disrupt agricultural infrastructure and homes, further exacerbating these impacts. In addition, warmer temperatures and changes in rainfall can create favorable conditions for the spread of pests and plant diseases, causing outbreaks that affect crop production.

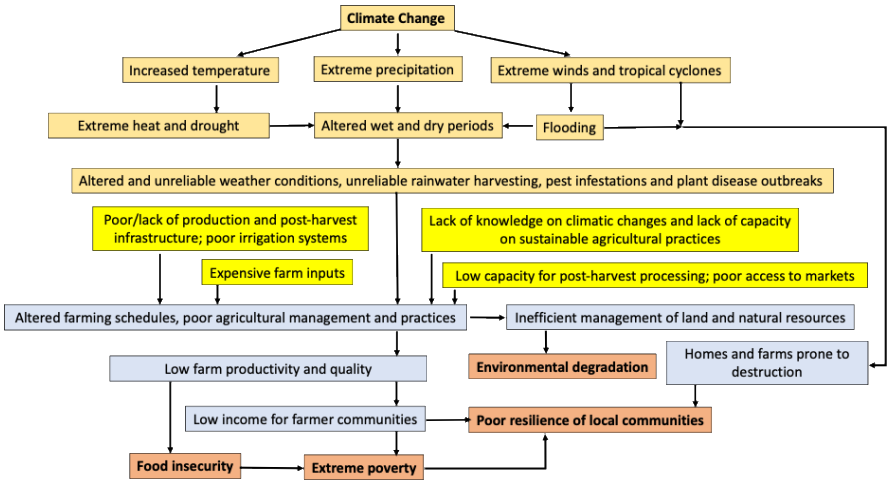

Figure 67. Schematic diagram of the climate change adaptation challenges that are addressed in this project, which shows the identified climate change impacts (yellow-orange boxes), vulnerable infrastructure or lack thereof (yellow), direct consequences/outcomes (blue), and impact on local communities (orange).

16. Climate change is exacerbating water issues in the country as the water cycle becomes more volatile, which could lead to more frequent and equally extreme events such as droughts and floods, and erratic temperature trends. Variations in rainfall, geographic disparities, growing water demand, and periodic El Niño/La Niña patterns cause the frequent water shortages. Due to this, adequate water supply is not assured in many parts of the country especially in remote, rural, off-grid areas and islands with the deterioration in the quality and quantity of surface and groundwater sources. Water-related issues include low freshwater availability per capita, water shortages, and water quality issues.

17. In the agriculture sector, limitations in water supply and irrigation facilities contribute to the challenges of farmers in increasing farm yield and productivity. This is confirmed through stakeholder engagements in many regions in Mindanao where agriculture is the major economic activity. Sustainable and integrated water management is necessary through ecosystems protection, circular economy approaches focusing on innovations for water reuse, wastewater treatment, reuse, and recycling, and reduced water consumption through good irrigation systems, data-driven technologies, and climate-resilient infrastructure.

18. In addition, climate change can significantly disrupt farm-food supply chain which results in the reduction of food supply, leading to shortages and higher prices. Extreme weather events often delay and disrupt water and energy supply, transport routes, damage storage facilities, and cause issues and delays in farm product/food delivery to customers. Higher temperatures can also cause spoilage and contamination, which increases food waste and further reduction in food supply and availability. All these scenarios result in low productivity, shortage of food, higher costs, and meager income for the farmers and farm workers.

19. With the current climate-induced threats, the Philippines is seriously facing challenges with food security and extreme poverty, with causes that include disasters, natural calamities, and limited working resources. In 2023, 44.7% of the population[14] faced moderate or severe food insecurity and the poorest people live in disaster-prone areas; this figure has not improved dramatically since 2017-2019 as the country had the most food insecure people in Southeast Asia, which is exacerbated during the pandemic and by the country's severe vulnerability to climate change. In addition, 29% of the children are affected by stunted growth.[15] Just early this year 2025, the Philippines declared a food security emergency due to high prices of rice (staple food for Filipinos);[16] although, reports said the government is continuously working to stabilize rice prices. Food insecurity, which is often rooted in poverty decreases the ability to develop the country's agricultural markets and economics. Access to quality, nutritious food is fundamental to human existence. Securing access to food can produce wide ranging positive impacts. In the end, all these events redound to food insecurity and extreme poverty, causing increased malnutrition particularly among children and other vulnerable populations, and poor resilience of the local communities, notwithstanding the impact that climate change brought about onto the environment.

F. Vulnerable Agricultural Sector – Fruit and Vegetable Sub-sector

20. During project consultations, the stakeholders are acutely aware of climate change through the occurrence of extreme weather events in their local areas such as changing temperature patterns (e.g., extremely low temperatures during nighttime especially at high-altitude farmlands and extremely high temperatures during day time), rapid changes in rainfall patterns, extreme precipitation, strong winds, and tropical cyclones. They often expressed their surprise by these noticeable changes as these immediately cause temperature/water stress, occurrence of plant diseases, bouts of pest infestations, reduced harvest and increased food losses, all of which directly impact their farming activities and productivity.

21. Due to changing weather patterns, additional work is required for farm irrigation during extremely high temperatures and droughts and in spraying pest control agents during bouts infestations and plant disease outbreaks, caused by extreme changes in rainfall and temperature patterns, leading to increased labor costs and farm inputs. For example, the figure below are actual photos taken during farm visits where Chinese cabbage is fed to animals at the farm site (photo A) or left to rot in the farm (photo B), or is infested with pests and diseases (photo C). Another example is when the collected carrots are set aside (photo D) due to their high production costs against low buying prices in the market, as a result of these climate-induced challenges in the farm, leaving the farmers to opt not to harvest or sell them under this dire situation.

Photos taken of rotten vegetables in farms of Bukidnon, Region 10 during stakeholder engagement.

22. In relation to the incidence of pests and plant disease outbreaks during warmer temperatures and changes in rainfall patterns, a recent study[17] of pesticide-related health risk in fruit and vegetable farms was conducted in 4 municipalities of Bukidnon, Region 10, Philippines, known as the biggest vegetable basket in the country. This study is urged due to the rampant use of pesticides in these areas. Results show that people residing in or near these farmlands often experienced health symptoms related to pesticide exposure, and these are more severe for farmers who have direct exposure to these pesticides. The study

[14] FAO, 2023. *State of Food Security and Nutrition in the World 2023 Report*.
[15] *Ibid*.
[16] Bilyonaryo News Channel, 2025. *Follow the money: The Philippines declares a food security emergency*. February 5, 2025.
[17] Leocadio RJKRY and Paler MKO. 2024. *Pesticide-related health risk prevalence among farmland communities in the selected municipalities of Bukidnon, The Philippines*. Philippine Journal of Science 153, 6B, 2295-2309.

suggests that farmers tend to resort to immediate and excessive pest control to combat climate-induced infestations.

23. This recent study[18] is an important proof that the current practices in agricultural farming of fruits and vegetables in Mindanao, Philippines can pose severe health risks to the local farmers; and consequently, to the people and communities around these areas, where contamination of water sources is imminent. Furthermore, runoff water from these farms which are located at high elevation (around 400-1,000 meters above sea level), particularly during heavy flooding events, is most likely contaminated with these pollutants (excess farm chemicals such as fertilizers and pesticides) and eventually affect the marine ecosystems in the coastal areas, nearby seas, and oceans.

24. To further illustrate the difficult challenges of farmers, another set of photos below taken during stakeholder consultations also show the farmers' current practice of direct sun-drying of cacao beans along the roadsides. This farmer and his neighbors have no direct access to post-harvest facility (e.g., solar-powered or mechanical dryer) as it is located far from their houses and cacao farms. Due to the high buying prices of dried cacao beans, which are currently pegged at PhP 350-400 (US$ 6.4-7.3) per kg at the time of the visit, small-holder farmers would want to sell them as quickly as possible. Since there are no proper drying facilities available to them in the vicinity, sun-drying is the most practical and economically favorable process. However, this would make the crop susceptible to unpredictable climatic changes, such that this can easily be washed away during sudden heavy downpour or at least be soaked again in rainwater, thus, will attract molds and pests. On very hot days, this would result in over-drying of the beans, making it brittle. Regardless, the beans would inevitably be exposed to dirt and other airborne pollutants, rendering poor product quality, thus, only fetching a low price. In this case, whatever the farmers do during post-harvest, they are unfortunately very vulnerable to the weather conditions in the local area. This could be prevented simply when an enclosed drying facility was available for use.

Sun-drying of cacao beans along the roadsides of Sayre Highway (Davao-Northern Mindanao regions).

25. Furthermore, due to poor or lack of agricultural infrastructure such as proper transport systems and availability of post-harvest facilities, the fruit and vegetable production industry is very vulnerable to issues on large food losses (succeeding photos below) due to improper storage and handling during transport (photo A), degradation due to short shelf life, extreme weather temperatures, lack of proper storage during transit (photos B, C) and poor quality of farm produce (photo D). These result in low income and economic productivity, which further exacerbate and limit the farmers' capacity to adapt to climatic changes.

Food losses experienced by farmers in the local fruit and vegetable industry due to poor agricultural infrastructure.

[18] *Ibid.*

26. In a recent study on the analysis of fruit and vegetable value chains in the Philippines,[19] the findings highlighted the need to address the issue of high costs of labor and material inputs in producing fruits and vegetables (such as mangoes, onions, and tomatoes which were considered in the study). Labor costs alone were 40-65% for mangoes, 52-62% for red onions, and 48-49% for tomatoes; while material inputs consisting of seeds, fertilizers, and pesticides can contribute to the total production costs by 15-29% for mangoes, 34-38% for red onions, and 25-30% for tomatoes. Results of the study further revealed that the post-harvest losses also reached as high as 33.89% for mangoes, 45.06% for onions, and 24.14% for tomatoes.

27. In a recent 2024 report, the Philippines estimated the value of production in agriculture and fisheries at PhP 428.99 billion (US$ 7.8 billion[20]), indicating a year-on-year growth of only 0.05%.[21] Crop production, where fruits and vegetables are accounted, was valued at PhP 247.04 billion (US$ 4.5 billion), and is declining annually by 0.3%. While it contributes to the lowest GDP of the country, agriculture is still a major sector of the Philippine economy, employing a large proportion of the population at about 24% of the Filipino workforce. The average age of Filipino farmers ranges from 55-59 years old[22] and experts predict that the Philippines will face a critical shortage of farmers in 10-12 years if no interventions are done. This threatens the country's food security in the coming years. The country exports a variety of agriculture-based products which include bananas, coconuts, pineapples, mangoes, and other tropical fruits such as durian, cacao, and processed mixed fruits. The major agricultural systems include lowland irrigated farming, which is used to grow rice and sugarcane, rainfed farming which is used to grow coconut, corn, and cassava; and upland farming, which is often rain-fed and where irrigation is a challenge unless rich natural water sources are available in these areas.

28. The average volume of agricultural crop production in the Philippines per major island group, in which Mindanao has the highest production at 46.50% (about 51.2 million metric tons) of the total agricultural crops, followed by Visayas at 37% (about 40.74 million metric tons) and Luzon at 16.50% (18.16 million metric tons) in 2023.[23] Despite its highest contribution to agricultural productivity, Mindanao farmers encounter many challenges, among them is the lack of adequate enabling environment, support infrastructure and resources to ensure food security and capacity of farmers to adapt to climate-induced impacts. In addition, the status of the Philippine's cold storage warehouse (CSW) facilities which indicates that Luzon has the highest number (71% of total CSW facilities), followed by Visayas at 15% and Mindanao at 14%.[24] This illustrates the big disparity in the support infrastructure for agricultural products that ensures continued food supply among the major island groups in the country. This inadequacy of cold storage warehouse (CSW) facilities across the country and more specifically in Mindanao exacerbates the food losses which are reportedly reaching 30-50% for fruits and vegetables, as experienced by farmers. This is worsened by poor handling, and lack of proper transport facilities and support infrastructure that would allow post-processing in order to lengthen shelf-life and add value to the fresh produce, ensuring adequate food supply.

G. Vulnerable regions and areas

29. Mindanao, being the first and last frontier for agricultural resources in the Philippines and also the largest fruit and vegetable basket in the country, is the most vulnerable area to climate change. Specific project sites are primarily chosen based on their climate risk and vulnerability, which will be validated by the local-level climate risk and vulnerability assessment during the development of the full project proposal. In addition, the following non-climate change indicators are also considered: (a) fruit and vegetable farms cultivated by small-scale farm holders (< 5 hectares), with farmers who are beneficiaries of the agrarian reform program and are inadequately supported by the government, or local communities of small-holder farmers organized into cooperatives or associations, and indigenous peoples in their ancestral domains; (b) fruit and vegetable farms located in far-flung and remote areas where there is limited or no mechanized farm

[19] Asian Development Bank, 2022. *Technical Assistance Consultant's Report on Agricultural Value Chain Development in Selected Asian Countries: Analysis of fruit and vegetable value chains in the Philippines*.
[20] For easy reference in this concept proposal, the currency exchange rate of US dollar (US$) to Phil Peso (PhP) is US$ 1= PhP 55.
[21] Philippine Statistics Authority, 2024. *The value of production in agriculture and fisheries inches up by 0.05% in the first quarter of 2024*. Retrieved on 28 Dec 2024 from https://psa.gov.ph/content/value-production-agriculture-and-fisheries-inches-005-percent-first-quarter-2024-constant.
[22] https://www.searca.org/press/aging-farmers-could-add-food-insecurity, published 20 Feb 2023, The Manila Times.
[23] MinDA, 2024. Collated report based on data from: www.countrystat.psa.gov.ph
[24] *Ibid.*

implements and tools, no access to post-harvest and processing facilities, mostly having logistical and transport challenges in the delivery of their products, and where farmers reported large food losses, reduction in productivity, and are experiencing the impacts of climate-induced risks and extreme weather events such as flooding, drought, unpredictable weather, extremely high or low temperatures, poor irrigation systems or having inadequate supply or no reliable access to water sources; in order words, sites with highly vulnerable people and communities. Finally social aspects will also be considered during the project selection, to make sure of inclusiveness of vulnerable communities, women and contribution to poverty reduction.

30. More specifically, these geographically vulnerable areas include **Region 10 (Northern Mindanao), Region 11 (Davao), and Region 12 (SOCCSKSARGEN)**. Figure 8 shows the map of Mindanao with Region 10-Northern Mindanao highlighted in brown, Region 11-Davao highlighted in red-maroon, and Region 12-SOCCSKSARGEN in blue (down south in the map, Figure 8).

Figure 78. Map of Mindanao showing the 3 regions as potential sites.

31. During stakeholder consultations, the following sites were visited, and further validation will be done during full proposal development: **(a) Municipalities of Talakag and Lantapan in the Province of Bukidnon, Region 10**, where collectively the largest farms of vegetables are grown, transported and distributed to the major cities across the country. Cultivated farms are estimated to reach over 60,000 hectares collectively, most of which are about 800-1000 meters above sea level, thus, are vulnerable to climate-induced risks and extreme weather events; **(b) Paquibato and Calinan districts of Davao City and Compostela Valley of Davao de Oro in Region 11**, where farmlands are producing vegetables and fruits, which are transported and distributed across Mindanao, mostly for local consumption due to its short shelf life, have no access to support infrastructure, experiencing impacts of climate change as these are located at high-elevations; (c) selected fruit farms in the **Municipality of Makilala and City of Kidapawan of Region 12**.

32. In these sites, the farmer groups have a ***selection and mix of fruits and vegetables*** grown in their small farms, having high nutritional and economic value, as follows: (1) tropical, seasonal, endemic fruits such as durian, cacao, banana, mangoes, pomelo, mangosteen, lanzones, rambutan, avocado; and (2) tropical vegetables and cash-crops used in the production of a basket of "*Chop suey*"[25] and "*Pinakbet*"[26] ingredients such as carrots, violet cabbage, Chinese cabbage, cauliflower, broccoli, potato, tomato, eggplant (aubergine), ampalaya (bitter gourd), lettuce, okra, bell pepper (capsicum), string beans, corn, spring onions, chili, and others. The selection also considers land and soil suitability, availability of raw materials (inputs/seedlings/sufficient water supply), market demand, transport and logistical requirements especially that they often do not have access to cold-storage or any post-harvest processing facilities.

H. Climate change adaptation strategies and resilience approaches

33. The project is envisaged to show that farmers and local communities can adapt and strengthen their resilience to these climate-induced threats **based on regenerative and integrated climate-resilient agricultural practices.** These practices involve the use of climate-resilient or drought-resilient crop varieties and employ alternative monocropping and intercropping for a mixture of fruits and vegetables to withstand extreme climatic events such as extreme precipitation, flooding, extreme heat, and changing rainfall patterns. Farmers can transition to sustainable agricultural practices such as organic farming, crop diversification which is facilitated by using mixtures or varieties of fruits and vegetables and use nature-

[25] *Chop suey* is a stir-fried vegetable dish that is often cooked with meat and seafood; it is nutritious and popular among Filipinos.
[26] *Pinakbet* is an indigenous and nutritious Filipino vegetable dish flavored with fish paste, occasionally mixed with meat, prepared commonly by households as staple food.

based inputs such as compost/fertilizers, to improve soil management, which can help reduce the vulnerability of agricultural systems to climate change.

34. The integration of climate resilient practices looks at the application of Nature based solutions (NbS) as a means to enhance ecosystem resilience and improve agriculture productivity in the long term. For example, NbS can improve resilience by creating systems such as green roofs, rain gardens, or constructed wetlands which can minimize damaging runoff by absorbing stormwater, reducing flood risks and safeguarding freshwater ecosystems, which are caused by external pressures such as climate change and extreme weather events. Also, the use of compost and other organic matter, improve soil health and directly improve productivity and resilience of rural communities when severe weather events affect the productivity level.

35. In addition, **improved water management** such as water and rainwater harvesting techniques to capture and store water and rainfall for irrigation purposes during dry periods can help supplement irrigation water supply, reduce dependence on groundwater and improve water availability for crops especially during droughts. Other techniques include constructed wetlands which can capture rainfall and flood water and drip irrigation systems which improve efficiency in water use, reduce water wastage, and provide precise control over water supply for crops for optimal growth and yield. Mulching can also be employed which involves covering the soil surface with organic materials such as coconut husks, straw, leaves or plastic films, to conserve soil moisture, suppress weed growth, and regulate soil temperature.

36. Regenerative climate resilient practices are centered in the principle of circularity. In agriculture, circular economic approaches lead to a sustainable farming system that aims to reduce waste, extend the life of products, and enhance environmental protection. This would result in improving food security as well. Examples of applying circular economy in agriculture include the reduction in food waste. In the fruit and vegetable sector, the waste can go from 30-50%, which is too high for the farmers to bear. How can food waste be reduced in this sector? The availability and accessibility of support infrastructure in the farms such as post-harvest and processing facilities would be important in reducing food waste. In post-harvest, drying fruits and vegetables to reduce weight, ease transport, and prolong shelf-life would facilitate minimization of waste. Alternatively, chilling, freezing, or dehydrating fruits and vegetables would also dramatically lengthen shelf-life, reduce waste, and add value to these products. For many fruits and vegetables, further processing of excess or low-quality produce by drying and milling (e.g., chili powder, garlic powder), dehydrating and freeze-drying, cooking, fermenting, and pickling, would eliminate food waste, prolong shelf-life, and add value to these products as well. Further, composting kitchen or food waste and agricultural waste and using them as fertilizer or soil-enhancer can improve soil health; thus, reducing farm inputs at the same time. This approach would keep products in use over and over again. It can regenerate natural systems and thus promote biodiversity, soil health, and efficient use of water. It can also facilitate closing of nutrient loops, which will ultimately reduce the negative impacts to the environment by eliminating discharges. In many ways, nature-based solutions (NbS) and circular economy (CE) approaches complement each other, which can promote sustainable agricultural practices and ensure food security and better public health.

37. Regenerative climate resilient practices are supported by the use of modern tools and technologies for local climate information services. With the support of academic and research institutions as partners in the project, the farmers can benefit from the use of modern tools and technologies in implementing and practicing regenerative climate resilient approaches in their farms. Examples of technology solutions include the use of remote sensing and geographic information systems (GIS) which enable accurate mapping, monitoring and analysis, to provide valuable data and information on land cover, vegetation health, and ecosystem dynamics. Advanced data analytics and modelling can be conducted by academic and research partners, which include machine learning and statistical modeling, which are helpful to analyze large datasets in identifying patterns, trends, and relationships in ecosystem dynamics, climate change impacts and stakeholder behavior. In addition, the Department of Agriculture (DA)-Adaptation and Mitigation Initiative in Agriculture (AMIA) has initiated some web-based information on weather and climate forecasts to inform on upcoming (extreme) weather events as well as guides for farmers including climate risk vulnerability assessments (CRVA) and information on natural suitability of economically important crops. Farmers need sufficient trainings to learn about these modern tools and technologies to improve their farming practices and to facilitate access to localized information and weather forecasting which is crucial for farmers to make informed decisions on planting schedules and crop management.

38. Also, for example, land and soil suitability studies that include soil analysis can be made faster by the use of technologies (e.g., remote sensing, GIS). This can fast-track decision-making by the farmers in transitioning to sustainable organic farming, which is a good agricultural practice to promote adaptive capacity to climate-induced impacts, as this can improve water retention in soil during extreme temperatures and drought, reduce risks of pest infestations and plant disease outbreaks during rapid changes in rainfall and temperature patterns; consequently, reducing farm inputs and labor costs. As demonstrated in the recent study[27] of land suitability evaluation of cocoa production in Davao City, Philippines, results showed that there are various land and soil characteristics which need to be considered in identifying suitable sites for cacao plantation. Farmers in these areas can grow cacao favorably and based on nutrient analysis, the soil can be enriched with the right amounts of nutrients to render them highly suitable for cacao growth, thus, leading to maximum yields and minimal farm inputs. Further evaluation of soil quality attributes results in the classification of land and soil into the following: highly suitable, moderately suitable, marginally suitable, currently unsuitable but potentially suitable, and permanently unsuitable. These land and soil characterizations would be the basis for choosing the best sites for cacao plantation. With this science-based information, the farmers can opt to use directly the areas highly suitable for cacao growth and can also augment the nutrients of the soil in marginally suitable areas to render suitable for the crop. In this way, an efficient strategy is in place to guide farmers on how to expand cacao plantation and where this can be effectively intensified. Such information will guide the farmer communities on farm planning and scheduling, considering the climate-induced risks and vulnerabilities in the local farm sites. In addition, the use of renewable energy is also promoted in sustainable farming such as producing compost, organic materials for mulching, and bio-based fertilizers and pesticides. During extreme weather events and disasters, electric power lines take time for its repair, especially in remote areas, thus, independent power sources and supply are indispensable in order to not disrupt nor delay agricultural activities and the farm-food supply chain that comes with it. Furthermore, mobile and web applications can facilitate knowledge and information sharing, community engagement, and participation of stakeholders in learning sessions. This can also boost farmers' direct access to better markets and use of digital e-commerce to efficiently promote their products.

39. On the other hand, the use of modern tools and technologies can attract young people (youth) to work in the agricultural sector, especially helping the elderly farmers in employing more efficient farming techniques to boost productivity and increase sales. This would potentially reduce the average age of farm workers, which is pegged at 55-59 years old as of now, thus ensuring the succession plan for improving food security. In addition, women can actually get involved more actively in farming activities with the use of modern tools and techniques, as they are more adept to multi-tasking and work requiring tremendous dexterity.

40. In partnership with the academe and private sector during project implementation, these tools and its services can be offered and made accessible to the farmers and farmer communities under mutually agreed arrangements, and appropriate business-revenue models may be instituted in order to sustain its use and operations.

I. Preliminary Gender Assessment: Gender Equality, Disability, and Social Inclusion (GEDSI)

41. The Philippines has instituted the Gender and Development (GAD) policy since 1995[28] that aims to achieve gender equality, women empowerment, and social inclusion across the country. GAD is based on the concept that women and men should have equal rights and opportunities to fully participate in society. Lately, people with disability (PWDs) are included in the mainstreaming of this policy. The country has made important strides towards gender equality, marked by an increasing presence of women in prominent roles across the public and private sectors of society, as well as in households, families, and society-based organizations and associations. Policies have been established to support GAD in the country, which include the Women in Development and National Building Act (Republic Act No. 7192 of 1992) which paved the way for the GAD policy in 1995-2025, the Magna Carta of Women in 2009, and the Philippine Development Plan for Women 2019-2025 which includes the Gender Equality and Women's Empowerment (GEWE) program and the Philippine Plan for Gender-Responsive Development (PPGD).

42. The Philippines remains as one of the most gender-equal countries in Asia and the world. It ranks first

[27] Sales MCA, Sales SC, Badayos RB, Sanchez PB, 2024. *Land suitability evaluation of cocoa* (*Theobromae cacao L.*) *production areas in Davao City, Philippines*. Mindanao Journal of Science and Technology 22 (1), 1-19.
[28] Philippine Plan for Gender and Development 1995-2025.

among countries in Southeast Asia and 3rd among countries in Eastern Asia and the Pacific, next to New Zealand (1st regional, 4th global) and Australia (2nd regional, 24th global). Despite its gender status, the country needs to drive progress in gender equality and female leadership by strengthening anti-discrimination laws that protect women's rights in the workplace, promote women networks to provide support, mentorship, and career opportunities, leadership development, and promote education and awareness about the importance of gender equality in leadership. [29]

43. In the agricultural sector of the Philippines, women face gender inequality where 75.4% of agricultural workers were male while 24.6% were female (2022 data on gender ratio of women in agricultural employment of the country), despite the existence of Republic Act No. 6725 which prohibits discrimination with respect to terms and conditions of employment solely on the basis of sex. Furthermore, this disparity also includes lower pay for women workers as they earn less than men and their work is often considered an extension of household chores, limited access to land and own fewer tools, and fewer opportunities for decision-making, as they are often left out in this process.

44. Thus, an urgent call for inclusive participation of women particularly in the agriculture sector of the Philippines needs to be amplified. This can be done by increasing the adaptive capacity of farming communities to effectively address the impacts of climate change and purposively include women in the process.[30] Women can play significant roles provided that avenues are put in place for them to contribute to this goal, such as the provision of women-friendly equipment, machineries and facilities, conduct of capacity building and gender-awareness campaigns, and development of localized Gender Action Plans.

45. A case study[31] in the Bicol Region in the Philippines reported that a gender-focused design of a project promoting the adaptation and mitigation initiative in agriculture successfully demonstrated how gender can be integrated in the project which include farmers in villages of the region. Results showed that women were performing multiple roles as compared to men who were focused generally on managing and doing farm-related activities; in addition, women were not hindered to participate on managing their farms despite being normally involved in managing the households. In fact, women still take on very traditional gender roles but can also participate equally in livelihood activities and can decide together with men on key issues and tasks such as farm and household finances, management of the association's enterprises such as the Agri-store and actively participate in trainings and capacity building activities that will help them become better in adapting to climate change impacts.

46. In another study,[32] smallholder farmers in Mindanao have manifested gendered vulnerabilities to climate change especially in conflict-prone areas. The work revealed that both climate change and conflict significantly increase smallholder farmer vulnerability, resulting in loss of livelihoods, financial assets, agricultural yield, and the worsening of debt problems. Interestingly, men and women are affected in different ways, resulting in changing farming patterns and coping strategies. Women are more disadvantaged and tend to farm in smaller plots, work shorter hours or limit farming to cash crops. In conflict-prone areas, climate change exacerbates women's plight as they are subjected to forced migration, increased discrimination, loss of customary rights to land, resource poverty and food insecurity. Recently, another study[33] supported this observation and further explained that women, who are often responsible for critical tasks such as water collection, fuel (firewood) gathering, and food production, experienced heightened burdens due to limited access to land, financial resources, and decision-making platforms. On the other hand, men are disproportionately affected by job losses in climate-sensitive sectors such as agriculture, leading to economic insecurity and shifts in traditional family roles.

47. Thus, this project proposes to include the design of localized gender action plans to mainstream gender equality, disability, and social inclusion (GEDSI) across all the project sites to enhance adaptive capacities to climate change and ensure increased participation of women in the various project activities. Furthermore, the gender action plan must also include programs that entice the youth to work in the agricultural sector by designing activities which will

[29] Dayoan SG, 2023. *Advancing gender equality in the Philippines*; https://kpmg.com/ph/en/home/insights/2023/11/advancing-gender-equality-in-the-philippines.html. Retrieved on 26 Jan 2025.
[30] Austria JD, Barril JAU, Zunkiga JBM, 2024. *Building climate-resilient agriculture communities in the Philippines through a gender perspective*. FFTC Agricultural Policy Platform. https://ap.ffc.org.tw/. Retrieved on 15 Jan 2025.
[31] *Ibid*.
[32] Chandra A, McNamara KE, Dargusch P, Caspe AM, Dalabajan D, 2017. *Gendered vulnerabilities of smallholder farmers to climate change in conflict-prone areas: A case study from Mindanao, Philippines*. Journal of Rural Studies 50:45-49.
[33] Adhikari A, Ghimire S, 2025. *Gendered dimensions of climate change impacts: Challenges and adaptive strategies*. Turkish Journal of Agriculture-Food Science and Technology 13(5): 1354-1367.

attract and interest them such as in the use of modern tools and technologies (remote sensing and GIS tools, use of drones and wireless sensor networks, digital finance and e-commerce, mobile and web applications, etc.) in implementing nature-based solutions, circular economy and green economy approaches.

48. The project design will include the promotion of tailor-made and gender-sensitive adaptive capacities for women, men, youth, elderly, IPs, and others, to address the critical need for inclusive and equitable strategies that foster resilience and sustainability in vulnerable communities while accentuating the intersections of gender and climate change. Strategies may include needs-based capacity-building initiatives (such as agri-entrepreneurship skills and post-harvest processing techniques of fruits and vegetables for women and IPs, computer-aided farm data collection and analytics for youth, soil enhancement techniques for IPs), gender-responsive financing mechanisms for different agri-entrepreneurial needs of women, youth, IPs), inclusive policies (piloted locally as needed), and participatory governance (such as monitoring and assessment of the performance of their own respective facilities). Taking into consideration the latest updates on women and men in the Philippines,[34] Table 1~~Table 1~~ below shows some relevant data for the agricultural sector.

Formatted: Font: Aptos, 10.5 pt

Table 1. Factsheet on Women and Men in the Philippines 2025, PSA

Data description	Female	Male
Population projections	57.2 M	58.2 M
Population (2024 latest; gender aggregated) by Region in Mindanao	27,531,140	
Region 9 (Zamboanga Peninsula)	3,943,837	
Region 10 (Northern Mindanao)	5,178,326	
Region 11 (Davao Region)	5,389,422	
Region 12 (SOCCSKSARGEN)	4,462,776	
Region 13 (Caraga)	2,865,196	
BARMM	5,691,583	
Sex ratio	100	102
Poverty incidence among population by Sex (%); among children (%)	15.6; 23.4	15.8; 23.4
Functional literacy rate (%) for 10-64 years old	92.9	90.2
Basic literacy rate (%) for 10 years old and over	97.1	95.9
Distribution of Population 6 yrs old and over by highest educational attainment Elementary School (ES) completion; ES under-graduate Junior High School (JHS) completed; JHS under-graduate Senior High Scholl (SHS) completion; SHS under-graduate College completion; College under-graduate	 10.1; 7.3 27.5; 12.0 3.8; 3.2 19.3; 12.4	 10.8; 11.3 27.6; 14.1 4.0; 3.1 13.5; 10.9
Labor force participation rate (%)	53.5	75.8
Employment rate (%)	94.2	94.9
Number and percentage of employed persons in Agriculture, forestry, and fishery workers (3rd major Occupation group*), thousand and %	1,070 and 19.2%	4,499 and 80.8%
Number of holders of Emancipation Patent (EP**) and percentage	96,626 and 18.6%	423,259 and 81.4%
Number of Holders of Certificate of Land Ownership Award (CLOA) and percentage	642,855 and 31.1%	1,424,783 and 68.9%
Notes: *Top 3 Occupation Group includes (1) Service and sales workers, (2) elementary occupations, and (3) skilled agricultural, forestry, and fishery workers; **An Emancipation Patent (EP), in the context of Philippine agrarian reform, is a document issued by the Department of Agrarian Reform (DAR) that serves as a title of ownership for land awarded to a tenant-farmer under Presidential Decree No. 27.		

J. Preliminary Assessment of Indigenous Peoples (IP) and IP Communities

49. Due to its long and unique socio-cultural history, the Philippines is home to many indigenous peoples and cultural communities (IPCCs) that are spread across the country, these are made up of diverse ethnic groups including the Igorots, Lumads, Mangyan, Aeta, and Dumagat, among many others, with an estimated 17 million in population belonging to 110 ethno-linguistic groups (based on 2020 Population Census). They are mainly concentrated in Northern Luzon (Cordillera Administrative Region at 33%) and Mindanao (61%), with some small groups in the Visayas region. Indigenous peoples and cultural communities (IPCCs) have preserved many of their traditional cultures and livelihood practices, however, they are often the poorest and most disadvantaged people as they face historical discrimination and the lack of social services, and economic and political opportunities. The latter is exacerbated by impacts of climate-change and extreme weather events in their own localities commonly known as ancestral domains.

[34] Philippine Statistics Authority (PSA), 2025. *Factsheet on Women and Men in the Philippines*. Updated data as of March, 2025.

50. In the agricultural sector, the IPCCs have maintained their traditional practices and farming techniques that are based on respect for the environment, including terracing, crop rotation, mixed cropping, soil fertility management and some unique integrated pests and disease management practices such as storing unthreatened seeds in smoky areas to repel insects and pests. Many of these are actually nature-based solutions which have beneficial impacts to the farmers and the surrounding communities as these can help ensure food security and environmental protection. However, industrial agriculture and development projects threaten their lands (ancestral domains) and livelihoods, with the introduction and use of synthetic chemicals as inputs (fertilizers and pesticides) and the practice of long-term monocropping to maximize harvests for exports. This is the case in Mindanao where large corporate plantations of banana and pineapple, for example, are found, and currently having big issues on severe infestation of pests and diseases and rampant contamination of water basins with pollutants from the runoffs of these industrial farms.

51. Despite these farming challenges, there are windows of opportunities in the agricultural sector, particularly in the Mindanao region. Recognizing indigenous land rights can pave the way towards sustainable land management that mitigates food insecurity. Incorporating regenerative and integrated solutions, which are also recognized as traditional indigenous knowledge, coupled with science-based and climate-smart agriculture, can help advance the mainstreaming of adaptation measures such as the transition to organic farming using organic inputs in farming activities, natural resource conservation practices anchored on traditional indigenous knowledge, crop diversification using climate-resilient varieties, ecological pest management, improved water management, improved post-harvest management, and technological innovations, which all lead to increased socio-economic productivity and climate resilience. In addition, it is observed that the farmers' recognition on the use of modern tools and technologies that promote regenerative climate resilient approaches to sustained agricultural practices have also intensified their interests to move forward with these climate-change adaptation techniques.

Project Objectives

52. The project's goal is to enhance the adaptive capacity and resilience of local farmer communities producing fruits and vegetables in Mindanao Island, to vulnerabilities caused by climate change, extreme weather events and disasters, leading to improved food security and environmental protection at the local level. Specifically, the project aims to:
    (a) establish appropriate interventions and innovative solutions by improving the local-level agriculture-based infrastructure in the fruit and vegetable sector to enhance farm yield and productivity of vulnerable farmers and farm communities.
    (b) demonstrate these adaptive interventions at the local level through technology transfer, capacity building, collaboration and partnerships of farmer communities with local government units, academia, and private sector; and
    (c) strengthen the enabling environment for finance mobilization, investments, and market access for the fruit and vegetable sector at the local level.

    The project's goal and objectives are aligned with the Adaptation Fund's Strategic Objectives, which focus on reducing vulnerability and enhancing adaptive capacity to climate change in developing countries. Specifically, the Fund aims to support vulnerable countries such as the Philippines, in implementing concrete adaptation projects and programs, promoting locally-led action and advancing gender equality.

Project Components and Financing

Table 2. Project components, expected outcomes and outputs, and is estimated financing requirements

Project Components	Expected Outcomes	Expected Concrete Outputs	Amount (US$)
Component 1. Establishment of integrated community-based shared service facilities to enhance adaptive capacity and climate-change	**Outcome 1.1.** The farmer communities' adoption and demonstration of innovative solutions and sustainable agricultural practices are supported, enhanced, and replicated at the local-level, leading to improved productivity	**Output 1.1.1.** Sustainable agricultural practices and appropriate interventions are promoted, enhanced, and replicated at the farm/household and community levels.	4,300,000

Project Components	Expected Outcomes	Expected Concrete Outputs	Amount (US$)
resilience of farmers at the local level.	and resilience to climate-induced impacts.		
Component 2. Strengthening the farmers' access to mobilized finance mechanisms in support of their transition to sustainable agriculture practices.	**Outcome 2.1.** The farmers' access to finance to sustain adaptive capacity and climate-resilience is supported and strengthened.	**Output 2.1.1.** Increased access and utilization of mobilized finance at the farm/household and community levels	1,000,000~~3,000,000~~
	Outcome 2.2. Farmers' self-awareness and ownership of acquired adaptive capacity and climate-change resilience are enhanced.	**Output 2.2.1.** Increased participation of farmers in capacity building, technology transfer, and collaborative activities at the farm/household and community levels	2,000,000
Component 3. Institutional and community strengthening through policy advocacy and knowledge management.	**Outcome 3.1.** Policies and measures are improved and promoted.	**Output 3.1.1.** Local and tailor-made adaptation plans, and policy measures are developed and promoted.	~~1,450,000~~350,000
		Output 3.1.2. Policies and measures that support good agricultural practices and promote climate resilience are introduced and promoted.	200,000
	Outcome 3.2. The knowledge management and sharing platform is developed and accessible.	**Output 3.2.1.** The knowledge management platform is operational and readily accessible and useful at the farm/household and community levels.	400,000
		Output 3.2.2. Knowledge generated are documented and disseminated.	200,000
		Output 3.2.3. Local communities-of-good-agricultural-practice are supported and strengthened.	300,000
3. Project Execution Cost			466,590
4. Total Project Cost			9,216,590
5. Project Cycle Management Fee charged by the Implementing Entity (8.5%)			,783,410
Amount of Financing Requested (US$)			**10,000,000**

Formatted: Right, Position: Horizontal: 0.97", Relative to: Margin, Vertical: 0.15", Relative to: Paragraph, Horizontal: 0.13", Wrap Around

Formatted: Right, Position: Horizontal: 0.97", Relative to: Margin, Vertical: 0.15", Relative to: Paragraph, Horizontal: 0.13", Wrap Around

Formatted: Right, Position: Horizontal: 0.97", Relative to: Margin, Vertical: 0.15", Relative to: Paragraph, Horizontal: 0.13", Wrap Around

Formatted: Right, Position: Horizontal: 0.97", Relative to: Margin, Vertical: 0.15", Relative to: Paragraph, Horizontal: 0.13", Wrap Around

Projected Calendar

Table 3. Projected milestones for a project duration of 4 years (48 months)

Milestones	Expected Dates
Start of Project/Programme Implementation	Q4, 2026
Mid-term Review (if planned)	Q1, 2029
Project/Programme Closing	Q4, 2030
Terminal Evaluation	Q4, 2030

PART II: PROJECT JUSTIFICATION

A. Project Components

53. The project's Theory of Change (TOC) is shown in Figure 9, which describes the goal and objectives along with its intended outcomes and outputs, including the impact and co-benefits of the project as pegged with the identified barriers and challenges. The project structure is developed and organized into three components, according to the apparent and urgent agricultural interventions required considering the preliminary stakeholder consultations, the results of which are summarized and shown in Annex 2. The first two components involve technical elements and supporting agriculture-based infrastructure and technology and finance mobilization for building resilience, and the third one focuses on institutional and community strengthening through policy advocacy and knowledge management; all of which are designed to maximize synergy, guide efficient implementation, and promote adaptive project management. The project is designed to improve climate-change resilience and adaptive capacity of farmers in local communities of Mindanao by first addressing the fundamental challenges of the local

agriculture industry, particularly in the fruit and vegetable sector.

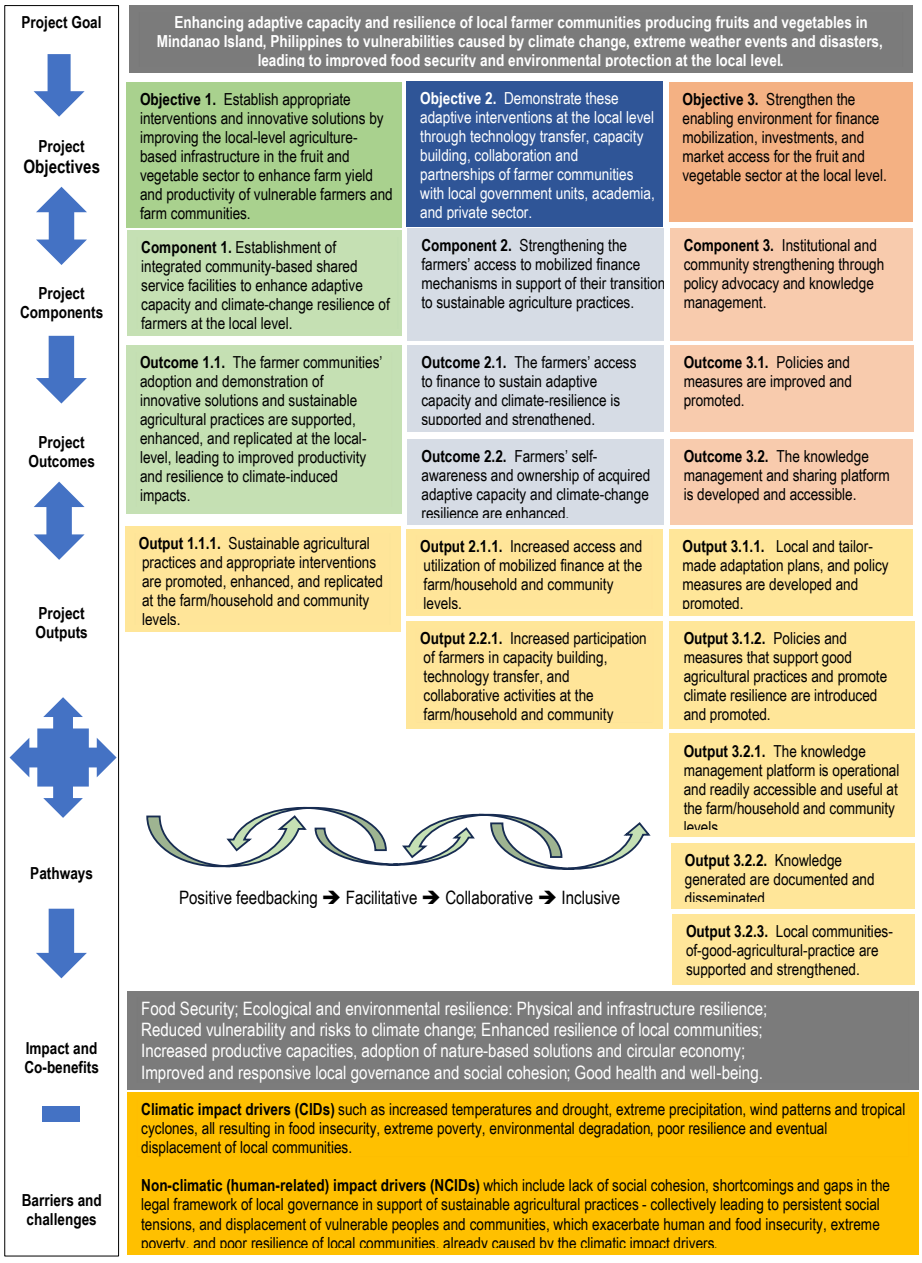

Figure 9. Theory of Change (TOC) of the project

54. Component 1 of the project involves the establishment of integrated community-based shared service facilities (ICBSSFs) which enables the demonstration of a portfolio of pilot cases showcasing the adoption of efficient, appropriate, and sustainable farming techniques and practices, based on a regenerative and climate resilience approaches that builds the capacity of farmers in coping with the impact of climate change. The project will introduce innovative solutions that integrate resilient infrastructure, tools and technology innovations, that maximize agricultural yields and reduce farm inputs and food losses, leading to robust livelihoods for small-holder farmers in the local and IP communities, leading to their improved adaptive capacity and climate resilience. This also results in the generation of employment opportunities especially for women and youth, and the establishment of healthier environment; thereby reducing poverty incidence and promoting food security.

55. The integrated community-based shared service facilities (ICBSSFs) serve to provide an improved agriculture-based infrastructure such as demonstration and learning centers at the local-level to enhance the adaptive capacity and climate-change resilience of farmers and farm workers, which include:
    (1) equipment for farm input processing such as digesters/composting units needed to standardize the nutrient blends to constitute the "suitable compost" for organic farming of specific fruits and vegetables, and setups to produce "liquid smoke" used as organic bio-pesticides (which is interestingly based on indigenous knowledge to effectively manage pests and diseases in farms).
    (2) community-managed nurseries and seedbanks designed to withstand climate risks and vulnerabilities, for commonly used seedlings and crops, which are developed for climate-resiliency (e.g., drought-resistant, heat-resistant, pest-resistant varieties).
    (3) tools and machineries for farm preparation, maintenance, and crop production such as women-friendly tractors, farm implements, drones and wireless sensor networks.
    (4) water and rainwater harvesting systems, water basins/tanks, drip irrigation systems, and constructed wetlands.
    (5) post-harvest facilities such as solar-powered dryers, millers, cold-storage units, and refrigerated transport.
    (6) solar-powered processing facilities to produce high-value fruit and vegetable products (e.g., chili and garlic powders, mixed dried fruits, frozen or chilled or pickled fruits and vegetables, others) such as cookers, dehydrators, chillers, freeze-dryers, blender-mixers, pasteurizers, choppers, slicers, grinders, packaging units, and the like (akin to a standardized kitchen where food and vegetable processing can be done); and
    (7) knowledge sharing platforms equipped with computers and machines for e-commerce, digital finance, online marketing, capacity building activities, learning sessions, hands-on workshops, and online/hybrid meeting spaces.

56. Depending on the defined needs and requirements for support of the small-holder farmers and their cooperatives or associations in the selected project sites, which can be ascertained during the full development of the project proposal, the integrated community-based shared service facilities (ICBSSFs) serving as demonstration and learning centers can be customized to suit the needs of the local farmer communities. Not all of the parts or units of the support infrastructure may be required in one project site. However, to illustrate the vast possibilities of an integrated shared service facility that caters to the full demonstration of the application of regenerative and climate resilient approaches in fruit and vegetable value chains, at least one (1) project site will have the complete set of these parts as listed above. So far, there at three (3) potential sites for these ICBSSFs as demonstration centers that may be considered carefully during the full proposal preparation phase. The importance of "integration" of these units cannot be overlooked as the manufacture of high-value commercial products from crops such as fruits and vegetables need to be showcased to dramatically demonstrate its potential benefits to the farmers and other important stakeholders like the local government units, private sector, and the rest of the communities. In addition, the ICBSSF must be run by a community of farmers and farm workers, be it a cooperative or an association, with the guidance and assistance of technical experts, to catalyze replication and scaleup through the hands-on learnings (know-how) and the knowledge generated and disseminated, which can reap the maximum benefits. A well-developed and appropriate business revenue model will be implemented to sustain the operation and upkeep of the facilities.

57. The envisioned outcome of the project's component 1 is the development and improvement of the farmers' adaptive capacity and climate-change resilience through the demonstration of sustainable farming practices employing NbS and circular economy approaches that are regenerative and the use of tools and technological innovations, which is supported with the access to the integrated community-based shared service facilities (ICBSSFs). Outputs of the project's component 1 would be the promotion and replication at the farm/household and community levels of the sustainable agricultural practices and approaches and the increased access and

participation of farmers and farmer workers, including women, youth, and indigenous peoples, in running these support infrastructures. This is to enable and operationalize their capacity to demonstrate good agricultural practices across the fruit and vegetable value chains. In the implementation of this project component, the farmers-cooperatives will be accompanied and guided by technical experts in operationalizing these support infrastructures as they take the lead in conducting capacity building activities and learning sessions.

58. The project's second component revolves around the farmers' access to mobilized finance, investment, and market to strengthen the farmers' adaptive capacity and climate-change resilience. Through facilitative financing mechanisms tailored to the needs of the local-level farmer communities, this project component can support the farmer's capacity to demonstrate the practice of sustainable agriculture at the local-level. The following are examples which may involve: approaches on crop diversification and better farm planning and scheduling assisted by real-time access to local climate information services (provided in ICBSSFs of component 1) to increase farm yields and productivity, reducing farm inputs and food losses, adopting sustainable and good agricultural practices (GAP) such as organic farming, and improving quality of farm products, to have better access to markets using e-commerce and digital finance across the fruit and vegetable value chains. Through better access to financial support mechanisms, the farmers can enhance adaptive capacity by acquiring knowledge, skills, and know-how in the full demonstration of the use of modern tools and technologies that come together with the rest of the units of the ICBSSFs. The availability of technical experts and business and community development officers would be instrumental in capacity building, training, and technology transfer activities.

59. The expected outcomes of the second project component include better access to finance (investments) and strengthen adaptive capacity and climate resilience. The project also targets an increased number of small-holder farmers-cooperatives or associations which are capacitated to transition to sustainable agricultural practices to combat climate-induced impacts. These can be measured by the farmers' increased productivity, reduced farm inputs and food losses, and expanded access to the market in the fruit and vegetable sector.

60. The third project component deals with institutional and community strengthening through policy advocacy and provision of an easy-to-access-and-use knowledge management platform, the creation of an enabling environment through policy advocacy towards sustainable agricultural practices for the fruits and vegetable sectors. This component will facilitate the promotion of awareness and ownership of acquired adaptive capacity and climate-change resilience by continuously demonstrating good practices in sustainable agriculture. These can be measured through the number of local and tailor-made adaptation plans and policy measures leading to sustained farming practices, the established and operationalized knowledge management platforms that are readily accessible and useful to beneficiaries and stakeholders, the practical knowledge generated which are documented and disseminated, and the increased number of farmer-communities-of-good-agricultural-practice being developed, promoted, and supported.

B. Economic, Social, and Environmental Benefits

61. The proposed project is essentially aimed at enhancing the economic, social, and environmental benefits of the small-holder farmers in cooperatives and associations located in the most vulnerable and marginalized communities of Mindanao's fruit and vegetable farms. These are among the poorest groups in terms of economic and social resources, with their environment battered with the impacts of climate-change and extreme weather events and exacerbated by malpractices in the local agricultural farming industry. The three components of the proposed project are meticulously designed and planned to address these three-dimensional sustainability challenges and hopefully facilitate the full economic, social and environmental benefits for the farms/households at the local community level. Table 4 below shows the estimated cost-effectiveness of the project where the estimated number of target beneficiaries are indicated per project component, which is subject to finalization during full project proposal preparation under the PFG. In total, the project envisions to target about 30,000 beneficiaries, with men/women ratio of about 55:45, and youth involvement up to at least 30%, which include smallholder farmers, belonging to poor smallholder farmer-households, and vulnerable and marginalized smallholder farmer-communities across the identified project sites in Mindanao Island.

62. In terms of **economic benefits,** with the carefully designed project interventions, the production costs of fruits and vegetables could decrease dramatically by using cheaper farm inputs (e.g., bio-based pesticides, organic fertilizer and soil conditioner from composting activities) and more efficient farm implements. In addition, the efficient farm planning and scheduling tool would have been useful considering the availability of real-time information about local weather conditions and patterns of market and stakeholders' behavior that triggers higher/lower buying prices

of fruits and vegetables in the market. More importantly, the adoption of regenerative and climate resilience approaches that are rooted in the principle of circular economy, would dramatically reduce food losses and render these farm products still valuable despite the fluctuating market prices by harvesting and subjecting them to appropriate processes that would prolong shelf-life and or convert them into high-value alternative product formulations such as *sauerkraut* or *kimchi* (fermented cabbage) and or pickled cabbage, pickled or cooked or dehydrated carrots and the like. All these interventions can be demonstrated with the farmers' access to the integrated community-based shared service facilities (ICBSSFs) that the project will provide. At the end of the day, the farmers would be more confident by acquiring the know-how on how to solve these practical farm-related problems, how to innovate on alternative product streams, even leveraging the premium pricing for their organically grown crops, and how to consistently achieve increased farm productivity and generate alternative livelihoods. Overall, about 15,000 people (60% men, 40% women, 30% youth) are expected to benefit under Component 1, with household incomes projected to increase by 5–7 times above current levels, lifting them above the poverty threshold. Table 4 shows the estimated number of target beneficiaries for these interventions, which is subject to finalization during the full project proposal reparation stage under the PFG.

63. In terms of **social benefits**, the project's interventions would provide support infrastructure and capacity-building activities for farmers and farm workers that collectively result in the minimization of post-harvest losses, better quality of produce due to proper storage and handling, and better control over the fruit and vegetable value chains, allowing them to negotiate better prices and improve market access. The farmers' awareness and ownership of the adaptive capacities that promote sustainable agricultural practices would have boosted the community's morale and would have triggered even more participation in learning sessions and capacity building activities, thereby improving their climate resilience. Special attention will be given to ensuring that these benefits are equitably accessed by marginalized and vulnerable groups, including Indigenous Peoples, women and youth. Their participation will be supported through inclusive, culturally appropriate engagement and equal access to project activities, facilities and financial tools, fostering cohesive community involvement and promoting social inclusion throughout implementation. These interventions could stimulate greater productivity for the farmers, leading to better livelihoods in the rural areas as these create jobs, generate alternative product streams, support other related industries, and more importantly, contribute to the local economic growth and socio-cultural development. Facilitating the collaboration and partnership of farmer communities with the local government units, academia, and private sector would pave the way for strengthened social cohesion and mutual support. About 5,000 additional beneficiaries (55% men, 45% women, 30% youth) are expected to benefit under Component 2, particularly through access to mobilized finance mechanisms designed to support women's agri-entrepreneurial skills. Table 4 shows the estimated number of target beneficiaries for these interventions, which will be ascertained during the full project proposal preparation stage under the PFG.

64. The **environmental benefits** brought about by the project interventions are obviously significant as it promotes adaptive measures to address climate-induced impacts, which include sustainable agricultural practices, nature-based solutions (NbS) and circular economy (CE) approaches, coupled with the use of innovative tools and technologies, leading to better environmental protection and strengthened climate resilience. The use of synthetic chemicals such as fertilizers and pesticides would significantly decrease during the transition period and hopefully be eliminated with the full adoption of sustainable organic farming. Further, the dramatic reduction in food losses and the lengthening of the product shelf-life would contribute to better resource utilization. The use of modern tools, technologies and renewable energy would contribute significantly to climate change mitigation and improve climate-change resilience among the local communities with the shared access to real-time local climate information services and market situations. In the process, the negative impacts that are now plaguing the farming communities of these vulnerable sectors would be mitigated, in compliance with the ESSP and Gender Policy of the Adaptation Plan, the UNIDO ESSPP Operational Safeguards, and the laws and regulations of the Philippines. Under Component 3, a further 10,000 beneficiaries (55% men, 45% women, 30% youth) across 40–50 communities will be reached, with expected reductions of 30–40% in fertilizer use and 25–30% in pesticide use over at least 15,000 hectares of farmland. Table 4 shows the estimated number of target beneficiaries for these interventions, which will be ascertained during the full project proposal preparation stage under the PFG.

C. Cost-effectiveness of the Project

65. The cost-effectiveness of the proposed project can be attributed to the meticulous design of the project components based on the expressed needs of the stakeholders and target beneficiaries as regards to how their adaptive capacity and climate resilience will be strengthened. This can create robust synergy and facilitate delivery of the promised outcomes and outputs that should benefit the vulnerable and marginalized communities of farmers

at the local level. The following table (**Error! Reference source not found.**~~Table 4~~) shows the preliminary assessment of the cost-effectiveness of the project, where estimates on the target outcomes to be achieved are indicated and the number of beneficiaries need further verification when the project sites are finally selected during the preparation of the full project proposal.

D. Consistency with National and Sub-National Sustainable Development Strategies

66. This proposed project is aimed at enhancing the adaptive capacity and climate resilience of the farmer communities at the local level in agricultural sector in Mindanao, Philippines, particularly the fruit and vegetable sector, through interventions that facilitate the development of the adaptive capacities of the vulnerable and marginalized groups of small-holder farmers at the local level to tackle climate-induced risks, vulnerabilities, and impacts and to ensure food security. The proposed project is prepared and designed to align with the following sustainable development strategies of the Philippines.

Table 4. Preliminary assessment of the cost-effectiveness of the project

Project Components	Description	Cost (USD)	Estimated Beneficiaries for the project
Component 1. Establishment of integrated community-based shared service facilities to enhance adaptive capacity and climate-change resilience of farmers at the local level.			
Baseline Reference/ Business-as-Usual (BAU) scenario	Farmers have limited awareness, capacities, training and technical skills, and have poor access to agri-based infrastructure and technology to tackle climate-induced impacts and vulnerabilities. They incur high farm input costs (which can go up to 90% including labor costs) due to extreme temperature and drought, changing rainfall patterns, extreme precipitation, and unpredictable weather conditions. These climate-induced events also disrupt and delay the farm/food supply chain, leading to high food losses (up to 50-60%) during harvest, handling and transport. In addition, farmers have limited access to local information services that make them vulnerable to changing market behavior. At present, small holder farmers are limited to growing cash crops according to what they easily think would be easier for them without proper information on market demand, land/soil conditions, and weather patterns, with unreliable market access and unpredictable prices of their produce in the market. Transport of produce is subjected to climatic changes, e.g., extreme temperatures (heat) or extreme precipitation (heavy rains/typhoons), resulting in delivery delays, wastage, product spoilage, reduced prices; thus, incurring low economic productivity.		
Alternatives to the project	An alternative option for the farmers would be to have stand-alone or self-financed facilities (e.g., small-scale dryer or mill, tractor, etc), to cater to their own operational needs during planting, harvesting, and post-processing. However, this requires big investment and operational costs, which is not affordable for the smallholder farmer alone by themselves. Sharing the facilities through community-based management would enhance its utilization, which can provide continuous funding (via equipment rental) to fund maintenance and repair and will promote business collaboration and support, social cohesion, and sharing of information.		
Scenario with the proposed project interventions	Providing access to farmers to integrated community-based shared service facilities (where real-time information about climate-induced events and weather conditions are easily accessible, adoption of regenerative and climate resilient approaches based on the use modern tools in sustainable agricultural practice, nature based solutions and circularity, is facilitated, capacities are developed and operationalized), leads to reduced farm inputs, reduced food losses during handling and transport (reduction target of food losses is pegged at 10-20% only), and increased yield and economic productivity (estimated target income will be pegged at 5-7 times higher than their current income through maximized outputs, minimized inputs and wastage; the farm income will be raised to support a household of 5 at above poverty-threshold, thereby uplifting them from this dire level). In addition, there is the potential of additional income through the premium of the organic or quality products sold in the market. These measures and interventions would increase their economic productivity and strengthen their adaptive capacity and climate resilience thru the access to physical infrastructure supporting their business, leading to food security. The target beneficiaries are primarily belonging to vulnerable and marginalized groups of smallholder farmers.	USD 4,300,000	3 regions; about 3,000 farmer-households in about 6 communities or municipalities: Target beneficiaries = 15,000 people Men/Women ratio: 60-40 Youth involved: 30% (estimates for further verification during full development of proposal)
Component 2. Strengthening the farmers' access to mobilized finance mechanisms in support of their transition to sustainable agriculture practices.			
Baseline/ Business-as-Usual (BAU) scenario	The farmers would continue to be lacking in awareness, have limited access to financial resources, and inadequate adaptive capacity to strengthen resilience to withstand the impacts of climate-change and extreme weather events. They are unable to recover their small capital and suffer from worsening debt issues. They would continue doing what they are now doing (business as usual) and expecting that their situation would dramatically improve, leading to a sense of helplessness & hopelessness.		
Alternatives to the project	An alternative option for smallholder farmers would be to ask for loans either from capitalists (with high interest rates) or from their customers/buyers (which would limit their opportunities to find good prices for their produce as they are obligated to sell to them at usually lower price).		
Scenario with the proposed project interventions	With the interventions of the project, the farmers would enhance their adaptive capacities to transition to sustainable and good farming practices with the provision of financing mechanisms, allowing them to support the initial capital required for farm inputs, labor, and logistics, which would contribute to first-hand business management experience, with access to physical infrastructure and finance, thus, increasing awareness of the benefits of adopting regenerative and resilient approaches, using resilient tools and techniques in increasing their farm productivity; improving their adaptive capacity and empowering them to be climate resilient. With this intervention, additional beneficiaries of about 5,000 more people are foreseen aside from the target of 15,000, who will positively impacted by the project. An increased ratio of	USD 3,000,000	Additional target beneficiaries = 5,000 Total = 20,000 Men/Women ratio: 55-45 Youth involved: 30% (estimates for further

Project Components	Description	Cost (USD)	Estimated Beneficiaries for the project
	men-women is also foreseen, since it is popularly known that women are good with agri-based entrepreneurial skills and will have ample opportunities with the needs- and gender-based design of interventions.		verification during full development of proposal)
Component 3. Institutional and community strengthening through policy advocacy and knowledge management.			
Baseline/ Business-as-Usual (BAU) scenario	The smallholder farmers and their cooperatives or associations at the local level would remain to have inadequacies and limited knowledge and skills to shift to sustainable and resilient agricultural practices, thus would remain vulnerable to climate-induced risks and impacts and market uncertainties. Farmers would remain to have limited access to crucial knowledge in sustainable farming practices and to the constantly changing market behavior. This scenario is exacerbated by limited capacities to handle and manage climate-induced disasters, leading to forced displacement, property (land and house) destruction, and the like.		
Alternatives to the project	An alternative option for smallholder farmers would be to join sponsored trainings and workshops, but they would lose their time spent in the farm, which is crucial for their livelihood. These workshops and trainings tend to be based on common needs and not solely designed nor tailored for the needs and requirements of the target beneficiaries. Some knowledge and information can be accessed via the usual or common streams (TV, radio, books, media) but not tailored to the relevant information that smallholder farmers require to increase their capacity for climate-change resilience.		
Scenario with the proposed project interventions	Adaptive policy measures and capacity building programs will be available to small-holder farmers and their cooperatives or associations at the local level, thereby strengthening their resilience to vulnerabilities brought about by climate-induced risks and impacts and market uncertainties. All information, knowledge, and skills required will be made accessible to them and they will be given priority in acquiring such knowledge through hands-on practice and the availability of coaches, tutors, experts on-site. Additional beneficiaries of about 10,000 more people are foreseen with this intervention. It is the project's target to even out the men-women ratio based on the local population census which is 100:102. The youth and IP sectors in the vulnerable and marginalized groups of the locality will have full access to the project's activities and interventions.	1,450,000	3 regions, additional target beneficiaries of about 10,000 additional farmers in 40-50 communities Total = 30,000 Men/Women ratio: 55-45 Youth involved: 30% (estimates for further verification during full proposal preparation)

67. The project is aligned with the long-term goal of the Philippines enshrined in ***Ambisyon Natin 2040,*** enforced through the ***Philippine Development Plan 2023-2028***, the ***Mindanao Agenda 2023-2028,*** and supported by the **National Adaptation Plan 2023-2050 (NAP), National Climate Change Action Plan 2011-2028 (NCCAP), Philippine Nationally Determined Contribution Implementation Plan 2020-2030 (NDC IP)**, and cascaded for full implementation to the sub-national levels through the **comprehensive local land use, development, environmental management, and climate change action plans** of the local government units (LGUs) such as the regions, provinces, cities, municipalities, and the barangays.

68. This proposed project is also designed to address the **Sustainable Development Goal (SDG) targets**, anticipating to contribute to the following relevant SDGs by 2030, namely: ***SDG 1: No Poverty, SDG 2: Zero Hunger, SDG 3: Good Health and Well-being, SDG 12: Sustainable Consumption and Production, SDG 13: Climate Action***, and ***SDG 15: Life on Land***.

69. **AmBisyon Natin 2040**. This is the 25-year long-term vision from 2015 to 2040 developed by the Philippine government as a guide and roadmap for development planning. This describes the collective aspirations of the Filipino people in terms of the kind of life the people want to live and how the country will be. This instrument is the basis in drawing the Philippine Development Plan (PDP) which is now updated to 2023-2028. The project is ensured to align to this Filipino aspiration to have better quality of life for everyone.

70. **The Philippine Development Plan 2023-2028.** The goal is to lay down the foundation for inclusive growth, a high-trust and resilient society, and a globally competitive knowledge economy. The strategies to achieve this objective are organized under the three major pillars of "Malasakit", "Pagbabago", and "Patuloy na Pag-unlad." *Malasakit* means to enhance the social fabric, *Pagbabago* means to change by reducing inequalities in society, and *Patuloy na Pag-unlad* means increasing the growth potential.

71. **Mindanao Agenda 2023-2028.** This is the development plan designed specifically for Mindanao, aligned with the AmBisyon Natin 2040 and the Philippine Development Plan 2023-2028, which seeks to improve the region's economy, infrastructure, social services, governance, and peace. It also aims to promote inclusive development. The goals are (1) to foster economic growth by promoting jobs and industry and developing agricultural value chains, (2) develop infrastructure by improving connectivity and transportation, (3) improving social services through promotion of well-being of the people, (4) improving governance and institutions, and (6) promoting peace, security and stability. MinDA is the government agency mainly tasked to implement these development agenda in Mindanao and is the executing agency for this project.

72. **National Adaptation Plan 2023-2050 (NAP).** This is a significant plan of the Philippines as it is a critical enabler to enhance adaptation action and support for the Filipino people. The country is the most vulnerable in the world to climate change, necessitating the need to strengthen partnerships, collaboration to accelerate delivery of support for adaptation planning and implementation. **The vision of the National Adaptation Plan (NAP)[35] of the Philippines** *is to establish the country's adaptation priorities at a national level, with the goal of enhancing adaptive capacities and increasing resilience in communities, ecosystems and the economy against natural hazards and climate change. It aims to steadily reduce climate-related losses and damages and optimize opportunities for mitigation, facilitate transformative adaptation, and promote resilient, sustainable development.* **The objective of the NAP[36]** is *to reduce the country's vulnerability to climate change impacts by bolstering adaptive capacity, fostering resilience, and integrating adaptation into relevant policies and programs. It strives to define an adaptation pathway that incorporates sectoral and national development priorities, provides guidance for effective public spending, enables access to multilateral funding, and attracts private capital for adaptation efforts.*

73. Thus, in the Philippine National Adaptation Plan 2023-2050, there are **eight (8) key sectors identified as the focal points for adaptation action**, namely: **(1) agriculture, fisheries, and food security**, (2) water resources, (3) health, (4) ecosystems and biodiversity, (5) cultural heritage, population displacement, and migration, (6) land use and human settlements, (7) livelihood and industries, and (8) energy, transport, and communications. To facilitate cross-sectoral links between these sectors, **five (5) thematic cross-sector adaptation strategies** will be pursued,

[35] National Adaptation Plan (NAP) of the Philippines 2023-2050, p 28.
[36] *Ibid*.

as follows: **(1) strengthening infrastructure resilience, (2) safeguarding livelihoods with social protection and regulations, (3) empowering local governments and communities to take adaptation action, (4) mainstreaming integrated adaptation governance, and (5) scaling-up nature-based solutions.**

74. In this regard, the project can provide avenues for piloting concrete climate change adaptation strategies, specifically to smallholder farmers in the fruits and vegetable industry in Mindanao. The project would contribute to workable models for physical and infrastructure resilience, ecological and environmental resilience through sustainable agricultural practices, economic productivity and financial resilience through sustainable financing mechanisms, food security that promotes good health and well-being, institutional strengthening through improved local governance, and social cohesion through community-based sharing of knowledge, experiences and lessons learned.

75. **National Climate Change Action Plan 2011-2028 (NCCAP).** This document assesses the current situation of the country with regards to climate change risk and outlines the strategic direction up to 2028. This plan is the most recent translation of the national climate action framework strategy, which prioritizes food security, water sufficiency, ecosystem and environmental stability, human security, climate-smart industries and services, sustainable energy, and capacity development. This plan outlines the specific programs and strategies for adaptation and mitigation for 2011 to 2028. It is a comprehensive plan that provides key actions that enhances adaptive capacity and resilience of communities and natural ecosystems to climate change, adopts the total economic valuation of natural resources while ensuring biodiversity conservation, recognizes the competitive advantage of putting value on the direct/indirect use, option to use and non-use of environment and natural resources, as a short to long-term sustainable development goal.

76. **Philippine Nationally Determined Contribution Implementation Plan 2020-2030 (NDC IP).** This outlines the country's implementation plan as it commits to a projected greenhouse gas (GHG) emissions reduction and avoidance of 75%, for 2020 to 2030, of which 2.71% is unconditional and 72.29% is conditional. This NDC Implementation Plan (NDCIP) sets out a roadmap and actions for implementing the Philippines' NDC.

E. Relevant National Technical Standards and Compliance to Environmental and Social Policy

77. In the preparation of this proposed project, the relevant national technical standards and environmental and social policy of the Adaptation Fund, UNIDO, and the Philippines, are considered as guide to align the project activities to these standards and policies, ensuring full compliance. The proposed project is prepared in close collaboration with the national government, herein represented by the Mindanao Development Authority (MinDA), which serves as the government-based executing agency of the project. The project is designed to align with at least one of MinDA's goals which is to foster economic growth by promoting jobs and industry and developing agricultural value chains.

78. Table 6 below shows the summary of the relevant policies and laws to be covered by the project in alignment with the AF ESP, UNIDO ESSPP Operational Safeguards (OS), and the Philippine relevant laws and regulations.

F. Duplication of Project with Other Funding Sources

79. The following table (**Error! Reference source not found.**~~Table 5~~) lists the relevant projects in which the proposed project may have potential duplication; however, where possible, potential synergies and complementarities are instead sought to reinforce and leverage the project's initiatives and intended positive outcomes and benefits to the target beneficiaries. Table 5 is a preliminary list of relevant projects presented below to demonstrate alignment, complementarity with existing projects, and to avoid duplication. During full project proposal development, this list will be expanded and validated in consultation with national stakeholders and MinDA. The proposed project is designed to address specific gaps in climate-resilient fruit and vegetable value chains in Mindanao and therefore remains distinct in scope, sector and geography from these related efforts, while also demonstrating its alignment to the local and national goals and observing complementarity with these existing initiatives.

Table 5. List of other relevant projects with potential duplication

Projects from Other Partners	Main Interventions	Timeline/ Duration	Target Locations & Beneficiaries	Complementary/No Duplication
Philippine Rural Development Programme (PRDP)	Climate-resilient infrastructure, value chain support, convergence platforms, market access, governance capacity building. Fund source: World Bank Loan and Grant	2nd phase: 6 years (2023-2028) 1st phase: 2014-2020 with extension to 2022)	National in scope, implemented with DA, LGUs and farmer groups.	The proposed project may complement this PRDP project when replication and scale-up are desired by the target beneficiaries and stakeholders in other places, which will enable mainstreaming of the effective interventions that can result in strengthening the climate-change resilience of farmers and their cooperatives and associations. This project may complement the country's ambition to achieve genuine food security. Lessons learned from this project may be useful for the proposed project during its preparation, design, and implementation stages. No duplication is envisioned as this project's focus is broader and project sites differ.
Developing Sustainable Agricultural Environment through the Organization of Durian Producers in Mindanao with the Center for Asian Mission for the Poor Asia (CAMP Asia), a Korean NGO	Capacity building, farm expansion, organic certification and market access for durian farmers Fund source: KOICA, CAMP-Asia	Designed for 3 phases over 9 years. 1st phase: 2023-2025	Calinan, Davao City; 400 farmers	The project focuses on durian production in Calinan, Davao City. During stakeholder consultation with the project, the beneficiary-cooperative expressed the need for further support to drum up a full-circle in developing the durian industry in Mindanao, which are not included in the Camp Asia support, such as the provision of processing facilities for bio-based farm inputs and the nurseries for the organic seedlings.
GCF FP201 Adapting Philippine Agriculture to Climate Change (APA).	Climate-resilient practices, institutional capacity building, farmer support Fund source: GCF	Approved in 2023; project period is 2023-2030	At least nine provinces across Regions II, V, X, XII and CAR, about 1.25 million farming households (direct),	This project aims to build the resilience of the Philippine agriculture sector by providing farmers with the tools, training, and financing needed to adopt to Climate-Resilient Agriculture (CRA) practices. APA has broader geographic scope and lesser sector-specific targeting. The proposed project can complement this project by focusing on the fruit and vegetable sector in specific Mindanao regions not covered) and by gleaning on some lessons learned on climate-resilient agricultural practices in general.
GEF Project 9921 Global Partnership for Improving the Food Cold Chain in the Philippines.	Policy & regulatory assessment; capacity building, tech transfer on low-GWP refrigeration, cold chain solutions Fund source: GEF	2019–present	Nationally implemented, including Mindanao, stakeholders across agri-value chain and standards agencies	Focuses on energy efficient refrigeration systems rather than regenerative agriculture; the proposed AF project initiative can complement this project by addressing post-harvest losses and its infrastructure resilience, using cold storage facilities as technology options.
Harnessing the Water-Energy-Food Nexus to Adapt to Climate Change Impacts in Tawi-Tawi	Climate resilient water supply, capacity building for water management, gender-responsive community resilience measures, knowledge sharing and scalability Fund source: Adaptation Fund	2025-2028	Sibutu and Sitangkai islands, Tawi-Tawi, BARMM; ~71,562 direct beneficiaries (~35,423 women, ~36,139 youth), including indigenous seaweed-farming communities	Focused on water security in island communities rather than agriculture, targets different value chains and geographic areas. The proposed project initiative can complement this project by offering institutional and community engagement models, and by informing shared service infrastructure in water stressed climate vulnerable areas. No duplication in agriculture activities nor project scope.

Table 6. Relevant policies and laws in the Philippines to be covered by the project in alignment with AF ESP Principles and UNIDO ESSPP Operational Safeguards (OS).

Adaptation Fund ESP Principles (AF ESPP)	**UNIDO ESSPP Operational Safeguards**	**Relevant Philippine Laws and Regulations**	**Implementing Agency/ies** and short description
AF ESPP that always apply in all projects: **AF ESPP 1: Compliance with the law;** **AF ESPP 2: Access and Equity;** **AF ESPP 4: Human Rights;** **AF ESPP 6: Core Labour Rights; AF ESPP 8: Involuntary Resettlement**	**Overall implementation of the project and its overarching E&S Operational Safeguards: OS 1: Environmental and Social Assessment; OS 11: Information Disclosure; OS 12: Accountability and Grievance System**	Republic Act 7160 of 1991, Local Government Code (LGC Act) (Including laws covered by the project's AF ESP Principles and OS triggers listed above)	**Department of Interior and Local Government (DILG) and LGUs.** The LGC Act "establishes the system and defines powers of local government units (provincial, city, municipal and barangay) in the Philippines. It provides for a more responsive local government structure instituted through a system of decentralization whereby Local Government Units (LGUs) are delegated more powers, authority, responsibilities and resources." The LGUs are thus mandated to uphold the laws of the Philippines, including the applicable international laws that it acceded to. The project is ensuring close partnership with the relevant LGUs so that all the national and local regulations and the ESMP's mitigation measures are acted upon in the most efficient and effective manner during the project implementation and beyond to ensure sustainability.
AF ESPP 6: Core Labour Rights	**OS 8: Labour and Working Conditions**	Republic Act 6715, Labor Code of the Philippines; Civil Service Law (PD 807); Republic Act 11058 and DOLE Department Order (DO) 198-2018, Occupational Safety and Health Standards Act; RA 11313 of 2018, Safe Spaces Act; Republic Act 7877 of 1995, Anti-Sexual Harassment Act; Republic Act 10771 of 2006, Philippine Green Jobs Act	**Department of Labour and Employment (DOLE).** The Philippine labor laws and regulations contain the key elements of AF ESP Principle 6 and UNIDO ESSPP OS 8 that includes Labor Management Procedures (LMP), terms and conditions of employment, rights of workers, occupational health and safety, non-discrimination and equal opportunity, prohibition on forced labor, and provisions on workers' organizations, grievance mechanism, and regulations for vulnerable workers, including child workers. The Safe Spaces Act (RA 11313) provides the protective measures on gender-based sexual harassment. The Anti-Sexual Harassment Law (RA 7877) defines the grounds for sexual harassment cases and prescribes the sanctions and penalties for offenders. The law (RA 10771) promotes the creation of green jobs, contributing to preserving or restoring the quality of the environment. and granted incentives for investments.
AF ESPP 2: Access and Equity; **AF ESPP 3: Marginalized and Vulnerable Groups;** **AF ESPP 5: Gender Equality and Women Empowerment;** **AF ESPP 7: Indigenous Peoples;** **AF ESPP 14: Physical and Cultural Heritage;**	**OS 4: Indigenous People**	RA 8371 of 1997, Indigenous Peoples Rights Act (IPRA)	**National Commission on Indigenous Peoples (NCIP)**. The Indigenous Peoples Rights Act (IPRA) is generally consistent with requirements of AF ESP Principle 7 and UNIDO OS 4. The law contains elements fostering full respect for the rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of indigenous peoples (IPs)/indigenous cultural communities (ICCs) and the mechanisms for development initiatives to avoid adverse impacts on IPs/ICCs, or when avoidance is not possible, to minimize, mitigate, and or compensate for such impacts. Meaningful consultations, free prior and informed consent (FPIC), and grievance redress mechanisms are observed across the development stages. Meaningful consultations are also provided for IPs/ICCs outside their ancestral domains and lands (ADs/ALs) under IPRA and other Philippine laws though procedures are less rigid compared to IPs/ICCs within ADs/ALs. Relevant for activities in or near ancestral domains. The project will ensure culturally appropriate engagement and, where needed, adhere to FPIC processes under NCIP

Adaptation Fund ESP Principles (AF ESPP)	UNIDO ESSPP Operational Safeguards	Relevant Philippine Laws and Regulations	**Implementing Agency/ies** and short description
			guidelines.
AF ESPP 9: Protection of Natural Habitats; **AF ESPP 10: Conservation of Biological Diversity;** **AF ESPP 15: Lands and Soil Conservation**	**OS 1: Environmental and Social Assessment** **OS 2: Protection of Natural Habitats and Biodiversity**	Presidential Decree (PD) 1586, Philippine EIS System and DENR Administrative Order (AO) 2003-30; PH Clean Water Act of 2004 (RA 9275); Sanitation Code of the Philippines (PD 856); Ecological Solid Waste Management Act (RA 9003); Toxic Substances and Hazardous Waste Management Act (RA 6969); Environmental Awareness and Education Act of 2009 (RA 9512); Clean Air Act of 1999 (RA 8749); RA 6541 amending PD 1096, National Building Code; PH Environment Policy (PD 1151); PH Environment Code (PD 1152); PH Fisheries Code (RA 8550); Wildlife Resources Conservation and Protection Act (RA 9147); Revised Forestry Code (PD 1559); RA 8435 Agriculture and Fisheries Modernization Act	**Department of Environment and Natural Resources (DENR)** This law (PD 1586) requires all projects, depending on size/scale and location, to undertake an environmental impact assessment and secure an Environmental Compliance Certificate (ECC) based on the PEISS guidelines. Projects generating insignificant and manageable impacts may secure the Certificate of Non-Coverage (CNC) from DENR. All other relevant laws listed herein address potential environmental impacts that may occur during the civil works for infrastructure, energy supply, water supply and distribution systems, and rainwater harvesting systems. During the operation of facilities, it is expected that wastes (e.g., wastewater) will be generated. Activities that will require water abstraction (water supply and distribution) can potentially cause impacts on sustainability of the resource and biodiversity. These are mitigated or avoided by complying with the required environmental, building, water permits, and other applicable regulations. Social risks are related to potential disturbance (e.g., noise/odor pollution) during construction phase. This law can be linked to the construction and operation of integrated community-based shared service facilities (ICBSSFs) particularly with respect to environmental permitting requirements. The project will comply with applicable provisions of the PEISS, including the ECC or CNC process and will incorporate mitigation measures through the ESMP. Relevant to RA 6541, the design and construction of project-supported infrastructure (e.g., composting units, storage facilities, ICBSSFs) will adhere to national building codes and undergo necessary permitting.
AF ESPP 11: Climate Change; **AF ESPP 12: Pollution Prevention and Resource Efficiency;**	**OS 9: Resource Efficiency and Pollution Prevention**	Republic Act 11285 of 2019, Energy Efficiency and Conservation; Republic Act 9513 of 2008, Renewable Energy Act; PD 1152, Philippine Environment Code; PD 1067, Water Code of the Philippines; RA 9275, Philippine Clean Water Air Act; PD 979, Marine Pollution Decree; DOH AO 2017-0010, Philippine National Standards for Drinking Water; DOH AO 2014-0027, National Policy on Water Safety Plan; RA 8749, Philippine Clean Air Act; RA 9003 of 2001, Ecological Solid Waste Management Act; RA 6969, Toxic Substances and Hazardous and Nuclear Wastes Control Act; RA 8550 of 1998, Philippine Fisheries Code; RA 9147 of 2001, Wildlife Resources and Conservation and Protection Act RA 9729 of 2009. Climate Change Act	**Department of Energy (DOE), Department of Environmental and Natural Resources (DENR)).** The law (RA 11285) establishes "a framework for introducing and institutionalizing fundamental policies on energy efficiency and conservation, including the promotion of efficient and judicious utilization of energy, increase in the utilization of energy efficiency and renewable energy technologies, and the delineation of responsibilities among various government agencies and private entities." The law (RA 9513) establishes "the framework for the accelerated development and advancement of renewable energy resources and development of a strategic program to increase its utilization." The law establishes the development market-based policy instruments towards these ends, including Renewable Portfolio Standard, Net Metering, Feed-in-Tariff, Renewable Energy Market, and Green Energy Option. The other laws listed herein cover regulations that can address the project's potential impacts on water resources; pollution (water, air, odor, solid and potential hazardous wastes). Civil works may generate construction-related impacts such as dust, soil runoff, noise, vibration, and wastes/debris. The requirements of the relevant laws will be ensured by the project. The Environmental and Social Management Plan (ESMP) is developed to manage these anticipated environmental and social risks that may lead to negative impacts.

Adaptation Fund ESP Principles (AF ESPP)	UNIDO ESSPP Operational Safeguards	Relevant Philippine Laws and Regulations	**Implementing Agency/ies** and short description
AF ESPP 13: Public Health	**OS 10: Community Health, Safety and Security**	Republic Act 10121 of 2010, The Philippine National Disaster Risk Reduction and Management (DRRM) Act. (Including laws above covering OS 8: Labour and Working Conditions)	**National Disaster Risk Reduction and Management Council (NDRRMC) Office of Civil Defense (OCD), Department of Social Welfare and Development (DSWD).** In addition to the description provided above, the implementing rules and regulations (IRR) of the Act lists the powers and functions of the National, Regional and Local Disaster Risk Reduction and Management Councils (DRRMCs), as well as provisions for installing Local Disaster Risk Reduction and Management Offices (LDRRMOs) in LGUs.
AF ESPP 14: Physical and Cultural Heritage	**OS 6: Cultural Heritage**	RA 10066 of 2009, Philippine Cultural Heritage Act	This law is applicable to the project which triggers AF ESP Principle 14 and UNIDO ESSPP OS 6. The ESMP ensures that any chance finds or other physical cultural resources, are identified and that a chance find procedure is implemented which requires identification and preservation of any areas of potential cultural importance or artifacts based on the **National Commission for Culture and the Arts (NCCA)** guidelines and rules under the law.

G. Learning and Knowledge Management

80. The proposed project's design included component 3 which involves institutional and community strengthening through policy advocacy and knowledge management of sustainable and resilient agricultural practices. This facilitates the achievement of the corresponding project outcomes and outputs in which the local environment in farmlands and indigenous ancestral domains is improved to enable adoption of sustainable agricultural practices and the use of advanced and more efficient tools and technologies, leading to climate-change resilience. Secondly, the knowledge management and sharing platforms are developed and rendered to be easy-to-access-and-use by the stakeholders and beneficiaries.

81. The outputs of project component 3 include the (1) operationalization of the knowledge management platform (such as the mobile and wed applications) and render this readily accessible and useful to the target beneficiaries and stakeholders of the project; (2) the documentation and dissemination of knowledge generated during the project period, and (3) the organization, promotion, and support of the local communities-of-good-agricultural practice.

82. **Operationalization of the knowledge management platform.** This involves setting-up of the knowledge platform (mobile and web-based applications) of the integrated community-based shared service facilities (ICBSSFs) to render this easy-to-access-and-use by all stakeholders and beneficiaries of the project. The Philippines is currently in a unique position to become a knowledge-based economy, aside from its being a truly agricultural country, by leveraging its significantly young demographic profile with approximately 30% of its population falling within the 0-14 age range, while around 64% are between 15 and 64 years old, indicating a large young workforce contributing to the economy.[37] This young population is considered a key driver of digitalization and social media engagement in the country. With these demographics, the project would capitalize on the availability of young people by demonstrating how they can be actively involved in the agricultural sector through these contributions. This platform will be housed at the ICBSSFs as part of the agriculture-based infrastructure that provides farmers and farm communities real-time access to local climatic information services including climate-induced risks and vulnerabilities as well as market uncertainties.

83. **Knowledge generation, documentation, and dissemination.** The activities of the project's components 1 and 2 would allow for extensive studies on sustainable and good agricultural practices (GAP) through the application of nature-based solutions (NbS), circular economy (CE) and green economy (GE) approaches, as well as the use of modern tools and technologies. With the partnership of academic and research institutions in Mindanao regions where the project can have demonstration sites, these processes can be done more efficiently and effectively as university students, faculty and staff, and extension workers, constitute the partners in research, development, innovation, and knowledge generation, documentation and dissemination. In addition, with the guidance and assistance of technical experts and the project management unit (PMU), the communities-of-farmers and other project stakeholders will be assisted in appreciating the lessons learned, insights, know-how, experiences, and other forms of knowledge generated by the project. The project is expected to prepare learning activities, workshops, and training sessions as part of its capacity building program and these will help in assessing and improving the interventions (approaches, strategies, tools) that the project designed. These interventions would lead to the development of manuals and best practices, as a way of their proper documentation and dissemination, that would ensure their effectiveness and sustainability in the long term, with the use of the knowledge management platform.

84. **Organization, promotion, and support of the local communities-of-good-agricultural practice.** This involves the establishment and strengthening of the social ties of the farmer groups and communities, who are beneficiaries and stakeholders of the project, at the local level, with the aim of sharing best practices and promoting collaboration and social cohesion with partners such as local government units, academia, and private sector, in the process of enhancing adaptive capacity and climate resilience at the farm/household and community levels. These groups of informed and trained people would become champions in tackling climate-induced impacts at the local communities. Extreme temperatures, increased frequency and intensity of typhoons, floods, and droughts can cause significant damage to agricultural infrastructure and crops, disrupt and delay transport and farm/food supply chains, that impact food availability. Supporting the vulnerable population to cope with the impact of climate change and ensuring that they have access to adequate food and nutrition would be crucial by mobilizing these capacitated and empowered groups to support in the roll-out of resources, technical, economic, and environmental interventions as well as social protection programs at the local level. With the use of modern tools and technologies, the development, implementation, and sharing of effective and localized disaster risk management strategies (including pest

[37] www.psa.open-stat/2024.

management, food-water-energy supply management, transport and supply disruption, access to local climatic information services, and market/financial trends) can help reduce the climate-induced impacts in the local communities.

H. Consultative Process

85. ***Stakeholder engagement*** is done through consultations with the so-called **ABCG** network (involving representation of groups from **A**cademe and research institutions, **B**usiness and industry, **C**ommunities including farmers, households, cooperatives, associations, civil society, and non-government organizations, and **G**overnment sectors including national, sub-national, and local governmental units) and addressing cross-cutting issues on gender equality, disability, and social inclusion (GEDSI), poverty alleviation, health and wellness, marginalized and vulnerable groups, and climate change vulnerability. Annex 2 shows the summary of stakeholder consultations, mission schedules, list of people met, and short summaries of discussions done. All of these activities were carried out during the concept note preparation phase, following the consultative process that is in compliance with the Philippine laws and regulations, the Environmental and Social Policy (ESP) and Gender Policy of the Adaptation Fund, and the mandate of the UNIDO Environmental and Social Policies and Procedures (ESSPP) Operational Safeguards (OS). These policies are all noted in a matrix done as shown in Part II, Table 5 above.

86. These stakeholder consultations were led by UNIDO and facilitated by MinDA as the executing agency of the proposed project, which were made easier due to its proactive approach in regularly keeping in touch with its stakeholder groups on various programs and projects implemented. As a matter of fact, MinDA is taking the lead in gathering these stakeholder groups for regular events such as the Mindanao Farmers' Summit, the most recent of which was held on December 12, 2024, in Davao City, Philippines, to communicate, consult, and collaborate better the many initiatives that it organizes and implements with its constituencies.

I. Justification for Funding

87. The critical consideration in the successful design and implementation of this project is the sufficiency of the funding that is required. In the light of its thorough assessment of the cost to achieve the main goal of the project which is to demonstrate the climate change adaptation measures and strengthen resilience in the agricultural sector of the Philippines, particularly in the fruit and vegetable sector, this project is well-worth of the funding that it seeks. To reiterate, the project aims to enhance the adaptive capacity and resilience of local farmer communities producing fruits and vegetables in Mindanao Island, to vulnerabilities caused by climate change, extreme weather events and disasters. This can be achieved by (a) establishing appropriate interventions and innovative solutions in improving the local-level agriculture-based infrastructure in the fruit and vegetable sector to enhance farm yield and productivity of vulnerable farmers and farm communities, (b) demonstrate these adaptive interventions at the local-level through technology transfer, capacity building, collaboration and partnerships of farmer communities with local government units, academia, and private sector; and strengthening the enabling environment for finance mobilization, investments, and market access for the fruit and vegetable sector at the local-level.

88. Further, the project targets to improve the fruit and vegetable industry sector by focusing to increase productivity, reduce food losses during post-harvest, and prolong shelf-life of high-value fruit and vegetable products through the establishment of integrated community-based shared service facilities (ICBSSFs) equipped with farm input processing, cold-storage warehouses, post-harvest, product processing, and marketing facilities for the major fruits and vegetables grown in Mindanao, which also includes the provision of community-based seedbanks and nurseries (having climate-resilient seed and plant varieties) as well as the transitioning into sustainable agricultural practices. The project is expected to result in enhanced climate-change resilience of local communities and indigenous peoples, especially the marginalized and vulnerable sectors of society such as the small-holder farmers, in dealing with the impact of climate change and extreme weather events. The farmers in this sector are already experiencing the impacts of climate-change and extreme weather events, which necessitates that the requested funding is primarily anchored on climate-change adaptation costs that is required for the farmers and farmer communities at the local level.

89. The full cost of the project is mainly attributed to the direct and indirect costs in implementing the adaptation measures during the project's duration. These adaptation measures are specifically defined to include suitable nature-based solutions (NbS) and regenerative and circular economy (CE) approaches, and the appropriate use of modern tools and technologies, that would demonstrate the adaptive capacity for climate-change resilience by the farmers, their cooperatives and associations in the local and indigenous communities. In addition, the requested funding also includes capacity-building programs that result in lessons learned, insights, and best practices, that form part of the knowledge generated, documented and disseminated, to catalyze replication and scaleup among the communities in the locality, region, and the country as a whole. This would trigger the ripple effect in real-time, which

is made possible with the provision of the online knowledge management platform included in the requested funding by the project. The Philippines has an internet penetration rate of about 89.34% in 2024 and is estimated to reach 98% by this year 2025.[38] This would pave the way for easy dissemination and replication of the lessons learned and best practices of climate-change adaptation measures demonstrated by the project around the country and in the world.

90. In addition, the requested funding includes the required development and implementation of rigorous monitoring, assessment, and evaluation measures and systems to track the progress and milestones of the project, to ensure measurable, tangible, and evidence-based outcomes, outputs, and impacts later on. The project implementation plan is designed to ensure that the project objectives are attained and its outcomes and outputs are realized solely with the resources provided by the Adaptation Fund. During the full project preparation phase, a detailed and complete description of activities and related costs will be provided to support the efficient implementation of the project.

J. Sustainability of the Project

91. The project is robustly designed based on the prior lessons learned, best practices, and insights shared by the stakeholders with sustainability considerations in mind. Employing the **triple-bottom line approach** in sustainability, which includes **social, economic, and environmental sustainability**, the project has the following components and elements included in the design and implementation to ensure its sustainability:

92. The project includes component 1 which is the **establishment of integrated community-based shared service facilities (ICBSSFs) to enhance adaptive capacity and climate-change resilience of farmers**. This support infrastructure would provide concrete avenues where demonstrations of best practices in sustainable and good agricultural practices are showcased first-hand for and by the farmers and other target beneficiaries and stakeholders. This tangible workplace would facilitate faster adaptive capacity and robust establishment of the communities of good-agricultural-practice, which are necessary for immediate functional, collective, efficient, and effective response to the current state of the country's climate-change vulnerability. Appropriate business revenue models and financial mechanisms will be developed and implemented as soon as possible during the project implementation phase as part of the project's sustainability plan in order to support viable operation and upkeep in the long-term and create an enabling environment for sustained financial and market access. These ICBSFFs will be run by the farmer communities themselves (farmer associations or cooperatives), who are trained and capacitated during the project implementation period by technical experts and business/community development officers.

93. The project has component 2 that **ensures the strengthening of the farmers' adaptive capacity and climate-change resilience by accessing the mobilized finance mechanisms to support these transitional interventions**. This component supports the desired outcomes of component 1 by way of enhancing the capacities of the farmers-cooperatives and other beneficiaries and stakeholders in demonstrating the best practices of sustainable agriculture through training, learning sessions and other capacity building activities. Both components 1 and 2 would facilitate knowledge generation in terms of lessons learned, insights, and best practices. These components will engage technical experts, business and community development officers, as well as practitioners (in business and industry/private sector) to provide know-how, hands-on training, and support.

94. The project has component 3 which takes care of **institutional and community strengthening through policy advocacy and knowledge management of sustainable agricultural practices and approaches towards climate-change resilience**. With the partnership of academic and research institutions in Mindanao regions, this component would ensure the facilitation of science-based and evidence-based knowledge generation, documentation, and dissemination.

95. **Farmers-cooperatives, community-based ownership and management**. The project is designed with the concept of facilitating adaptive capacity and the transformative exercise of these capacities by the farmers-cooperatives, through the provision of the integrated community-based shared service facilities (ICBSSFs) coupled with the appropriately designed capacity-building programs. With the guidance and assistance of technical experts, the community-based shared service facilities will be managed accordingly by the farmer communities at the local level, the hands-on training of which starts during project implementation, and will be ensured in the long term with the support of a suitable and viable business-revenue model as enabling mechanism for sustained operations.

96. **Approaches to the robustness of governance mechanisms**. As part of the project's capacity-building program, the

[38] https://www.statista.com/statistics/975072/internet-penetration-rate-in-the-philippines/retrieved 28 Jan 2025.

strengthening of the governance structures of the farmers-cooperatives will be provided or when necessary, new ones will be established especially those which are suitable for their needs. The project would provide rigorous supervision and oversight as needed. Part of the governance structure is the provision for access (with appropriate and equitable rental fees to support operation and maintenance costs of facilities), equity (to raise revolving funds and establish the basis for group ownership and stewardship), and conflict resolution mechanisms which can be integrated into the ICBSSF's standard operating procedures to enhance the capacities of the local farmer communities to manage access and equity and resolve conflicts that may arise concerning the management and use of ICBSSFs. The collaborative partnership with LGUs, academia, and private sector will be facilitated by a Memorandum of Agreement (MOA) with detailed Terms of Reference (TOR), which would clearly define the roles and responsibilities of each party, and guarantee the provision of support and collective oversight to secure long-term sustainability through the established governance structures. The provisional terms and conditions of the MOA will be openly discussed and documented during the final project preparation phase in the conduct of multi-sectoral stakeholder engagement in order to provide the indicative directions of the partnership or venture in managing and sustaining the ICBSSFs, its vision and mission, and targets.

97. **Approaches to sustainable finance mechanisms.** Farmers-cooperatives in communities have already their own finance mechanisms as agreed by the general membership. However, in this project, as part of ensuring good governance structure, the sustainable finance mechanisms would be studied, learned and explored more carefully by the farmers-communities in order to establish the appropriate finance mechanisms by which the support infrastructure and capacity-building efforts provided by the project will be sustained in the long term. Technical experts will be engaged in the project to train and support the communities in this matter as well. For instance, community-based financing may be relevant to allocate funds for repair, maintenance, and replacement of equipment and machinery, and the upkeep of the ICBSSFs. The project may also facilitate partnerships of farmers-cooperatives with government, NGOs, private sector, academic, and others in order to secure sound financing mechanisms (investments), co-financing or co-funding and support for their long-term activities.

98. **Knowledge sharing to catalyze continuous improvement**. As part of the project's component 3 activities, knowledge dissemination and sharing would be carried out to catalyze replication and scaleup. In order to do this, regular and participatory monitoring, assessment, and evaluation activities will be done, using suitable tools and systems in place, such as the PDCA (Plan-Do-Check-Act)-cycles. This also includes regular checking and feedback mechanisms to trigger adjustments based on the inputs and assessments of communities, the technical experts, and the project management unit (PMU). All these activities are done with the aim of catalyzing continuous improvement, considering the different levels of capacities, skills, and know-how of target beneficiaries. An important aspect of these measures to ensure sustainability is the proper documentation of knowledge generated, which can be encapsulated through the development of manuals and publications containing the best practices and all the important science-based and evidence-based knowledge generated during project implementation. The process of replication and scaleup will be part of the long-term direction in managing and sustaining the ICBSSFs, which is catalyzed by the project's implementation, as will be defined and stipulated in the MOA with TOR, that would be drafted and agreed upon by the governing parties (e.g., involving the farmer-cooperatives, LGU, NGO, private sector, academia). Since the project will organize and implement activities at the pilot sites, this process of replication and scaleup will be rigorously facilitated, defined, expedited, assessed, evaluated, tested, and validated through the experiences, best practices, and lessons learned during the project implementation.

K. Environmental and Social Impacts and Risks

99. In this proposed project, an overview of the relevant environmental and social impacts and risks are identified based on the environmental and social safeguards and principles (ESSP) of the Adaptation Fund. These are assessed preliminarily based on the requirements for compliance. Potential impacts and risks are meticulously subjected to further assessment and management during the next stage of the project proposal development in order to minimize if not eliminate negative impacts. The following table (Table 7) below shows the matrix on the overview of the preliminary assessment of the ESSP, following the guidance provided by the tabulated notes on the policies, laws, and regulations of the Philippines, the Adaptation Fund, and UNIDO.

100. Based on the initial assessment and screening of the ESSP, the project is classified as **Category B** according to its potential environmental and social impacts. An environmental and social impact assessment (ESIA) study will be conducted during the full project preparation phase in order to ascertain these perceived impacts and ensure its mitigation and management, as the case may be, through an environmental and social management plan (ESMP).

101. The project is facilitating the collection of all data pertaining to stakeholder engagements and consultations,

including the collection of gender-disaggregated data and analysis through the gender specialist. The process will adhere to the guidelines set forth by the relevant governing laws and regulations of the Philippines, the ESP Principles and Gender Policy of the Adaptation Fund, and the UNIDO ESSPP Operational Safeguards.

102. In specific terms, the process also adheres to the following specific guidelines of Adaptation Fund such that during the design mission, deliberate efforts will be made to involve national women's organizations and institutions, structures within and outside the government agencies dedicated to women, youth, and gender equality, in addition to the National Designated Authority (NDA). This inclusive approach will encompass women's networks, gender and women's rights organizations, civil society, and academia at both the national and local levels; conduct consultations with male and female beneficiaries/stakeholders separately as well as in mixed groups; conduct consultations with Indigenous Peoples and indigenous cultural communities (IPs/IPCCs) separately as well as in mixed groups; carefully consider the timing and location of consultation meetings to ensure balanced gender representation; utilization of appropriate communication methods (e.g., using the local language or dialect) to effectively engage both women and men; and set targets for gender attendance to ensure meaningful participation.

Table 7. Overview of the preliminary assessment of the environmental and social safeguards and principles (ESSP)

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law		**Low or no risk.** The proposed project is developed and will be implemented in partnership with the national government and the relevant local government units, thus, ensuring compliance with the relevant laws and regulations, pertaining to ESSP. The full project proposal can carry out an in-depth analysis of the relevant and applicable laws and policies in order to ensure its strict compliance.
Access and Equity		**Low or no risk.** The proposed project is envisaged to have low risks in terms of access and equity, which can be attributed to its inclusive approach in the process of its preparation, by involving all sectors of society across the potential project sites, considering the vulnerable and marginalized groups such as the small-holder farmers-communities and indigenous peoples and communities in their ancestral domains, in the fruits and vegetable farms all over Mindanao. In order to ensure compliance with the Adaptation Fund's ESSP, the following approaches and measures are observed: ***Participatory approach towards transparency, accountability, responsibility, and inclusivity:*** MinDA as the executing entity of this project has organized annual Farmers Summit in Mindanao, the most recent of which is done last December 12, 2024, which was actively participated by over 850 farmers-members of cooperatives across Mindanao. The project concept has been presented during this summit and the stakeholders and potential beneficiaries have been invited to express their interests and willingness to participate in the project should they desire to do so. The project's approach and design take into account ***transparency, accountability, responsibility, and inclusivity*** to ensure fair and impartial access to benefits by all stakeholders and potential beneficiaries. In addition, during this Summit, a rapid situational assessment survey of the agriculture (fruit and vegetable) market in Mindanao was carried out on a voluntary basis, in order to determine and validate the issues, challenges, aspirations, and support that farmers need in relation to enhancing its adaptive capacity and resilience to climate change. MinDA technical team was also deployed separately to conduct stakeholder consultations around Mindanao to inquire on farmers' needs, sentiments, issues, and challenges. The project is actually prepared taking into consideration the expressed needs and challenges of farmers gleaned from these consultation activities. ***Targeting vulnerable and marginalized groups:*** The project is planned and designed to target the vulnerable and marginalized groups of farmers, who are focused on the fruit and vegetable farming across Mindanao. The women, youth, and indigenous peoples in these areas are also included where tailored interventions are considered in project planning and design. ***Collaboration with national authorities.*** MinDA, being a government agency in-charge of implementing all development projects and interventions in Mindanao is no stranger to the benefits of collaborating with all national agencies and authorities who are or may be potentially involve in the project. This approach ensures proper alignment with national policies and legislations, which are designed to safeguard the rights and interests of the

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
		vulnerable and marginalized sectors of the country. ***Provision of grievance and redress mechanisms (GRMs):*** UNIDO and MinDA have in place well-publicized and easily-accessible procedures in providing assistance and in addressing grievances and complaints from individuals or groups, in order to ensure the prompt and fair handling of potential issues related to the design, planning, and implementation of the project.
Marginalized and Vulnerable Groups		**Low to Medium risk.** Due to the involvement of the target beneficiaries in vulnerable groups, the project is rated with **at least low risk and at most medium risk**. Effectively engaging with the vulnerable sector is a potentially complex process as it requires thorough planning and implementation to ensure their protection, inclusion, and active participation. With the guidance of the policies and regulations as summarized in Table 5, the project can prepare and implement the environmental and social management plan (ESMP) to ensure that the vulnerable groups are treated fairly, their rights are protected, their voices heard, and most especially their well-being is taken cared of appropriately.
Human Rights	~~✓~~	**Low or no risk.** The proposed project promotes and upholds all the fundamental human rights as defined by law. It does not intend to violate any of the principles of human rights.
Gender Equality and Women's Empowerment		**Low risk.** This rating is attributed to the fact that the country has a national and comprehensive working system dealing with Gender Equality and Women Empowerment (GEWE). In addition, the project will promote GEWE as designed through its targeted approach of implementing GEWE as mandated by law in the Philippines.
Core Labour Rights		**Medium Risk.** The proposed project is operating in the agricultural sector, specifically in the fruit and vegetable sector, where there is a big possibility that the working conditions do not meet the national and international labor laws. In order to ensure compliance and to mitigate this risk, the project will ensure that the ILO standards along with the national laws are followed and respected, by setting these standards as pre-requisites prior to engagement in the project. Compliance can be verified by the local offices of the Department of Labor and Employment (DOLE) so that the project will ensure fulfillment and compliance with the national and international laws and regulations.
Indigenous Peoples		**Low to Medium Risk.** Mindanao island is home to about 61% of the 17 million indigenous peoples of the country. With the guidance of the policies and regulations as summarized in Table 5, the project can prepare and implement the environmental and social management plan (ESMP) to ensure that the IPs identified as vulnerable and marginalized groups are treated fairly, their rights are protected and their voices heard, as already indicated in the AF ESPP on Access and Equity. The Free and Prior Informed Consent (FPIC) will further be observed and respected. For this proposed project, the Indigenous Peoples and their communities, are expected to be the majority of the targeted beneficiaries as estimated in Table 4; and their ancestral domains that serve as their farmlands and main sources of livelihood, will also be affected by the project's interventions in terms of environmental and social impacts. During the full project proposal preparation stage under PFG, more in-depth engagements with the IPs will be conducted in the proposed project sites, so that the proposed project interventions will surely align with the IPs' goals and aspirations (based on RA 8371 of 1997, also known as IPs' Rights Act) and complement as well with MinDA's initiative on "Strengthening the Indigenous Peoples in Mindanao (STIP Mindanao) Program" that champions this legislation in Mindanao. Under RA 8371, the IPs and their communities also have responsibilities such as maintaining the ecological balance of their ancestral domains and restoring denuded and destroyed areas. With the proposed project's interventions, the IP farmer communities will be capacitated to do this, especially equipping them with the tools and knowledge on climate-change resilience and adaptation.
Involuntary Resettlement	✓	**Low or no risk.** The project does not involve plans for resettlement.
Protection of Natural Habitats		**Low Risk.** The project promotes and adheres to the international and national laws covering the protection of natural habitats by working with the agricultural sector (e.g., collaborating with the local government units, complying with the requirements based on the national and local regulations, etc) and improving the current agricultural practices into sustainable and good ones. Farmlands involved in the project are limited to the existing ones that do not have issues in relation to (potential) violation of any of the laws on protecting natural habitats.
Conservation of Biological		**Low Risk.** The project promotes the conservation of biological diversity by working with the agricultural sector and improving the current agricultural practices into sustainable and good

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Diversity		ones.
Climate Change		**Low Risk.** The project promotes climate-change resilience in project sites which are susceptible and vulnerable to climate-induced impacts and extreme weather events. The project will not cause any significant emissions of GHG and will not contribute to climate-change risks.
Pollution Prevention and Resource Efficiency		**Low Risk.** The proposed project is operating in the agricultural sector, specifically in the fruit and vegetable sector, where environmental laws and regulations pertaining to water and air pollution are most likely violated, as evidenced by the contamination of water and air with synthetic chemicals used excessively as fertilizers and pesticides in the agricultural farms. The project is rated to have low risk due to the fact that the project promotes the adoption of clean technologies based on good agricultural practices (GAP). the proposed project will promote the active adoption of climate-change resilience approaches which include sustainable and good agricultural practices, by shifting to organic farming and avoiding the use of synthetic chemicals such as fertilizers and pesticides. A comprehensive environmental and social management plan (ESMP), which tackles waste and pollution management, will be developed for each project site in order to guide the project in mitigating the risks involved, with the guidance of the applicable laws and regulations as summarized in Table 5. As part of project implementation, regular and systematic monitoring and evaluation will be conducted by the project team following the ESMP in collaboration with the communities-target beneficiaries and local authorities. As will be prescribed in the plan, all stakeholders in the project will be oriented with the ESMP, its challenges and implications to ensure compliance with the laws and regulations.
Public Health	✓	**Low or no risk.** The proposed project does not envisage negative nor adverse impact on public health-related issues and concerns as it promotes sustainable agricultural practices such as organic farming which uses organic or bio-based farm inputs; on the other hand, this rather mitigates health risks related to the excessive use of synthetic chemicals such as fertilizers and pesticides, which cause air and water pollution.
Physical and Cultural Heritage	✓	**Low or no risk.** The project chooses farm sites which are already used by farmers. There is a very low probability that physical and cultural heritage sites of archaeological, paleontological, historical, cultural, artistic or religious value will be found or affected in the selected project sites. If this happens, the potential risks or impact will be low.
Lands and Soil Conservation		**Low risk**. The project envisages the promotion of sustainable land management practices, by using land and soil suitability maps to guide farmers on suitable crops to cultivate and transition to sustainable agricultural practices at the project sites and farms. This is to promote soil conservation and avoid land degradation. During the full project preparation phase, the farmlands considered as pilot sites for the project will be further assessed and the following will be identified and described: soil that may be impacted by the project, activities that may lead to loss of soils, reasons why soil loss is unavoidable as the case may be, and measures that will be taken to minimize soil loss. Furthermore, productive lands and or lands that provide valuable ecosystem services that exist within the project area will be identified and assessed in the same manner as the farmlands considered as pilot sites for the project.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Project Alignment with the Results Framework of the Adaptation Fund

Table 8. Project alignment with the Results Framework of the Adaptation Fund

Project ~~Outcomes~~Objective(s)[39]	Project Outcomes Indicators	~~Adaptation~~ Fund Outcome	~~Adaptation~~ Fund Outcome Indicator	Grant Amount (USD)
Enhancing adaptive capacity and resilience of local farmer communities producing fruits and vegetables in Mindanao Island, to vulnerabilities caused by climate change, extreme weather events and disasters, leading to improved food security and environmental protection at the local level.	Number of farming households in target communities with sustained climate-resilient alternative livelihoods and improved food security.	**Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in target areas.	**Indicator 6.2:** Percentage of targeted population with sustained climate-resilient alternative livelihoods.	8,750,000
Component 1. Establishment of integrated community-based shared service facilities to enhance adaptive capacity and climate-change resilience of farmers at the local level.				
Outcome 1.1. The farmer communities' adoption and demonstration of innovative solutions and sustainable agricultural practices are supported, enhanced, and replicated.	Number and % of small-holder farmer cooperatives and associations that are supported and have enhanced adaptive capacity and demonstration of innovative solutions and sustainable agricultural practices at the local-level, leading to improved productivity and resilience to climate-induced impacts.	**Outcome 8:** Support the development and diffusion of innovative adaptation practices, tools and technologies	**Indicator 8.** Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	4,300,000
Component 2. Strengthening the farmers' access to mobilized finance mechanisms in support of their transition to sustainable agriculture practices.				
Outcome 2.1. The farmers' access to finance to sustain adaptive capacity and climate-resilience is supported and strengthened.	Number and % of small-holder farmer cooperatives and associations accessing finance during the transition that are supported and strengthened;	**Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	**Indicator 6.1** Percentage of households and communities having more secure access to livelihood assets	3,000,000500,000
	Number and % of farmers with sustained climate-resilient alternative livelihoods		**Indicator 6.2.** Percentage of targeted population with sustained climate-resilient alternative livelihoods	500,000
Outcome 2.2. Farmers' self-awareness and ownership of acquired adaptive capacity and	Number and % of farmers who have enhanced self-awareness and ownership of acquired adaptive	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate	**Indicator 3.1.** Percentage of targeted population aware of predicted	2,000,000

[39] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply.

climate-change resilience are enhanced.	capacity and climate-change resilience	risk reduction processes at local level	adverse impacts of climate change, and of appropriate responses	
Component 3. Institutional and community strengthening through policy advocacy and knowledge management.				
Outcome 3.1. Policies and measures are improved and promoted.	Number of policies and measures that are improved and promoted	**Outcome 7:** Improved policies and regulations that promote and enforce resilience measures	**Indicator 7.** Climate change priorities are integrated into national development strategy	550,0001,450,000
Outcome 3.2. The knowledge management and sharing platform is developed and accessible.	Number and % of staff, personnel, farm workers, stakeholders, and beneficiaries trained and have access to the knowledge management and sharing platform in each project site.	**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate-induced socio-economic and environmental losses	**Indicator 2.1.** Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	900,000

Project Outputs	Project Output Indicators	Adaptation Fund Output	Adaptation Fund Output Indicator	Grant Amount (USD)
Component 1. Establishment of integrated community-based shared service facilities to enhance adaptive capacity and climate-change resilience of farmers at the local level.				
Output 1.1.1. Sustainable agricultural practices and approaches are promoted, enhanced, and replicated at the farm/household and community levels.	Number of sustainable agricultural practices and approaches promoted and replicated at the farm/household and community levels.	**Output 8:** Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	**Indicator 8.1.** Number of innovative adaptation practices, tools & technologies accelerated, scaled-up and/or replicated	3,000,0004,300,000
			Indicator 8.2. Number of key findings on effective, efficient adaptation practices, products and technologies generated	1,300,000
Component 2. Strengthening the farmers' access to mobilized finance mechanisms in support of their transition to sustainable agriculture practices.				
Output 2.1.1. Increased access and utilization of mobilized finance at the farm/household and community levels.	Number and type of adaptation practices promoted and strengthened by a number and percentage of farmers at the farm/household and community levels	**Output 6.** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	**Indicator 6.1.1.** Number and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	3,000,000500,000
	Number and type of income sources for households and communities (cooperatives and associations) generated through the project interventions		**Indicator 6.2.1.** Type of income sources for households generated under climate change scenario	500,000
Output 2.2.1. Increased participation of farmers in capacity building, technology transfer, and collaborative activities at the farm/household and community levels	Number of news and publications released covering these activities	**Output 3.1.** Targeted population groups participating in adaptation and risk reduction awareness activities	**Indicator 3.1.** Number of news outlets in the local press and media that have covered the topic	2,000,000

Formatted: Body Text, Centered

Formatted: Body Text, Centered

Formatted: Body Text, Centered

Formatted: Body Text, Centered

Project Outputs	Project Output Indicators	Adaptation Fund Output	Adaptation Fund Output Indicator	Grant Amount (USD)
Component 3. Institutional and community strengthening through policy advocacy and knowledge management.				
Output 3.1.1. Local and tailor-made adaptation plans and policy measures are developed and promoted.	Number of policies introduced or adjusted to address climate change risks in the agriculture (fruits and vegetable) sector	**Output 7.** Improved integration of climate-resilience strategies into country development plans	**Indicator 7.1.** Number of policies introduced or adjusted to address climate change risks (by sector)	550,000~~1,450,000~~
Output 3.1.2. Policies and measures that support good agricultural practices are introduced and promoted.	Number of policies that support good agricultural practices introduced and promoted			
Output 3.2.1. Knowledge management platform is operational and readily accessible and useful at the farm/household and community levels.	Number of workers and beneficiaries trained to respond to, and mitigate impacts of, climate-related events (by gender) through the use of the knowledge management platform	**Output 2.1.** Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	**Indicator 2.1.1.** Number of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	400,000
Output 3.2.2. Knowledge generated are documented and disseminated.	Number of beneficiaries and stakeholders (people, organizations, institutions) who accessed the knowledge generated, documented and disseminated by the project		**Indicator 2.1.2.** Number of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	500,000
Output 3.2.3. Local communities-of-good-agricultural-practice are supported and strengthened.	Number of targeted organizations and institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)			

Formatted: Body Text, Centered

Formatted: Body Text, Centered

B. Implementation Arrangements

UNIDO will be the implementing entity of the project, which will provide oversight and ensure the implementation of proper fiduciary and ESSP operational safeguards in accordance with the rules and regulations of the Adaptation Fund. As such, UNIDO will also provide the required scientific and technical expertise and support to the project in all stages, from conceptualization, formulation, development, start up, implementation, evaluation, and closure. At the country level, UNIDO and Mindanao Development Authority (MinDA) will act as project executing entities (PEEs). UNIDO will be responsible for project outcomes 1.1 and 3.2, which can build on UNIDO's extensive experience and expertise in supporting climate adaptation innovations, building the capacity of national institutions by drawing on international and regional expertise and best practices. MinDA will be responsible for the execution of project outcomes 2.1, 2.2 and 3.1 through the support of local entities that have an established network and strong grassroots presence in the target regions. Overall, the project execution will be supported by local organizations such as the non-governmental organizations (NGOs) having expertise in sustainable and good agricultural practices, community development, and business development of farmers-cooperatives and associations, and local academic and research institutions (i.e., local universities) having expertise in research, development, extension, and innovation in the field of agriculture, food security, and climate change studies. These organizations would also provide support in ensuring that all cross-cutting and cross-sectoral issues will be addressed properly during the project duration which include the active involvement of women and youth in the project especially those coming from the vulnerable and marginalized sectors of the local communities. The proposed execution set-up empowers local communities as well as enhances efficiency in terms of delivering the outputs of the project by harnessing the strengths of each partner/stakeholder.

A project steering committee (PSC) will be established to guide and advice the project on the most efficient and effective implementation arrangements that would facilitate partnerships and collaboration with all project partners

and stakeholders, and would also advice on potential synergies and complementarities with other projects. The PSC will be chaired by the Mindanao Development Authority (MinDA) and include members from the Department of Environment and Natural Resources (DENR), Department of Agriculture (DA), as well as representatives from the farmer communities. The terms of reference of the PSC and its member composition will be defined further during the preparation of the full project document.

The project management unit (PMU) will be organized during the project startup and will be in-charge of the day-to-day management of project activities during the implementation period and will ensure the achievement of the project outputs and outcomes that lead to the attainment of the project objectives with the guidance of the PSC and full support of MinDA and UNIDO, and all the project partners. MinDA will play a crucial role in the project's M&E as they are the main government implementing partner on the ground and will use project execution cost to support the project monitoring and evaluation function.

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

A. Record of endorsement on behalf of the government[40]

(Name, Position, Ministry)	*(Date: Month, day, year)*
Atty. Analiza Rebuelta-Teh *Undersecretary for Finance, Information Systems and Climate Change* *Department of Environment and Natural Resources, The Philippines*	*26 June 2025*

B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (AmBisyon Natin 2040, The Philippine Development Plan 2023-2028, Mindanao Agenda 2023-2028, National Adaptation Plan (2023-2050), National Climate Change Action Plan, Nationally Determined Contributions Implementation Plan and other relevant plans), and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Ms. Ganna Onysko
Senior GEF, GCF, AF Coordinator
Division of Funding Partner Relations
Directorate of Global Partnerships and External Relations
United Nations Industrial Development Organization - UNIDO
Implementing Entity Coordinator

Date: *(Month, Day, Year)*	Telephone and email:
~~*27 June*~~*11 September 2025*	g.onysko@unido.org / +43 1 26026 3647

Project Contact Person:
Meryem SGHIR

[40] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Telephone and Email:
+43 1 26026 364743
M.SGHIR@unido.org

ADAPTATION FUND

JUN 2 7 2025

Letter of Endorsement by Government

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

Subject: Endorsement for the Concept Proposal **"Agricultural interventions for development: harnessing and enhancing adaptation and resilience tools and strategies for the Philippine fruit and vegetable industry"**

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

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Industrial Development Organization (UNIDO) and executed by UNIDO and Mindanao Development Authority (MinDA). UNIDO will also act as partial executing entity, in line with the request and agreement of the Government of the Philippines

Thank you.

Very truly yours,

ATTY. ANALIZA REBUELTA-TEH
Undersecretary
Finance, Information Systems and Climate Change
and National Designated Authority-Adaptation Fund

Revised PFG Submission Form[1] (additions in red)

Project Formulation Grant (PFG)

Submission Date:

Adaptation Fund Project ID:
Country/ies: The Philippines
Title of Project/Programme: Harnessing and Enhancing Adaptation and Resilience Tools and Strategies for the Philippine Fruit and Vegetable Industry
Type of IE (NIE/RIE/MIE): MIE
Implementing Entity: UNIDO
Executing Entity/ies: UNIDO

A. Project Preparation Timeframe

Start date of PFG	November 2025
Completion date of PFG	June 2026

B. Proposed Project Preparation Activities ($)

List of Proposed Project Preparation Activities	Output of the PFG Activities	US$ Amount	Budget note[2]
To conduct a Climate Risk and Vulnerability Assessment (CRVA)	CRVA assessment report	**13,000**	National expertise and support staff: US$ 10,000 National travel: US$ 3,000
To prepare a baseline report against the interventions proposed and indicators/targets aimed	Baseline report	**13,000**	National expertise and support staff: US$ 10,000 National travel: US$ 3,000
To carry out detailed stakeholders' consultations at local and national level specifically on selected project sites, with local	Stakeholders' consultation report	**30,000**	National expertise and support staff: US$ 10,000 National travel: US$ 5,000 Meetings and workshop expenses: US$ 15,000

[1] As presented in AFB/PPRC.33/40 Annex 1.
[2] The proposal should include a detailed budget with budget notes indicating the break- down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

communities and indigenous populations.			
To conduct an Environmental and Social Management assessment	Environmental and Social Management Plan (ESMP) and a UNIDO Environmental and Social (E&S) Screening form	**16,000**	National expertise: US$ 6,000 National travel: US$ 5,000 Meeting expenses: US$ 5,000
To carry out an In-depth gender analysis in order to effectively mainstream gender issues into the design and formulation of the project.	Plan of action for gender mainstreaming is developed, Project document is gender mainstreamed and costs for implementation estimated	**14,000**	National expertise: US$ 6,000 National travel: US$ 5,000 Meetings and workshop expenses: US$ 3,000
Drafting of the full fledge project document and required annexes, with the identification of project or programme indicators and development of monitoring and evaluation plan.	Full fledge proposal	**14,743**	National/international technical expertise: US$ 14,743
To carry out a monitoring mission by the backstopping officer of UNIDO	Mission report	**12,506**	International and national travel: US$ 7,000 Technical Report: US$ 5,506
To organize prevalidation and a validation workshop based on local consultations, workshops to discuss the specific project and program ideas (including translation into local languages, preparation of background papers, etc.	Validation workshop report	**25,000**	Expertise and support staff: 10,000 Local travel: 5,000 Workshop expenses: 10,000
IE fee (support costs)	IE admin and technical support for project development, monitoring and supervision Compliance assurance	**11,751**	Technical and admin support services.

Total Project Formulation Grant		**150,000**	

Description of the required activity	Justification for the need and for the amount
To conduct a Climate Risk and Vulnerability Assessment (CRVA):	The Climate Risk and Vulnerability Assessment covers assessments of climate risks, climate exposure, sensitivity, and vulnerability and identification of adaptation measures for the target sector in the identified regions. Measuring the sector's vulnerability to climate change impacts is necessary to increase the sector's resilience. This assessment will be conducted by a national adaptation expert, with the support of a project assistant to facilitate related travel of the adaptation expert and coordination with various stakeholders
To conduct a baseline assessment	The baseline assessment will be conducted so that the data and information is provided to support the interventions proposed and indicators/targets aimed at. The methodology will be based on a participatory approach, collecting primary data at the local, community level and secondary data.
To carry out detailed stakeholders' consultations at local and national level:	Stakeholder consultation serves as a fundamental mechanism for collecting information, perspectives, and feedback from individuals involved in a project. This activity will serve to ensure further alignment of an engagement plan with the needs, expectations, and concerns of all relevant stakeholders. The stakeholders' consultations will target specifically selected project sites, involving local communities and indigenous populations;
To conduct an Environmental and Social Management assessment:	This activity is an integral part of UNIDO Environmental and Social Safeguards Policy and Procedures, applicable to all UNIDO projects and programmes submitted to the AF. It requires that UNIDO projects and programmes undergo environmental and social risk (E&S) assessments which will help decide on the categorization of the project and identify environmental and social issues that should be addressed in its development and implementation. The ESM will provide guidance on how to mitigate the environmental and social risks during the project implementation phase. This activity will be conducted by a technical expert and will require local travel to the project sites.
To carry out an In-depth gender analysis in order to effectively mainstream gender issues into the design:	This activity will allow mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making both women and men's concerns, experiences and aspirations an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that they benefit equally, and inequality is not perpetuated. This activity will be conducted by a national gender expert and will require travel to the project sites and consultations with various groups of beneficiaries.
To carry out a monitoring mission by the backstopping officer of UNIDO	This travel is earmarked for the project manager of UNIDO who needs to contribute in terms of technical backstopping, supporting the mobilization of the endorsement letter and the stakeholders' consultations with key institutions and providing orientation on the project design, scope and budgeting. The fee of the project manager is covered by the support costs
To prepare the full-fledge project proposal as per the	This activity will gather the results of all the assessments conducted during the preparation of the full fledge project proposal, following the template of the Adaptation fund and the requirements of UNIDO. The full-fledge proposal will

requirements of the Adaptation Fund To organize validation workshops	be presented to all key stakeholders for validation during a national workshop. The drafting and compiling of the project proposal will be conducted by a national adaptation expert, supported by an internal expert in programming. The validation workshop will involve in person pre-validation workshops at the level of the target communities and indigenous populations in order to ensure their buy in of the proposed project interventions. This will be conducted during pre-validation workshops. A final validation workshop will bring key institutions together, presenting the final project document.

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Ms. Ganna Onysko Senior GEF, GCF, AF Coordinator Division of Funding Partner Relations Directorate of Global Partnerships and External Relations United Nations Industrial Development Organization - UNIDO Implementing Entity Coordinator	
Signature		**Date:** 8 August 2025
Project Contact Person	Meryem SGHIR +43 1 26026 364743 M.SGHIR@unido.org	
Telephone	+43 1 26026 3708	
E-mail	TO: g.onysko@unido.org CC: gef@unido.org / glo@unido.org / f.haidara@unido.org	

Annex 2. Stakeholder Engagement, Mission Schedules, List of People Met, and Summaries of Discussions

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
September 9, 2024 MinDA Office, Davao City	Janet M. Lopoz James Doldolia Ahmed Dacumtan Fercy Cavan Sylvester Sales Kenny Bryalle Mendez	Undersecretary & Executive Director Program Coordinator Development Management Officer Consultant Development Management Officer Technical Staff	Mindanao Development Authority (MinDA)	 The meeting revolved around the discussion of projects that MinDA thought can address the urgent needs of Mindanao. First point, MinDA should prioritize its development agenda in strengthening the climate change resilience of farmers in Mindanao specifically for fruits and vegetable industry, which can be submitted for international funding support. USec Lopoz provided the overview and salient points of the project concept and she underscored the importance of focusing on food security in Mindanao, given that it is one of the biggest producers of agricultural products such as fruits and vegetables in the Philippines. Yet, it encounters a lot of challenges, among them is the lack of adequate enabling environment, infrastructure and resources to ensure food security and capacity of farmers to deal with climate change. There are barriers that need to be surmounted and hopefully through the project, these can be tackled sufficiently to ensure better livelihood, good health and well-being of the local communities and indigenous peoples of Mindanao. Discussion with the MinDA team yielded relevant points which are included in the project concept. From then on, conducting further stakeholder consultations is necessary to include all concerns, challenges and issues, including gender and social inclusion of the relevant stakeholders, partners and beneficiaries on the ground.
December 8 and 10, 2024 MinDA Office, Davao City	James Doldolia Sylvester Sales Dr. Alexander Campaner	Program Coordinator Development Management Officer Assistant to the President on Special Projects	MinDA Davao del Sur State College (DSSC), Davao del Sur	 Discussion meetings with MinDA technical team were done in order to make further elaborations on the project concept, its goals, objectives, activities, and indicative budget aMins. A list of stakeholders, partners, and target beneficiaries was drawn to aid in planning for the next round of stakeholder consultations onsite in Regions 10, 11, and 12, which are the identified regions regarded as potential project sites. These are the areas where fruits and vegetables are largely grown and produced in Mindanao, which suffer low farm productivity due to extreme weather events (such as drought, flooding, extreme heat), and other technical factors such as lack of support infrastructure, capacity building, and better market access. Another meeting was held with the representative of an academic institution. The project concept was discussed to determine potential alignment of interests and capabilities. DSSC expressed support and interest in project participation as their college has aligned its academic and research mission on fruit and vegetable agriculture and post-harvest. Their institution can contribute to extension works with farmers and cooperatives, while the project can also support their research endeavours specifically on impact and risks of climate change to land and soil suitability of fruits and vegetable farming in their region.
December 9, 2024 Davao City	Joana Bea Patricio Cherrilyn Baylon Isaias Escabarte	Project Support Officer Project Support Officer Project Support Officer	Philippine Rural Development Programme (PRDP) – Mindanao	 A meeting with the Philippine Rural Development Programme (PRDP) - Mindanao team was also done in order to discuss its programme scope and activities, its alignment, and potential complementation with the proposed project. This World Bank-funded PRDP will end on 2029, so potential complementation for scaleup activities in fruit and vegetable production and post-harvest operations may be possible when this project proposal is implemented before 2029, specifically for farmer-cooperatives which are focused on banana, cacao, and other fruit plantations, that require bigger investments in machinery and support infrastructure.

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
December 10, 2024 Davao City	Ireneo Dalayon Romeo Cabanial Douglas Gacasan Alex Lazaro Karen Varquez	General Manager Consultant Chairman and President Manager Technical staff	Federation of Farmer Cooperatives in Mindanao (FEDCO) PERT, Inc	 A consultation meeting with the officers of the Federation of Farmer Cooperatives (FEDCO), composed of 5 small-farmers cooperatives and 7 Agrarian Reform Beneficiaries (ARBs) in Mindanao, mostly growing banana, cacao, and other tropical fruits, was held together with private sector to initially discuss the project concept and determine the federation's potential interest, plus the relevant needs and concerns of farmers which the project can address. The federation expressed support and interest to participate in the project as its farmers-members need access to post-harvest and high-value product processing facilities and sufficient capacity to tackle farming issues. For a few years now, the banana plantations suffer from disease infestation, exacerbated by extreme drought, high temperatures, and unpredictable weather, rendering these farms useless and the farmers without income.
December 11, 2024 Davao City	Evelyn B. Taboada *List of all participants is available in separate file.*	Resource Person	Mindanao Blue Economy Forum organized by MinDA	 There was an opportunity to present during the Mindanao Blue Economy Forum organized by MinDA a recently concluded project on renewable energy supported by EU-ASEP and implemented by UNIDO and MinDA, and its subsequent continuation on harnessing renewable energy-and-water nexus in a solar-powered desalination project to be funded by Adaptation Fund in Tawi-tawi province of BARMM, Mindanao. During this activity, the highlight was a good discussion on project complementation as well as sharing of best practices and lessons learned which are valuable in implementing projects across Mindanao.
December 12, 2024 Davao City	Evelyn B. Taboada *List of all participants is available in separate file.*	Resource Person	Mindanao Farmers Summit organized by MinDA	  The Mindanao Farmers Summit organized by MinDA was well-attended with over 850 farmer-participants from all-over Mindanao. During this day, a quick-questionnaire survey was conducted to have a rapid assessment of the status and conditions of the agriculture (fruit and vegetable) market in Mindanao from the perspectives of the farmers. A separate report is done on the survey results as part of the stakeholder consultations done to support the project proposal preparation. Furthermore, a presentation was also done to inform the participants of the proposed project and to solicit thoughts, concerns, challenges and issues that can be addressed through the project. The farmer cooperatives expressed interest to be visited in the next round of consultations so they can showcase onsite their farms and current activities, and express their needs, concerns and challenges, especially that extreme weather conditions affect their farming cycles and productivity. These combined issues led them to seek support because they are losing their main livelihood. Women farmers openly expressed their difficulties in carrying out laborious and physically-repetitive tasks during farming, which limits the land area and crops they cultivate. Both men and women suffer from extreme weather conditions during farming (e.g., extreme heat and extreme precipitation such as heavy rains resulting in flooding that cause destruction of crops, forced migration and unintended displacement), and financial setbacks, food insecurity (reduction or destruction of farm produce for subsistence), and abrupt changes and shifts in traditional family roles.

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
December 13, 2024 Davao City	Marissa Abella Cherry Ann Auxilto Ellen Grace Isturis Mel Chrisel Sales Sylvester Sales	City Councilor Office staff Executive Director Faculty Researcher Development Management Officer	Local government unit (LGU): Davao City; Resilient Management for Agriculture (RMA) Foundation; Univ of Southern Mindanao (USM); MinDA	 A meeting with the Davao City Environment and Agriculture Committee was held in which full support for the project was provided. Recommendations were made on potential project sites where local communities and indigenous peoples may be considered as the target beneficiaries, as they are vulnerable and susceptible to climate change risks and extreme weather events, affecting their farm productivity, especially those farmers focusing on the fruit and vegetable industry. Further private sector partnership is highlighted to support the farmers in the long term, by connecting them directly to the buyers. Further, the RMA Foundation's capacity to assist in community development activities can be tapped as deemed necessary in organizing the farmers for capacity building and ensuring inclusivity. During this meeting, the roles of women in agriculture were highlighted such as in efficiently leading the agri-entrepreneurial ventures of the farmer cooperatives, in attending and representing meetings, workshops, and trainings more often than men (as the latter prefer and tend to stay in the farms), and are more adept at accessing and managing micro-financing mechanisms/programmes to support the needs of their farms such as the farm inputs, labor, and logistics.
January 15, 2025 Naawan, Misamis Oriental, Region 10	Elnor C. Roa, PhD Dr. Rey Y. Capangpangan Anabelle Dece A. Espadero Christian Fel Batoctoy Jolibe B. Llido	University Chancellor Vice Chancellor for Research, Innovation, and Global Engagement Vice Chancellor Research and Extension Secretary MSU-Naawan Staff Instructor	Mindanao State University - Naawan	  MSU-Naawan is advancing cacao product development as part of their research and development program and excels in community engagement, promoting good agricultural practices like sustainable crop planting techniques through partnerships with LGUs, community organizations, cooperatives, and farmer associations in Northern Mindanao. The potential role of MSU-Naawan in the project, amongst others, may include provision of expertise on good agricultural practices and environmental protection through the conduct soil suitability studies and development of innovative agricultural solutions (e.g., nanotechnology, circular economy practices) for the fruit and vegetable industry, engaging in capacity building, value chain improvement, market access and promotion.
January 15, 2025 Cagayan de Oro, Region 10	Antonino Pequito	Vegetable Buyer/Trader	Bulua Vegetable Landing Area, Public Market	  An onsite interview with a vegetable buyer and trader in the biggest public market in Cagayan de Oro, Region 10, was conducted. Some of the highlights of the interview were the following: (a) unpredictability in vegetable purchasing prices; (b) the buying strategy involves purchasing bulk vegetable produce with the buying price already corrected (deducted) by 25-30% to account for losses during transport and handling and produce that do not meet quality standards (called "rejects"); (c) the rejects are subjected to a secondary sorting process in which the usable portions are collected and re-sold for lower prices, while some are chopped and mixed with other vegetables, creating a composite product for resale, often packaged and marketed as "sari-sari," a local term denoting mixed or assorted items; (d) the good quality vegetables are then distributed to different areas in Mindanao, Visayas and Luzon through its networks. In the meeting, it was highlighted that men and women have distinct roles in this part of the value chain, as men tend to do physically-demanding work (transporting and carrying the farm produce) and

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
				women handling the business and marketing side of farm products. Women and youth are also taking charge of recovering and re-selling "fruit and vegetable rejects" at low prices.
January 16, 2025 Poblacion Talakag, Bukidnon, Region 10	Liezel U. Barros Fred Caezar S. Yuion	Municipal Agriculturist Agricultural Technician	Municipal Agricultural Office (MAO), Municipality of Talakag, Bukidnon	 The following are the highlights during the meeting with the municipal agriculturist: (a) while production is well-supported through company partnerships, farmers struggle with postharvest processing and market access; (b) adopting digital systems (e-commerce) can reduce reliance on middlemen, which allows farmers to sell fresh and processed products directly to customers and increase income; (c) every market day, product prices drop significantly by midday due to sudden oversupply, which reduces farmers' earnings despite initial high prices in the morning; (d) middlemen control sales, often excluding farmers from pricing decisions; (e) farmers receive 75% upfront payment, with at least 25% withheld while products are in-transit to account for the final losses and rejects; (f) the Miarayon Food Terminal, which is meant to improve trade and pricing stability, is currently not operational for some reasons; (g) Talakag and nearby municipalities have extensive agricultural land, with Indasulao (60,000 ha) and Talakag (10,000 ha), offering significant potential for farm expansion and modernization; (h) fertilizers, pesticides, and seeds are expensive, with no locally available organic alternatives readily accessible by farmers; (i) despite municipal campaigns, organic farming adoption remains low due to perceived delayed benefits (5+ years) and lack of transitional support; (j) despite its efficiency, fertigation remains underutilized due to the high cost of materials sourced from other regions; (k) Talakag's proximity to major markets (Cebu, Dipolog, Surigao) presents opportunities, but logistical issues hinder farmers from capitalizing on them; (l) the adoption of technology-based farming methods requires training and resources to be effectively implemented; (m) integrating modern technologies like sensors and automation could attract younger generations to practice agriculture, ensuring its long-term sustainability; (n) many young individuals hesitate to enter into farming due to its hardships and low profitability; (o) incentives and awareness campaigns could shift this perception. On top of these challenges, the farming areas are very vulnerable to extreme weather patterns and sudden climatic changes such as heavy rainfall, extreme drought, high temperatures, unpredictable weather, and even occasional typhoons and strong winds, which were not normal patterns in the past. The municipal agricultural office (MAO)'s potential role in the project would be the provision of trainings to support the local production of organic inputs like compost to reduce farming costs. Women's roles in local farming include preparation of planting materials and farm inputs, farm irrigation, assistance during harvest, and taking charge of sorting out the produce and separating "rejects" and wasted parts. Health-wise, both men and women farmers are affected by (in)direct exposure to synthetic pesticides and fertilizers, extreme heat, and the grueling demands of physical labor.
January 16, 2025 Brgy. Miarayon, Talakag Bukidnon, Region 10	Lezel Dela Cerna Anafe D. Sihagan Noli Dela Cerna Sr. Gelbert A. Sulod Jessel Linog Jermie L. Angel Dennis Salido Jeneva Angel Cherry Lyn Obaan Geralyn A. Dela Cerna	Chairperson Board of Director Board of Director Board of Director Cashier/Treasurer Member Member Member Member Member	Talaandig Farmers Agriculture Cooperative	  The highlights during the meeting are the following: (a) farmers sell produce to Bulua traders, with 50% going to loan repayment, and 50% split between farmer and financier. Cooperative members at Bulua facilitate trade, (b) no cooperative-managed water system; (c) 1,400 households rely heavily on rainwater, thus, needing sustainable irrigation solutions; (d) limited tractors cause delays in farming cycles aside from its high rental fees; thus, a cooperative-managed tractor rental system is needed to resolve this issue; (e) other challenges identified in farming include lack of organic-certified seeds, technical training, and processing facilities. The cooperative is operating with low budget

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
	Glaiza B. Villamor Precy C. Angel Jerric Sihagan Gloria Angel Ermelita D. Angel Erlie D. Angel Reylito L. Angel	Member Member Member Member Member Member Member		and requires financial support for start-up and expansion for some farmers to augment income, including a chicken dung processing facility for organic inputs. Farmers lack transport funds necessitating access to loans from middlemen. The cooperative aims to expand beyond Bulua market and needs to explore access to other better market such as direct online selling. No facilities yet for processing and value-added products potential such as dried chili, tomato paste, and organic fertilizers. Some recommendations identified are the following: investment in sustainable irrigation, mechanization, processing, and cooperative-led market expansion. At the cooperative level, men and women have already defined roles, in which men oftentimes handle the physical work while women tend to deal with the business and marketing side. Women also manage the household chores on top of assisting in the farm during planting, harvesting, and post-processing. The latter works are usually not paid, but recognized as assistance to the spouse's farm work to increase efficiency and productivity.
January 17, 2025 Poblacion, Kabacan, North Cotabato, Region 12	Debbie Marie B. Versoza Arnabie A. Murray Rey John O. Cortez Monaira I. Sumael Harem R. Roca Urduja G. Nacar Avegale Roy Ivy Mar Caburnida Glyn Magbanua Ritchel O. Torres Mel Chrisel Sales	Vice President Extension Service Officer Extension Service Officer CA/Research CA/Research Dean, College of Human Ecology and Food Science College of Extension Coordinator Food Technology Faculty Extension Service Office Extension Service Office CA/Research Faculty Researcher	University of Southern Mindanao (USM), Kabacan, North Cotabato	  The highlights of the consultation meeting with USM-Kabacan are as follows: (a) USM is interested in promoting some tropical fruits grown in its area such as durian, marang, mangosteen, mango, cacao, and lanzones; (b) the university produces several scalable products and partnering with cooperatives or the private sector potentially increases scalability of the developed technologies; (c) there are products developed ready for commercialization but need intellectual property (IP) protection; (d) to safeguard IP and enhance technology commercialization (TC), the University established the USM Intellectual Property, Technology Transfer, and Business Development Office (USM IPTTBDO). USM-Kabacan's potential role in the project are as follows: (a) leverage university experts in agricultural and biosystems engineering (ABE), soil science, nanotechnology, food technology, and climate approaches to support and enhance science-based outcomes and outputs for the project; (b) conduct rapid assessment on its ongoing initiatives, current outputs that can be leveraged for greater impact, and possible contributions to the fruits and vegetable industry; (c) provide science and technology expertise, and serve as base agency for SOCCSKSARGEN (Region 12); (d) develop land and soil suitability maps; (e) innovate processing and packaging solutions to extend the shelf life of produce and crops, all of which can include support in the capacity building of farmers and cooperatives. The university also include GAD and GEDSI in their community extension work in the agriculture sector.
January 17, 2025 Makilala, North Cotabato, Region 12	Dr. Ramon N. Floresta Oliver D. Vinluan	Chairman/President	RNF Industries Corporation	  The consultative meeting with the private sector (RNF Industries Corp) have the following highlights: (a) durian farming is a good business in Mindanao due to its land and soil suitability for growth, (b) skin thickness of durian can be improved through temperature and nutrition adjustments and its proper plantation setup and pollination strategies enhance productivity; (c) High costs in Malaysia and other countries growing and exporting durian make organic durian farming profitable for the Philippines as it has a competitive edge with lower heavy metal content in soil; (d) diversifying markets beyond China can help augment exports, thus focus on efficient cold-chain logistics

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
				and reduced transport costs would be beneficial for the farmers; (e) durian trees are long-living but require climate-smart techniques like irrigation and rainwater harvesting; (f) durian paste and chips are in demand, which offers new revenue streams and reduces postharvest loss; (g) policy shifts needed to support high-value crops and streamlining export regulations will improve competitiveness; (h) building a strong brand for Mindanao durian, with certifications and global partnerships, will enhance market presence. The potential roles of private sector such as RNF Industries in the project would be the following: support research and share best practices in durian farming to improve quality and ensure long-term sustainability for local farmers; facilitate market entry by providing market insights, fostering partnerships, and supporting infrastructure development to meet international standards, assist with logistics solutions, promote postharvest handling best practices, and work with local stakeholders to ensure products meet international export standards; provide technical assistance and collaborate with agricultural experts to develop sustainable farming protocols tailored to local climate and soil conditions; invest in large-scale durian cultivation in Mindanao (target to address the ff.: quality control, farming standards, and infrastructure development for long-term growth); and form strategic alliances with local farmers and international distributors, ensuring a steady supply of high-quality durian and driving market diversification. In addition, the susceptibility of durian to extreme weather conditions and climatic changes necessitates the use of technologies which can readily monitor these climatic changes and thus, inform farmers in real time of upcoming weather events that may affect the farm's productivity. In turn, farmers need to enhance their capacity to use technology to its advantage and enable decision-making with the aid of science-based information.
January 17, 2025 Makilala, North Cotabato, Region 12	Mario B. Alolosan Maria Helenita Betsy Gamela	Chairman Executive Director	Don Bosco Foundation for Sustainable Development Inc.	  The following are the highlights with the consultative meeting with Don Bosco Foundation for Sustainable Development, an active non-governmental organization (NGO) in the area: (a) establishment of cold storage, post-harvest, and processing facilities as shared service centers would be beneficial for farmers; (b) knowledge hub integration for market access, e-commerce, and digital finance is necessary; (c) financial support for product development, packaging, certification, and marketing; (d) value chain improvements, including equipment acquisition (e.g., tractors); (d) proposal-based grant distribution aligned with project needs; (e) collaboration with government agency such as Department of Science and Technology (DOST) for free equipment access; (f) organic farming transition needs funding, training, and certification (for example, Participatory Guarantee System or PGS certification for 1,200 farmers – this is a method for certifying small-scale organic farmers, in which locally-focused quality assurance system is anchored on community-based assessments); (g) environmental risks such as the use of banned pesticides should be monitored and discouraged; and (h) weak policy enforcement and bureaucratic resistance limit agricultural impact. The potential roles of Don Bosco Foundation in the project can be as service provider and facilitator for farmer training and certification (Organic farming education, PGS certification); market linkages (connecting farmers to buyers, supporting branding and packaging), technical support (assisting in eco-friendly farming transitions), and advocacy and policy support (such as in strengthening organic certification and pesticide regulation). Emphasis on women and youth participation in all areas of the agriculture sector is promoted and encouraged. Women and youth are provided with reserved seats in decision-making discussions.

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
January 18, 2025 Koronadal, South Cotabato, Region 12	Brian Derpo Aelai Jah Dela Cruz	Marketing Manager Admin/Finance Manager	Phoenix Larrrel Agriventures	  A consultative meeting is held with a potential private sector partner and stakeholder in the project, which produces organic farm inputs such as bio-fertilizers and bio-pesticides which can be applied to a variety of fruits and vegetables. This company participated in the Mindanao Farmers Summit and expressed willingness to support the project through capacity building and training services in organic farming and in the supply of organic farm inputs. Photos (above) show their production facilities in South Cotabato, Region 12.
January 20, 2025 Panabo, Davao Del Norte, Region 11	Esteban Cequiña Ramil C. Aucabo Joel F. Adran Reynaldo A. Delgado Roger Verano Marcelino B. Palarao Marcos H. Bernados, Sr. Lito N. Away Reynaldo D. Araneta	Chairperson Manager "A" Chairman "A" Vice Chairman Board of Director Board of Director Board of Director Secretary Board of Director	Diamond Farms Agrarian Reform Beneficiaries Multi-Purpose Cooperative (DARBMUPCO)	  This consultative meeting was co-organized by FEDCO, which is the federation of 5 small-farmers cooperatives and 7 Agrarian Reform Beneficiaries (ARBs) in Mindanao, mostly growing banana, cacao, and other tropical fruits. Representatives of cooperatives and private sector partner were present as they shared their sentiments and challenges in the fruit farming industry. The highlights of the meeting are as follows: The farmer-cooperatives have this common problem in their current banana plantations: extreme infestation of Panama disease on Cavendish banana and high farm inputs while buying price is getting lower, lack of farm implements to support efficient farming, and the lack of capacity to tackle extreme weather events and climate-induced risks such as drought, high temperatures, and severe infestation of pests and diseases. The farmers thought of shifting to sustainable organic farming of banana and other fruits, however, they lack support in transitioning their farms into organic ones. As such, they identified some specific needs such as technical assistance in soil studies which include analysis and suitability of crops, trainings on organic farming procedures, farm equipment such as drones for spreading organic fertilizer, cable ways, and better access to market such as digital e-commerce. The federation suggests to re-organize themselves such that those farmers-members who are committed to shift to organic farming will be the priority for assistance and support in good agricultural practices such as sustainable organic farming. Women and youth have opportunities and identified roles in the cooperatives. All claimed that climate-related events such as extreme heat and drought, plant-disease infestations, and extreme precipitation (heavy rains and flooding) affect the productivity of the farms and cause plenty of challenges.
	Felix P. Cinco	Board of Director, Stanfilco Employees Agrarian Reform Beneficiaries Multi-Purpose Cooperative (SEARBEMCO)		
	Godofredo D. Escultura Alexander M. Libres	Board of Directors, Casig-ang San Miguel Multipurpose Cooperative (CASMI-MPC)		
	Anastacio B. Antivesto	Chairman, AMS Kapalong Agrarian Reform Beneficiaries Multipurpose Cooperative (AMSKARBEMCO)		
	Rene Dalayon Romeo Y. Cabanial	General Manager, FEDCO Consultant, FEDCO		
	Douglas Gacasan Dwight Gacasan Alex Lazaro Karen Varquez	Chairman CFO Manager Technical Staff	PERT Inc.	
January 21, 2025 Brgy. Malabog, Paquibato District, Davao City, Region 11	Marissa S. Abella Ellen Grace Isturis Placido Villaceran Jerry G. Sason Ruben O. Delos Santos Dennis S. Cañaliso Richard G. Juaton	City Councilor Executive Director Representative Representative Representative Representative Representative	Davao City Resilient Management in Agriculture (RMA) Foundation Malandangi Farmers; Nursery Farmers; *Quarry Farmers;	  The following are the highlights during the consultative meetings with the farmer groups in the Paquibato district in Davao: (a) the farm lands are planted with a variety of fruits and vegetables that include bell peper, cauliflower, spring onion, cucumber and durian, "pinakbet" vegetables, with nurseries of lettuce, Chinese pechay, lanzones avocado, and a variety of other locally-consumed vegetables. The challenges encountered by farmers are the following: (a) vegetable produce has a dedicated supermarket as buyer but only few of the products

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
	Rocila O. Bantayan Ronda B. Sabate Alecia L. Suazo Sally S. Carlos Imelda Overis Angelita G. Labtic Elma Canoy Analiza F. Serenio Maricel M. Estorco Evelyn B. Bolo Mary Joy Lagumbay Glenda M. Ceniza Emalinda P. Laguntay	Member Member Member Member Member Member Member Member Member Member Member Member Member Member	Balugo Farmers; Malabog United Farmers Federation; Malabog United Farmers Federation - Women's Group; *Referring to a local area which is near a quarry	are sold because the products do not meet the supermarket's standard quality; (b) younger generation is not into farming because they see it as low income, unlike other alternatives such as construction work where there is regular pay; (c) the high farm inputs and low price of the produce, exacerbated by unpredictable weather conditions experienced in their locality make farming difficult as means for livelihood. The farmers' association initially identified needs as follows: training center for the farmers (farmers need training for farm management), demo farms where they can have hands-on learning especially in managing impacts of extreme weather patterns; and (c) knowledge hub for digital e-commerce (direct selling of produce). In addition, RMA Foundation can assist by serving as partner in community development. In this district, women have their own cooperative-associations as well which deal with the production and marketing of cash crops and various agricultural produce, mainly fruits and vegetables. Reduced efficiency and farm productivity are their identified challenges, which is mainly attributed to unpredictable weather conditions and their competing roles at their respective households, with the latter as not paid work but necessary to do. Women farmers often complain about the effect of regular exposure to synthetic pesticides and fertilizers, affecting their health and well-being, which compels them to find alternative options such as sustainable agricultural practices. However, they lack knowledge, skills, and resources to pursue such good agricultural practices.
January 22, 2025 Brgy. Madaum, Tagum City, Davao del Norte, Region 11	Jerome Amulata Victoria B. Montenegro Ramon R. Sabaricos Pablo Pacula Rodrigo Ramos Gregorio Omapas Leoderic P. Luzenada Rufina T. Piano Benita M. Lao Nestor V. Sumbilon Florita C. Timbulan	Chairman Secretary Board of Director Board of Director Board of Director Board of Director Chairperson/Secretary Board of Director Board of Director Board of Director Board of Director	Gawasnong Mag-uuma ARB Association Inc. (GMARBAI); Federation of Independent Organizations in Rural Areas in Mindanao (UNORKA-Mindanao); Sto. Tomas Individual Farming Agrarian Reform Beneficiaries (SIFARBCO); DACTARBAI PARBAI	  These farmer-cooperatives were some of the participants of the Mindanao Farmers Summit and they requested a visit by the project team as they needed support in their farming challenges. The following are the highlights during the consultation meeting: (a) UNORKA-Mindanao having 1,800 active members, has the main problem in their current banana plantations: (a) extreme infestation of Panama disease on Cavendish banana; (b) high farm inputs while buying price is getting lower; and (c) the lack of farm implements/material such as cable ways for banana harvest. In order to resolve these issues, the farmers decided to shift to sustainable organic farming of banana. In doing so, these are their identified needs: soil studies which include analysis and suitability of crops, trainings on organic farming procedures, farm equipment such as drones for spreading organic fertilizer, cable ways, and better access to market such as digital e-commerce. The federation suggests to manage the farm equipment use like the handling and operation of drones on behalf of the farmers, the hiring of women and youth to manage the digital e-commerce system, and ensure the youth's interest and participation in agriculture to sustain food security. Oftentimes, men are managing the farms while women stay at home to do household chores. Women do not have access to sufficient resources and they often have disproportionate workloads exacerbated by unpredictable weather patterns, are usually engage in micro-entrepreneurship and other odd jobs, to earn income and contribute to the needs of the family.
January 23, 2025 Compostela Valley, Davao de Oro, Region 11	Donwin Villodres Renerio Marababol Jessica Casila Cliench Marababa Joy Villamor Rhyan J. Pestaño Nicanor Flores Jr. Jessica Beatrix Danola	Chairperson Vice Chairman Secretary Executive Secretary Treasurer Board of Director Board of Director Board of Director	Lower Bango Agriculture Cooperative (LOBACO)	  This farmer-cooperative attended the Mindanao Farmers Summit and requested to be visited in their area to express their interest to be supported by the project. To note, Compostela Valley in Davao de Oro, Region 11, is one of the very vulnerable areas in Mindanao to climate-induced risks

Date and Place	Names of Participants	Position	Institution/ Organization	Photos, Topics Discussed/Potential Roles & Responsibilities in the Proposed Project
	Sarmiento Piedra Disodado Mansanares Jr. Frank Candido Cabangbang Sergio Candilada	Member Member Member Member Member		and extreme weather events in recent years. The biggest risk that has been experienced and currently a recurring event in their locality is extreme-flooding which causes the farms to be drowned in water and thus destroying their produce as quickly. In equal measure, the area also experiences extreme drought and warmer temperatures, which make farming cycle difficult to predict. The coop expressed the need for support in whatever way in order to assist them in capacity building and in preparing themselves to tackle extreme weather events. Technical assistance and provision of support infrastructure and equipment (such as tractors and weather stations) are identified as their immediate need in order to manage their farm productivity favorably. The need for dikes and catch basins and proper land management and soil suitability analysis would be helpful in their farming livelihood. Post-harvest facilities are needed to augment income and reduce operational costs.
January 24, 2025 Brgy. Sirib, Calinan, Davao City, Region 11	Marcelo Lupiba Loren C. Dulay Joel E. Agod Jethro D. Chu Mar Joshua B. Manabe Lee Young Ronita Buenaventura Luz Lagudas	Chairperson Brgy. Kagawad	Davao Mt. Apo Farmers Agricultural Cooperative (DAMAFACO) CAMP Asia CAMP Asia CAMP Asia CAMP Asia	  This farmer cooperative is practicing inter-cropping by growing durian alongside coconut and cacao and decided to shift to sustainable organic farming as the ultimate approach to manage their farms well. The following are the highlights during the consultative meeting with them: (a) Currently, the cooperative is a recipient of technical support from CAMP Asia, which is a Korean-based NGO that is working with MinDA to support the durian industry in Mindanao. The project support has 3 phases in nine years, namely: capacity building and technical trainings (Phase 1), expansion of farms (targeting 400 farmers/members in 2029); and certification and market access (Phase 3). However, the cooperative needs further support to drum up a full-circle in developing the fruit industry in Mindanao, which are not included in the Camp Asia support, such as the provision of processing facilities for bio-based farm inputs and the nurseries for the organic seedlings. DAMAFACO's potential role in the project as one of the target beneficiaries is to assist other farm cooperatives in capacity building and replication efforts and to provide support in scaling up processing facilities for organic farm inputs and nurseries of organic seedlings.